e-CF: A Framework for Exploring Online Consumer Behaviour

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Lillian Clark

University of York

Department of Computer Science

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Abstract

Consumer behaviour is a complex and diverse phenomenon, affected by a myriad of economic, cultural, psychological, emotional and environmental factors which cause even the same consumer to exhibit quite different behaviour depending on context. This complexity and diversity are further exacerbated by the emergence of the postmodern consumer – one who shapes and is shaped by their shopping experience. For these consumers, the interactivity inherent in online shopping makes it the natural choice for the experience-creating consumer. Viewing the online consumer through the lens of terrestrial consumer behaviour does not adequately capture their interactive nature, while viewing them as "users" in the interaction design sense does not adequately capture their complex and diverse natures.

This thesis proposes the e-Consumer Framework (e-CF) as a structure for developing and communicating an understanding of the online consumer as both a consumer and a user of interactive technologies. The e-CF is constructed through the use of Grounded Theory, using both ethnographic data and existing literature to develop seven common interdependent themes of online consumer behaviour. Three case studies are then presented that demonstrate the use of the e-CF in understanding online consumer behaviour by providing a structure for exploration that enables identification and comprehension of behaviours within a shopping domain and provides a structure for making useful comparisons between domains. The role of the e-CF in interaction design is then examined, looking at the use of e-CF based explorations in developing design strategies and use of the e-CF as a structure for persona development.

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Author's Declaration

Some of the material presented within this thesis has previously been published in the following papers:

Clark, L., Wright, P. (2007) "Off Their Trolley – Understanding Online Grocery Shopping Behaviour". Accepted for presentation at Home/Community Oriented ICT 2007 conference, August 22-25, Chennai India.

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Clark, L. (2005). "Towards an Understanding of Online Consumer Behaviour". *Adjunct Proceedings INTERACT '05*, Rome, pp 35-36

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All the work contained within this thesis represents the original contribution of the author.

1 Introduction

> "When we wonder whether we 'buy' an argument, we acknowledge...that selling and consuming are inseparable from the modes in which modern minds think or speak themselves."
>
> (Bowlby, 1993)

Whether it's viewed as a chore, a way of achieving a goal, a way to pass the time, a preferred means of entertainment, a means of expressing identity or as an addiction, it is clear that shopping occupies an ongoing role in our lives and consciousness. As consumers, we grapple with deciding what goods and services we want and how we will obtain them on virtually a daily basis. Our behaviour as consumers is complex and is affected by a myriad of economic, cultural, psychological, emotional and environmental factors (Solomon *et al*, 2002; Schiffman & Kanuk, 2004) which cause even the same consumer to exhibit quite different behaviour depending on context (Miller *et al*, 1998). For example, how a consumer acts when purchasing groceries will differ from their actions when purchasing clothing not just because of the nature of the products involved but also because of different attitudes and experiences the consumer has towards food versus clothes shopping. Adding to this complexity is the fact that consumers are evolving from passive entities primarily reacting to stimuli that trigger needs and influence decision-making (McNeal, 1973; Walters, 1976) to "postmodern" consumers – creative and innovative individuals who interact and initiate experiences, shaping their shopping experience rather than having the experience thrust upon them (Firat & Venkatesh, 1995; Szmigin, 2003; McCarthy & Wright, 2004).

For these postmodern consumers, the interactivity inherent in the Internet makes online shopping a natural choice. On the other hand, it is this same interactivity that poses problems when trying to apply knowledge of terrestrial consumer behaviour to online consumers. Underhill (2000) complains that the design of many e-Commerce sites is "still in the shopping Stone Age" because they "go against the way human beings move through any space" and attributes this failing to the fact that site designers are not retailers. However this complaint assumes that an understanding of terrestrial consumer

behaviour and the design considerations made as a result of that understanding are transferable to the online consumer. Consider the following scenario:

It is December 1st. Melanie is sitting at her desk at work, eating her lunch and doing her Christmas shopping. She opens her web browser and decides the first gift she's going to purchase is something for her mother by the singing group G4. She types in the URL for Amazon and enters "G4" into the search box. Amazon returns 3 pages of search results, including various CDs, DVDs and books about the group. Melanie examines a few of the search results, but is not familiar with G4 or classical music in general and is also unsure as to which of the items her mother may already have. She switches to AOL Messenger and sends an Instant Message to her brother in Australia to see if he's online. When he replies, she sends another IM to ask his advice on what to buy their mother and he suggests via IM that their mother would particularly like a DVD of the group's live performance. Melanie returns to her Amazon search results and finds a DVD titled "G4 – Live At The Royal Albert Hall", but the price is £24.99 which she feels is rather expensive for a DVD. Melanie opens another browser window and types in the URL of Play.com, another music/film vendor. She enters the name of the DVD into the search box, presses GO, then opens up a third browser window and types in www.tesco.com, then selects Entertainment and Books, DVDs and again enters the name of the DVD. Melanie then returns to the Play.com window to examine the results of her search, but the item is listed there at £27.99. She returns to the Tesco window and sees that Tesco carries the DVD at £22.99, but she knows from previous experience that Tesco will also charge £2.99 for delivery. She contemplates looking for the DVD in e-Bay, but then considers that the last few DVDs she purchased from e-Bay were copies and while she has no compunctions about buying copies of DVDs for herself she feels a copy would be unsuitable as a present for someone else. She returns to the Amazon window, adds the G4 DVD to her shopping basket and then notices under "People Who Bought This Also Bought" the new Bill Bryson book, which she recalls is her brother's favourite author and decides to add this to her shopping basket as well. The phone then rings and Melanie answers it only to be told there's an emergency project meeting starting in five minutes. Melanie closes down her browser windows, knowing that the items she selected will stay in her shopping basket and leaves the room.

In the above scenario, Melanie compared prices for an item with three different vendors simultaneously, made an impulse purchase for another item based on what other people had bought in the past, consulted with a family member in another country – all while eating her lunch at her desk – and then abandoned her shopping in the middle with the expectation that it would all be there waiting for her when she got back. None of

these behaviours would be feasible and/or practical in a terrestrial environment. The way online consumers move through online retail space is significantly different from the way they move through a terrestrial shop and it follows that the design of that space must differ as well.

If we accept that good practice for interaction design and evaluation should spring from a thorough understanding of both the user and the user's task (Cooper, 1999; Preece *et al*, 2002), then the multifaceted nature of consumer behaviour presents a particular difficulty – how to adequately understand and communicate online consumer behaviour to interaction designers and other stakeholders of e-Commerce systems. Developing an understanding of users for interaction design has often been based on specific user activities or artefacts, leading many researchers to approach online consumer behaviour by focusing on a single transactional component such as decision making (Keen *et al*, 2004; Miles *et al*, 2000), or a single aspect of online consumer attitudes such as trust (Egger, 2003; Gupta *et al*, 2004). Unfortunately this type of approach, by grounding the conceptual model of the consumer to a specific activity or artefact, leads to neglect of the complexity and diversity of consumer behaviour by attributing undue significance to one single aspect (Wolfinbarger & Gilly, 2003; Clark & Wright, 2005). In addition, the tendency of interaction designers to categorise users by such criterion as levels of expertise (Dix *et al*, 2004) is problematic, given that a criteria such as expertise could refer to a consumer's computer expertise, product expertise or online shopping expertise, all of which could be at different levels for any one consumer and all of which could impact behaviour.

Collaborative design techniques, such as Participatory Design, try to provide a richer understanding of users by involving them in the design process. This presents two particular issues in designing interactions for online consumers. Firstly, these techniques rely on making the user "an equal partner in the design team" (Preece *et al*, 2002). Instead of placing the designer in the online consumer's world in order to understand how the consumer makes sense of it, collaborative techniques in effect take the online consumer *out* of their world and place them in the world of the designer. Secondly, these techniques rely on identification and inclusion of a workable number of users and contexts that can adequately represent the interests and contexts of the whole user population, which is highly unlikely given the variability of consumer behaviour. Without a way to extrapolate these individual interactions to a wider target base or, as Dourish puts it (2006), "relate the local to the global", one may be left with an understanding that is only representative of those consumers who participated in the design process.

These issues point to the need for interaction designers and other stakeholders to develop an understanding of the complexity and diversity of online consumer behaviour and an appreciation of the online consumer that recognises the subject as one who shapes and is shaped by both their interactions and their shopping.

1.1 The Research Challenge

In developing an approach to understanding the online consumer, one must recognise this area of research represents the intersection of two disciplines – Human-Computer Interaction (HCI) and consumer research. Both of these disciplines have their roots in psychological sciences, but within both a number of different perspectives on the human user/consumer can be discerned. These range from the Positivist to the Constructivist.

Positivism, the approach to the sciences that presumes an objective, value-free reality to scientific phenomena also presumes that knowledge of this reality can be gained through quantitative data obtained from carefully controlled experimentation. Constructivism, on the other hand, does not presume an objective, value-free reality but rather one that is "represented through the eyes of the participants" (Robson, 2002) and that knowledge of the participant's view of their world can be gained through qualitative research obtained from observation and interviews. The Positivist perspective seeks to develop theories that define relationships between concepts with the objective of explanation or prediction of phenomena, while the Constructivist theory seeks to understand phenomena and is abstract and interpretive in nature (Charmaz, 2006). The Positivist approach lends itself to the construction and validation of predictive models of behaviour, underpinned by experimentation, in order to identify the results of a user's or consumer's sequence of activities. The Constructivist perspective lends itself to construction of concepts and theories that assist the researcher in interpreting the user's or consumer's world. The extent to which the findings of Positivist research can be generalised is subject to statistical measure and qualification, the extent to which the findings of Constructivist research can be generalised is subjected to inductive reasoning based on social factors such as cultural consistency (Williams, 2000).

In this thesis the aim is to research postmodern consumer behaviour with a view to informing HCI design. Firat and Venkatesh (1995) discuss the problems of researching postmodern consumer behaviour, given that the postmodern consumer's reality is self-constructed (particularly through electronic media) and fragmented (not tied to one particular consumer experience). In suggesting ways forward for consumer research they state that "The consumer needs to be studied as a participant in an ongoing, never-ending process of construction that includes a multiplicity of moments where

things...are consumed, produced, signified, represented allocated, distributed and circulated." Consequently it would seem that Constructivist approaches which are geared to understanding how individuals makes sense of their own experience as consumers would provide the best match to the research aims of this thesis.

A particular challenge in cross-disciplinary research is reconciling potential ontological differences, especially as there appears to be a degree of vagueness in the language used by consumer researchers to describe a number of key concepts. One such imprecision is in the use of the word "model" and this will be discussed further in Chapter 2. However the more problematic inconsistency is in use of the phrase "consumer behaviour". Behavioural research within HCI can be approached from either a Positivist or Constructivist perspective (Niehaves & Stahl, 2005), but the word "behaviour" can connote a more objective, physical and deterministic meaning, similar to stimulus-response theories of learning for example. Within consumer research the term "behaviour" is used in a number of different and sometimes seemingly inconsistent ways. For example, the phrase "consumer behaviour" is defined in one basic text as "...the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs or desires" (Solomon *et al*, 2002), while another basic text defines "consumer behaviour" as "the behavior that consumers display in searching for, purchasing, using, evaluating, and disposing of products, services and ideas." (Schiffman & Kanuk, 2004). In the first definition, the emphasis is on process, while in the second definition the emphasis is on what is observed, and neither set of authors take a particularly deterministic viewpoint on consumer activity. In fact, the phrase "consumer behaviour" is often used to describe any aspect of consumer activity, experience or perspective under study. Even the word "experience", which has become increasingly popular in understanding HCI (e.g. McCarthy & Wright, 2004), takes on a different shade of meaning in consumer research, where the "experiential" perspective in consumer research focuses on the consumer's affective responses, often measured in controlled quantitative studies (Solomon *et al*).

Therefore in order maintain a degree of consistency, especially in the context of existing consumer research literature, this thesis will continue to use the phrase "consumer behaviour" as the generic term for the activities, perspective and/or experience of the consumer.

1.2 Thesis Aims and Structure

This thesis describes the rationale for, development of and utilisation of a framework for understanding and exploring online consumer behaviour known as the e-Consumer Framework, or e-CF for short. This framework, by identifying the common interdependent themes of online consumer behaviour, provides a structure for developing the understanding of the complexity and diversity of the online consumer's world and how that world changes as interactive technologies evolve.

Chapter 2 will look at the issues inherent in achieving an understanding of online consumer behaviour by comparing and contrasting the frameworks used to discuss and explore general consumer behaviour versus those of the "user" within HCI and how this has affected understanding online consumer behaviour. This analysis will show that the frameworks that underpin much of the research into online consumer behaviour do not adequately recognise the online consumer as both a consumer and a user of interactive technologies, which in turn leads to various methodological and conceptual problems within the research such as lack of ecological validity.

Chapter 3 will describe the choice of Constructivist methodology used to construct the e-Commerce framework (e-CF), the rationale used to select the domains and participants for the e-CF development and the criteria used to address validity and suitability of the e-CF for developing an understanding of online consumer behaviour. Following on from this Chapter 4 will describe how the e-CF was constructed using Grounded Theory methodology.

Chapter 5 will look at methods for exploring online consumer behaviour through use of the e-CF as a structure for gathering data from online consumers, identifying patterns and comparing behaviours across domains. In addition, a method will be described for uncovering designer assumptions about the users of e-Commerce sites.

Chapters 6-8 will describe three case studies in exploring online consumer behaviour using the e-CF as the framework for exploration. The first case study, online Christmas shopping, details the development and results of an e-CF based survey for examining online Christmas shopping and the subsequent picture that emerges of online Christmas shoppers, a picture that underscores the issues inherent in comparing reported behaviour with actual observations. The second case study, online grocery shopping, also uses an e-CF based survey to develop pictures of online consumers who did and did not buy groceries online in order to understand difference in motivation and experiences between the two cohorts. The third case study, online leisure travel shopping, uses questions derived from the e-CF to examine three popular websites used by UK leisure

travel consumers in order to understand the assumptions site designers made about their users and the implications of these assumptions.

Chapter 9 will examine how the e-CF can contribute to interaction design activities, including identifying approaches to design strategies and the role of the e-CF in constructing design personas. Chapter 10 concludes with a reflection on the development of the e-CF and suggests areas for future refinement and research.

2 The Problem of Online Consumer Behaviour

> "It [internet shopping] is not home shopping with knobs on. It is something fundamentally different."
>
> James Roper, Interactive Media Retail Group (Pesola, 2004)

This chapter will look at the issues inherent in achieving an understanding of online consumer behaviour by comparing and contrasting the frameworks used to discuss and explore general consumer behaviour versus those of the "user" within HCI and how this has affected understanding online consumer behaviour. This analysis will show that the frameworks that underpin much of the research into online consumer behaviour do not adequately recognise the online consumer as both a consumer and a user of interactive technologies, which in turn leads to various methodological and conceptual problems within the research such as lack of ecological validity.

These problems point to the need for a framework for exploring online consumer behaviour that recognises the complexity, diversity, non-linearity and interactive nature of the online consumer. The chapter will end with a discussion of what this framework should look like and what it should achieve.

2.1 Approaches to Understanding Consumer Behaviour

As the scenario described in the Introduction showed, consumer behaviour is a complex non-linear phenomenon. The number and types of internal and external variables that can affect such behaviour are plentiful and the relationships between these variables are often intricate, context dependent and not necessarily obvious to either the consumer or the observer. As one small but typical example of this complexity, Underhill (2000) describes the case of a US drugstore that had placed their display of aspirin and related products in the main aisle of the shop, assuming that placing this display in a high traffic area would provide convenience to customers and increase sales. However, the shop noticed that over time sales of these products were actually performing below expectations. When Underhill and his research team spent time observing and recording how consumers behaved when examining the display, they noticed that the display was in the same aisle as the refrigerated beverages and consequently many teenagers who entered the shop passed by the aspirin display on their way to purchase drinks. The aspirin shoppers, who were generally older, were visibly uncomfortable with the

teenagers rushing past them and would often stop their browsing of the aspirin display and leave the shop without making their purchase. This example illustrates how one small environmental factor, the location of an unrelated product display, could in a particular context affect the behaviour of consumers for another product and how this relationship was not initially predicted and was only discovered by actual observation of behaviour.

By examining traditional approaches to understanding consumer behaviour, one can gain insight into how researchers and educators explore the complexity of this behaviour and how the understanding gained from these explorations is used to inform design of retail environments. In discussing these approaches, a degree of inconsistency is noted in researchers' use of terms such as "process", "model" and "framework" for the structures used to communicate and explore consumer behaviour. Therefore, for the purposes of clarity, this chapter will use the term "framework" when discussing these depictions, using the author's original term in quotes where relevant.

2.1.1 Frameworks of Consumer Behaviour – Sequential

Sequential frameworks, in which the consumer's behaviour is presented as a series of steps or stages that generally occur in a particular order, are popular structures for discussing consumer behaviour, particularly in instructional texts.

Adcock *et al* (2001), in their introduction to consumer behaviour for marketing practitioners, start their discussion with a simple 7-stage "process" of:

1. Need Recognition
2. Choice of Involvement Level
3. Identification of Alternatives
4. Evaluation of Alternatives
5. Decision
6. Action
7. Post-Purchase resolution

While this framework is clearly an example of a sequential approach with a specific start and end point, Adcock *et al* provide several caveats to their framework in pointing out that the consumer does not necessarily go through each stage of the process unless the purchase is a "high-risk" one and that each stage can vary with the consumer or type of purchase.

Blythe (1997), in introducing concepts of consumer behaviour to managers, describes a five-stage framework similar to that of Adcock *et al* (2001) but based on traditional psychology models of decision making:

1. Need recognition
2. Pre-purchase activities or search
3. Evaluation and purchase decision
4. Act of purchase and consumption
5. Post-purchase evaluation

While such sequential frameworks can accurately list certain stages of consumer behaviour and serve as structures for introductory exploration of discrete aspects of such behaviour, they also suffer from being static and linear as they portray a static process flow with little recognition of the relationships between stages.

2.1.2 Frameworks of Consumer Behaviour – Influences and Feedback

McNeal (1973), in describing his generalised "model" of consumer behaviour, starts with a definition of "consumer" as a customer buying for personal use. This definition neglects the fact that consumers often make purchases for others and the recipient of the purchase should be considered an influencer, a point stressed by Walters (1976) and Adcock *et al* (2001). Regardless of this questionable definition, McNeal's model is worth examining as it did cover the impact of external factors and feedback on consumer behaviour. McNeal's model is illustrated in Figure 2.1.

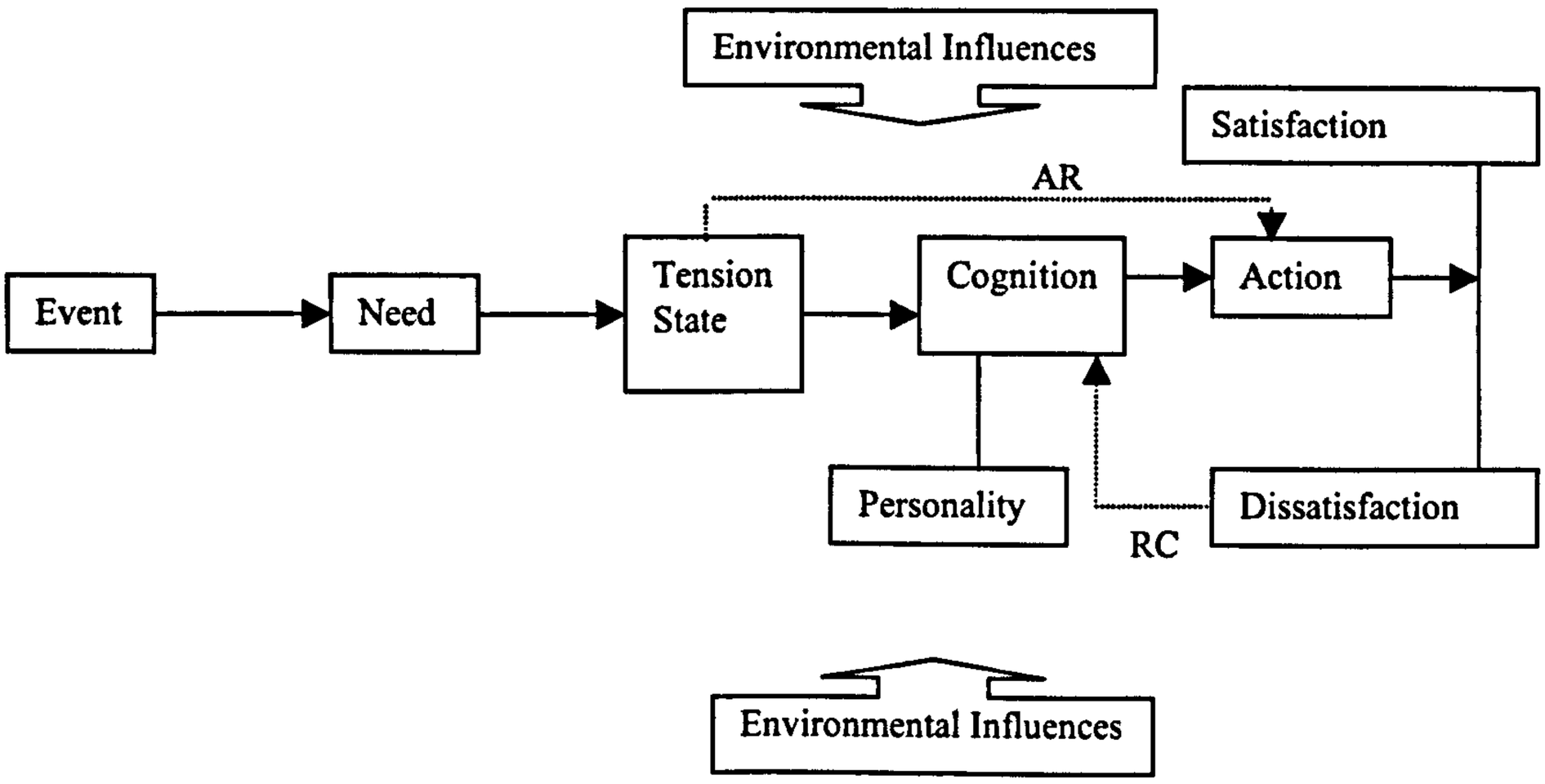

Figure 2.1 – Generalised Model of Consumer Behaviour (McNeal, 1973)

In McNeal's model events instigate consumer behaviour and these events may be biological, sociological or psychological in nature. These events in turn generate a "Need" – the sensation of something lacking. McNeal divides Needs into two categories; "Defined" (needs that are consciously recognised) and "Undefined" (needs that are unknown or not well defined). Like Adcock *et al* (2001), McNeal views Needs as eventually emanating from one of the layers of Maslow's hierarchy of needs, however McNeal also argues that Needs cannot be created by marketing but only awakened. For example, an advert suggesting a particular model of car is desirable because it will enhance one's image works only where the consumer has a basic need for esteem which they then believe can be filled by purchasing this car, but it cannot create that need for esteem in the first place. As McNeal states, "Consumers…are their own masters, and their needs, ultimately, are their own creation. The degree of influence that business has on these needs is strictly determined by how much is allowed by the consumer".

McNeal's "Tension State" is the state of discomfort felt until the Need is met. The magnitude of the Tension State is relative to the importance of the Need, the time lapsed since awakening of the Need and the extent to which the Need is Defined or Undefined, which explains why the most effective sales pitches are those targeted to the Need during the Tension State. Tension States can come from several related needs, for example a consumer can need a particular car for both transportation purposes and esteem. However, Needs can also be deferred and the consumer can learn to live with the tension state. In addition, some Tension States are ongoing (e.g. esteem) while others are recurrent (e.g. hunger). If the Tension State arises from Defined Needs, the Need will direct the consumer to some action to get satisfaction – an Automatic Response (AR). If the Need is Undefined, the consumer then moves to the next stage.

"Cognition" is the term used by McNeal to describe those of the consumer's mental operations designed to reduce or resolve the Tension State by a) deciding what will relieve the state and b) determining a course of action. These operations generally are:

- Make sense of the stimuli creating Tension State
- Think of Tension State reducers
- Order by satisfaction-producing qualities
- Select
- Determine action to obtain

Cognition itself can also be a need-generating event (e.g. need for money to make purchase), or can remove or reduce the need due to recognition of other needs (e.g.

saving the money for another purchase) or reprioritisation of the need. From this observation McNeal contends that the term "impulse purchase" is misleading, in that there is a degree of cognition before the purchase is made, even if the consumer's original need was not for that item.

"Personality" is used by McNeal to describe the consumer's attitudes and knowledge, which become the main sources of information for Tension State reduction strategies. If the Tension State is reduced or the Need is removed, then "Satisfaction" occurs. If the Tension State is not sufficiently reduced or the need is not removed, then "Dissatisfaction" occurs and the consumer will probably return to the Cognition state (RC). In either event (and the outcome of the consumer's Action can produce degrees of both Satisfaction and Dissatisfaction), the consumer usually remembers the experience and will use this information if a similar Need arises again, tending to select the same action if satisfaction was previously achieved and leading to what marketers call "brand preference" or "store preference".

Finally, McNeal states that "Environmental Influences" occur at all stages of consumer behaviour. They can trigger events, influence the type and degree of Needs and Tension States and affect Cognition and the degree of Satisfaction.

McNeal's framework is more illustrative of the complexities and influences inherent in consumer behaviour than Adcock *et al* (2001) or Blythe's (1997) frameworks, which limit themselves to the steps contained within McNeal's concept of Cognition. However, McNeal also depicts a process with a discrete start and end point. Little or no emphasis is placed on issues outside the process, such as how the post-acquisition experience can influence recognition of Needs or can even become the events that lead to further Needs.

2.1.3 Frameworks of Consumer Behaviour – Post-Acquisition Experience

Walters 1976 "Dynamic Model of Consumer Behavior" (Figure 2.2) is in some ways similar to McNeal's 1973 model, but places more emphasis on the post-acquisition experience.

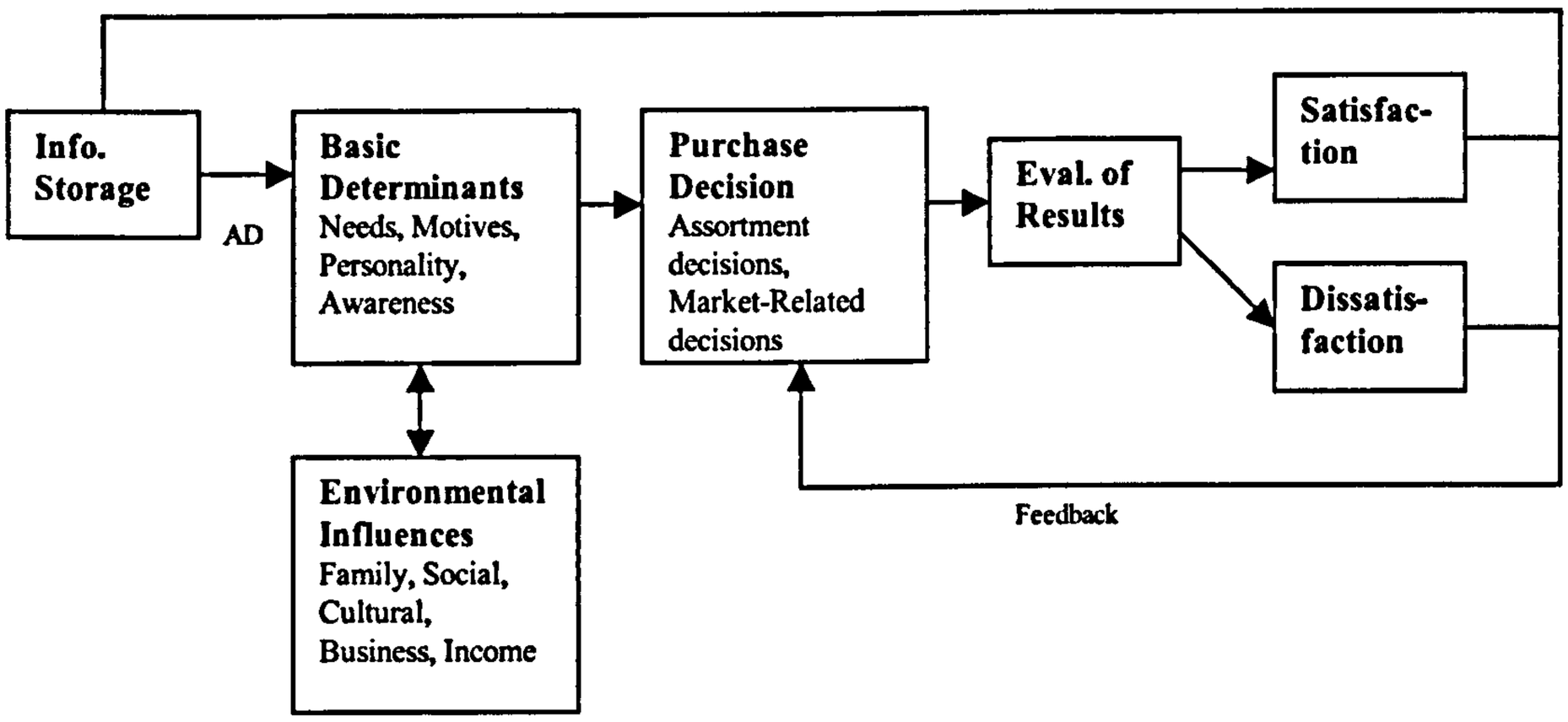

Figure 2.2 – Dynamic Model of Consumer Behavior (Walters, 1976)

Walter's model starts with "Assortment Disequilibrium" (AD) where the consumer is made aware of some deficiency in their assortment of goods. This in turn causes the "Basic Determinants" to begin acting on the consumer, along with "Environmental Influences". These in turn generate needs which lead to a "Purchase Decision" of what to add to the existing assortment of goods and how to obtain that addition. The results of these decisions are then evaluated and stored for not just future purchase decisions, but also become an input to Basic Determinants.

Unlike McNeal (1973), Walters puts less emphasis on the events that trigger needs and the resultant Tension State, but does acknowledge that "In a real sense, the process never ends because most consumers are always in some state of disequilibrium for some products." Walters also stresses that, for the purposes of analysing behaviour, the consumer should be considered as the one actually making the purchase rather than the one who will be using the item purchased, as the recipient of the consumer's purchase is actually playing the role of an Influencer.

2.1.4 Frameworks of Consumer Behaviour – Non-linear Approaches

It can be argued that frameworks such as McNeal's (1973) or Walters (1976), despite their levels of complexity, still present relatively linear representations of consumer behaviour. Other practitioners prefer a more interactive and interdependent model. For example, Markin (1974) proposes a "Holocentric model" of consumer behaviour (Figure 2.3) which "...posits that although some feature of factors affecting behavior may appear dominant and may strongly affect certain individuals, that factor(s) always operates in conjunction with all other factors present."

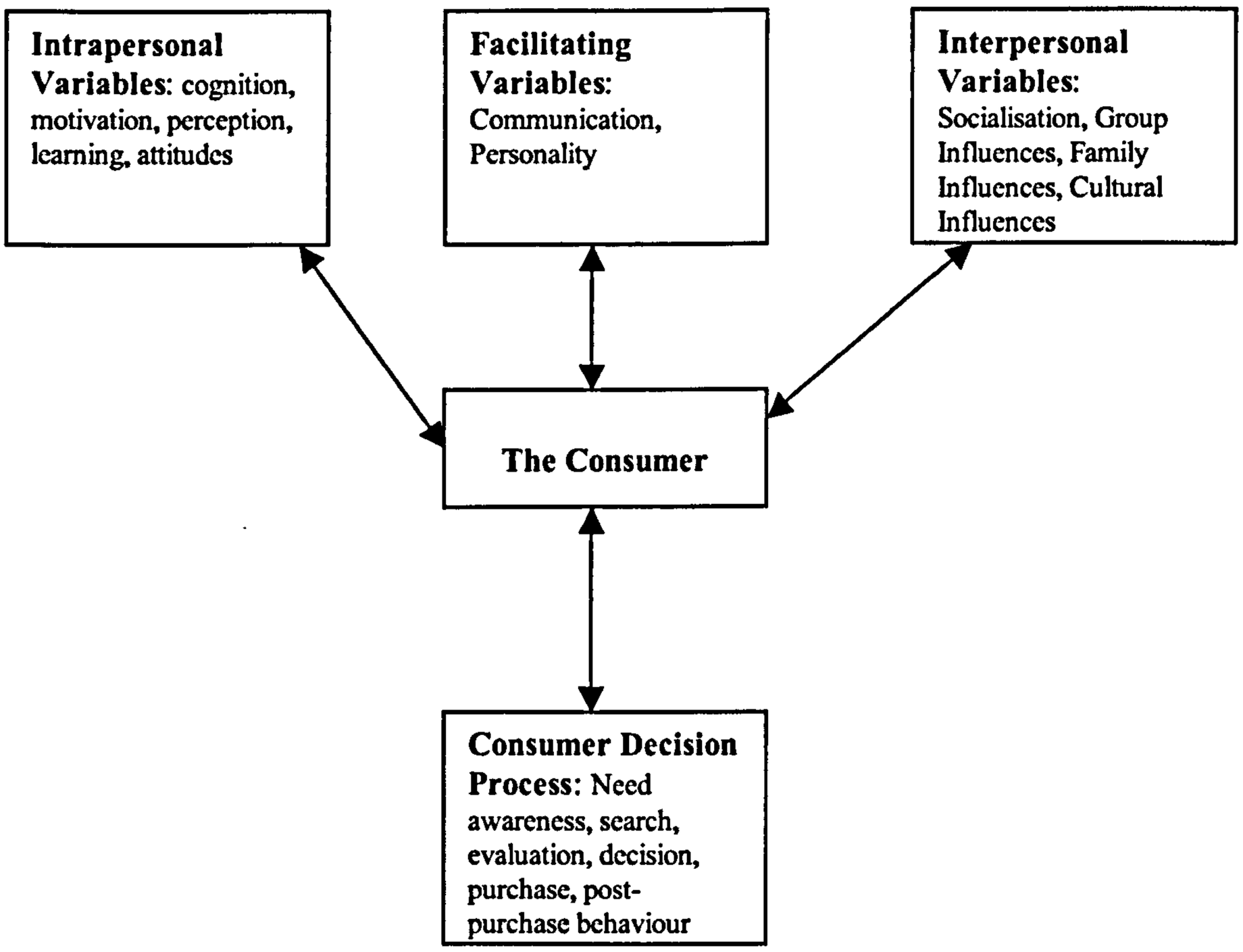

Figure 2.3 – A "Holocentric" Model of Consumer Behaviour (Markin, 1974)

In his guide to marketing for managers Kotler (1999) presents a "seven-Os framework" for developing an understanding of consumers based on questions one could have about the consumer:

Occupants	*Who are the consumers?*
Objects	*What do they need and want?*
Objectives	*What objectives are they trying to satisfy?*
Organizations	*Who participates in the buying decision?*
Operations	*How do consumers make their buying decisions?*
Occasions	*When do consumers seem ready to buy?*
Outlets	*Where do consumers prefer to buy?*

These types of non-linear frameworks, in which various behavioural aspects or themes are identified and used as the basis for further discussion and research, are also reflected in current educational textbooks on consumer behaviour, such as those of Schiffman and Kanuk (2004) and Solomon *et al* (2002). Use of these frameworks also allows the authors to discuss various specific processes inherent in consumer activity, such as decision making, in the context of an overall picture of the online consumer's world.

2.1.5 Frameworks and Complexity

The consumer behaviour frameworks described above form a representative sample of the various models used in the literature as the exact structure of any framework used will vary depending on the focus and/or background of the researcher – e.g. Marketing for Adcock *et al* (2001) and Kotler (1999), Management for Blythe (1997), Psychology for Markin (1974). However it is worth noting that these and other frameworks do have certain features in common – they identify need as an early step, stress the impact of environmental issues, cover post-purchase activities and recognise that specific activities such as product selection are complex multi-step processes. In short, these frameworks demonstrate that consumer behaviour is understood not as a simple task, but as a complex and continuous set of interactions that commences before the consumer has even entered the retail environment and continues well after consumption.

2.1.6 Dealing with Diversity

In addition to the intricacies of individual behaviour, there is also the problem of diversity as consumers come in a variety of types, backgrounds, motivations and profiles. Not only does the researcher into consumer behaviour need to identify complex patterns of behaviour, but they are also faced with the challenge of identifying which patterns relate to which consumer profiles as well as their relevance to particular shopping domains. In order to provide a structure for understanding this diversity, the principle of market segmentation is often used. Market segmentation divides consumers into specific groups that have specific needs and wants, thus allowing marketers to devise particular strategies based on understanding the behaviours, needs and wants of the particular segment (Kotler, 1999; Adcock *et al*, 2001). By dividing consumers along demographic, psychographic (interests, opinions, attitudes), psychological, contextual or other recognised profiling criteria, marketing and retail practitioners establish frameworks from which they can build models of consumer behaviour that delineate specific patterns of behaviour. The benefit that segmentation brings to marketing and design is not that of producing a simplified understanding of a consumer's complex behaviour. Segmentation aids in identifying predictable patterns that can be used to inform marketing activities and support retail design, especially in the terrestrial environment where the vendor has a higher degree of control over the interaction. In the previous example of the aspirin purchasers, recognising the behaviour of particular segments – in this case the older purchaser of aspirin and adolescent buyers of soft drinks – enabled the shop designers to make decisions concerning display locations.

2.1.7 Using Frameworks of Consumer Behaviour

An understanding of consumer behaviour gained through the use of frameworks and segmentation is used for a variety of purposes in marketing and retail activities. One particular example is in designing the environment in which the consumer operates to enhance the consumer experience which in turn should affect behaviour. In the case of the bricks-and-mortar store, this environment is not simply just the arena where Adcock *et al*'s Action (2001) or Walters' Purchase Decision stage (1976) or McNeal's Cognition/Action stages (1973) take place. The store environment can also act as a strong environment influence on the consumer, even to the point of creating the need for a product in the first place. Additionally, as Solomon *et al* (2002) point out, the consumer increasingly expects entertainment and/or experiential dimensions from a retail environment and not simply as a passive recipient but an active co-creator of the experience. As for the post-purchase stages of consumer behaviour, Liu and Arnett (2000) state that consumer satisfaction can come not just from the product and services purchased but also from the "personal and emotional" rewards that can derive from the experience, especially when shopping is used as a form of entertainment.

Looking at general issues of store design, Turley and Milliman (2000) review the results of a number of studies measuring atmospheric influences on consumer behaviour and identify five basic categories of atmospheric variables:

1. External variables such as the building, the area, the store windows, etc. are the first set of cues normally seen by a customer and if not well-managed "the rest of the atmosphere may not matter".

2. General interior variables such as colour, lighting and background music influence approach/avoidance behaviour, time spent in the store and eventually sales made.

3. Layout and Design variables include traffic flow and placement of racks, with studies suggesting that more unplanned purchases take place when consumers have no time pressure and low store knowledge.

4. Point-of-Purchase and Decoration variables, including prominent displays and pictures, have been shown to have a positive influence on sales.

5. Human variables, both employee and customer, can influence sales – for example, perceived crowding has a negative effect on consumers.

Turley and Milliman conclude that responses to a retail atmosphere will vary for different groups as individual characteristics will affect responses to these variables and

therefore speciality stores, which target a specific demographic, stand a better chance of inducing more consistent behaviour in their customers. The consumers' motivation is also demonstrated to influence their perception of the atmosphere, as task-oriented shoppers perceive more crowding than hedonically-motivated ones. Solomon *et al* (2002) refer to the overall response to retail atmospherics as "store gestalt" and maintain that this is a key part of retailing strategy.

In addition to overall impact, store design can influence or detract from particular stages of a consumer's behaviour. For example, in looking at factors during the information search stages, Vrechopoulos *et al* (2004) examine previous store layout research and find that a grid layout (rectangular arrangement of displays and long aisles generally running parallel to each other) facilitates routine and planned activity and allows both flexibility and speed, hence its typical use in supermarkets. Freeform (asymmetric arrangement of displays and aisles in different sizes and shapes) increases the time consumers spend in the store as it facilitates browsing, hence its use in many department stores. Racetrack/Boutique layout, where each area of the floor is organised around a theme with a track/path to lead the consumer along as many departments as possible, is discovered to be the best for creating unusual and entertaining shopping experiences.

Some of the more recent and noteworthy research in the area of retail design has been done by Underhill (2000), who uses ethnographic techniques to construct a "science of shopping". Underhill observes that a flaw with many previous approaches to store design is that the suitability of a design was often measured by till receipts, traffic patterns, number of customers and/or surveys. As a result, many aspects of store design were not correctly linked to those stages of consumer behaviour that occur before the actual purchase transaction. By use of observation, Underhill determines that even small design factors have a significant influence on consumer behaviour – for example, the appearance of a half-filled display could actually have a negative impact on consumers if poorly designed.

Underhill (2000) also illustrates how design could be altered to facilitate behaviour for different types of consumers in the same store. For example, supermarkets generally use a layout designed to make the average consumer traverse as many aisles as possible so as to increase exposure to as many products as possible. This design is unattractive to the consumer who wants only a small set of basic products and is unwilling to invest the time or effort needed to walk through the entire store, especially as groceries are considered low-involvement purchases. Underhill shows that, by placing certain basic products such as sandwiches or drinks at the entrance to the store, an environment can

be created that is friendly to both passive consumers willing to walk the entire store and active consumers wanting specific basic products. Underhill also notes in a more recent work (2004), that in some cases, for example the Diesel jeans stores, a deliberately confusing and disorienting experience is promoted in order to drive new customers to seek help from sales clerks but also gives veteran shoppers a sense of knowledge and power in keeping with the product's image – in effect another example of store design catering for multiple experiences and multiple variations of consumer behaviour.

These examples of approaches to retail design research illustrate the point that a well-grounded understanding of the complex and continuous interactions of consumer behaviour is a critical part of designing the setting in which the consumer operates, but it must be borne in mind that traditional retail design assumes a setting where the retailer effectively controls the interaction and the consumer is *reacting* to stimulus. In the case of the online *interactive* consumer, one needs to incorporate the principles of interaction design, starting with how the so-called "user" is understood.

2.2 Approaches to Understanding the User

Over the years, the definition of a "user" within HCI has evolved from the mechanistic executor of a specific function within a system to an active partner in shaping their interaction environment (Kuutti, 2001). This evolution of the user from "factor to actor" (Bannon, 1991) can be viewed as analogous to the evolution of the consumer from reactor to instigator, but recognition of the complexity of user behaviour has been less pronounced. While interaction design recognises that user behaviour can be influenced by a variety of factors and that user tasks can be intricate in nature, there has been a historical tendency to promote artefact or task-based perspectives of user behaviour in order to simplify the interaction. Understanding of contextual issues are well developed in some domains (notably Computer-Supported Cooperative Work), but less so in others – for example, the role of polychronic activity (combining several activities into the same time block) as a factor in Internet user behaviour. Recognition of user diversity has also been restricted in the past by artefact or task-based perspectives, with users often categorised into one-dimensional task-related categories such as beginner-intermediate-advanced.

Like their counterparts in marketing and retail, HCI practitioners utilise various segmentation principles, most notably the development of user personas and scenarios as frameworks to produce models of user behaviour in order to inform design (Cooper, 1999; Cooper & Reimann, 2003). However, this leaves the HCI practitioner with the challenge of trying to develop their own criteria for persona and scenario profiling and

development. One common approach to persona development is to identify a manageable number of relevant behavioural variables, map participants against these variables and then describe this mapping in narrative form (Goodwin, 2002). In the case of online consumers, however, the complexity of their behaviour can lead to an unworkable number of observed behavioural variables with no obvious indication of their relevancy, while critical variables can be missed altogether. For example, an observer may or may not notice what other applications a user has open when shopping online, let alone understand whether this is a relevant variable.

2.3 Approaches to Understanding Online Consumer Behaviour

Having compared marketing/retail and interaction design approaches to understanding behaviour, attention can now turn to reviewing previous research into online consumer behaviour in order to examine how this body of research does or does not reconcile these two perspectives of complex/diverse/non-linear consumer and user of interactive technology.

For some time, various consumer researchers have recognised that a good number of consumers would be drawn to environments that would facilitate at least the action stages of their behaviour. In the 1970's, McNeal (1973), recognising that shopping in many circumstances could be onerous, predicted that over time consumers would turn to alternative channels "to avoid some of this unpleasantness". When e-Commerce began to reach consumers in the 1990's, some saw the appeal as the "...endless search for convenience" (Grewal *et al*, 2004). Studies such as Bellman *et al*'s (1999) showed that the typical online consumer led a "wired lifestyle" and was "time starved", again suggesting that convenience was key.

If that was indeed the case, then viewing online consumer behaviour as virtually identical to terrestrial consumers would make sense, with the Internet being used as simply a different means to conduct the actual purchase transaction, much like catalogue shopping. However, by 2004 it was estimated that in the UK alone up to 18 million consumers had purchased goods or services online, with online shopping growing to 6% of total UK retail spend and at the then current rate of growth, 37% year-on-year, online shopping would be 10% of the total UK retail market by 2005 (Pesola, 2004). As catalogue shopping has never been more than 5% of the UK retail market, this strongly suggests that for the consumer the attractions of e-Commerce represent something more than a convenience-driven variation of the catalogue experience.

Drawing exact analogies between online and terrestrial consumer behaviour can also be misleading, as the various conventions and constraints of terrestrial shopping do not necessarily map directly onto the online experience. A case in point is the constraints surrounding aborted shopping transactions. Cho (2004), in examining why online consumers may abort a transaction, concludes that the most likely instances are consumers who have not had previous positive experience or attitudes towards online shopping, or who have high levels of concern over not being able to examine the goods, or concerns about delivery and return processes. The drawback to this approach is its failure to address the extent to which online consumers use the transaction as simply a way to gather information rather than as part of a purchasing activity. For example, the consumer may load their online shopping cart in order to determine shipping and delivery costs as part of comparison shopping, or the site may not accurately reflect product availability until an item is added to the cart. Alternatively, the online consumer may decide, for whatever reason, that they no longer want or cannot afford the products, but unlike terrestrial shopping they can comfortably (and anonymously) abandon the shopping cart altogether. In other words, perhaps the online consumer, unlike their terrestrial counterpart, abandons transactions simply because they *can*. Internet-based shopping, by affording activity not readily supported in a terrestrial setting, adds a further level of complexity and diversity to the online consumer's behaviour.

According to Szmigin (2003), one of the key ongoing changes in consumer behaviour has been the transition from a passive reacting subject to the "postmodern" consumer, one who is creative and innovative and who interacts and initiates experiences. McCarthy and Wright (2004) state than an experience is only complete when it can be differentiated from others, or comes to an end, or has a unifying emotion. However, when it comes to consumer behaviour, "...consumers are not passive; they actively complete the experience for themselves." This suggests that consumers actively construct and shape their shopping experience, rather than having the experience thrust upon them. As Szmigin points out, one of the key tools of the postmodern consumer is the Internet.

Given the aforementioned marketing/retail approaches to understanding consumer behaviour versus the HCI approaches to understanding user behaviour, how is one to understand online consumer behaviour? Online consumers behave in a manner no less complex or non-linear than their terrestrial counterparts and the very nature of online shopping means that online consumers are at the forefront of empowered postmodern consumerism. Online consumers are also an increasingly diverse group – by 2006 UK consumers in the 34-44 age group were expected to devote more of their budget to

online Christmas shopping than any other age group in the UK with women three times more likely to buy gifts online than men (BBC, 2006c), thus ending the stereotype of the 18-35 year old male online shopper.

As these consumers *interact* rather than *react*, understanding their behaviour in the context of traditional retail design alone is clearly insufficient. Even the more general frameworks such as those of Markin (1974) or Kotler (1999), while they may recognise the consumer as an instigator of activity, don't leave room for exploring their interactive capabilities. However, understanding their behaviour in the context of traditional interaction design approaches is also problematic, given that these approaches are often based on a desire to reduce behaviour to simplified linear processes.

2.3.1 Loyalty and Trust

In examining previous research into online consumer behaviour a marked tendency to concentrate on a particular theme of behaviour is noticed, with the implicit assumption that, aside from that particular theme of interest, there are no other differences of note between online consumer behaviour and its terrestrial counterpart. One theme that has generated more attention and research in e-Commerce design has been the incorporation of features to induce consumer trust.

Shneiderman (2000) defines trust as the positive expectation a consumer has based on past performance and guarantees. He calls for "new social traditions" for e-Commerce to replace the interpersonal cues of eye contact, face-to-face contact, handshakes, etc. inherent in most traditional forms of commerce. Shneiderman's suggested guidelines for e-Commerce design revolve around the principles of a) inviting participation by ensuring trust and b) accelerating action by clarifying responsibilities. Suggested features include:

- Disclose past performance
- Provide references
- 3rd party certification
- Make privacy and security policies easily accessible
- Clarify each participant's responsibilities
- Provide clear guarantees and compensation
- Support dispute resolution and mediation services.

Shneiderman's contention is that the e-Commerce site designer's goal must be to the engage users quickly and establish "strategic trust" – the willingness to trust for a specific exchange.

Bhatnagar *et al* (2000) claim that sites must provide mechanisms to "signal" the security of financial transactions on the Web. Light (2001) suggests that by offering opportunities for interaction (the ability of a system to respond to a stimulus) vendors can establish their desire to develop a relationship with the user, leading to consumer trust being built before any trust is explicitly requested. To reinforce this relationship of trust, the vendor must provide commitments concerning responsible use of the user's information and accountability for delivering the product or service requested once commitment is specifically required from the user.

Egger (2003) views trust as the strategy needed to reduce complexity and uncertainty during potentially risky interactions, pointing out that trust is "fuzzy" by nature and not easily addressed by an engineering-led approach to site design. To address this gap, Egger develops a model of trust in e-Commerce (MoTEC) to identify those factors that contribute to the consumer's sense of trust, a set of design principles and guidelines (GuideTEC), a checklist for evaluation of designs (CheckTEC) and a questionnaire for obtaining trust-related feedback from target users. For example, using the MoTEC model Informational Content is identified as an important dimension of trust given that it can both demonstrate competence to the consumer and reduce perception of risk. In turn, GuideTEC identifies Credibility via objective presentation of information as a key design principle for Informational Content and CheckTEC specifies clear labelling of advertisements as a specific design feature of Credibility.

Lee *et al* (2000) also examine the phenomena of Trust, which they define as the willingness to rely on the exchanging partner, when developing their model of Customer Loyalty in e-Commerce. Having defined Customer Loyalty as the intention to revisit a site based on prior experience and future expectation, they describe two factors that impact on this loyalty – Trust and Transaction Cost (the time, money and effort needed to conduct a transaction), with Trust also affecting the customer's perception of Transaction Costs. They identify the following three factors for engendering online Trust:

- Comprehensive Information – extent to which customer has sufficient data to make a purchase decision.
- Share Value – extent to which customer sees other customers as having common beliefs, goal, behaviours.

- Communication – both quantity and quality of buyer-seller communication.

In testing this model against Korean e-Commerce users, Lee *et al* discover that the relative importance of Trust and Transaction Cost varies with the level of product involvement in that customer loyalty to vendors of low involvement products are more impacted by the perceived transaction cost than high-involvement products. From these results they conclude that design features such as feedback and bulletin boards are needed for those sites selling low-involvement products in order to enhance Trust via Shared Values and Communication.

Boersma *et al* (2000) propose Nielsen's "Reputation Managers" as a means of establishing e-Commerce Trust. Internal Reputation Managers, such as feedback and comments facilities, can be effective for building trust, particularly if there is a mechanism to provide feedback on feedback, such as the feedback rating system found on Amazon.com. External Reputation Managers include independent ratings of the site, its brands, services and/or products. In addition, recognised Agents can also act as Reputation Managers.

Gefen and Straub (2004), viewing trust as a primary mechanism to reduce social uncertainty, argue that the relative lack of rules, customs and verifiability inherent in e-Commerce means that online consumers will place an even greater emphasis on trust when shopping and that the online consumer's ability to trust will potentially be hampered unless a perception of social presence can be created on the website. An experiment was constructed to test attitudes to using Amazon.com amongst 250 MBA students, which shows that the dimensions of integrity and predictability are significant influencing factors in online purchasing behaviour. Consumers with a trusting disposition were more likely to trust online shopping and, like their terrestrial counterparts, the experienced online shopper is more wary of overt vendor displays of benevolence than a less experienced shopper. Their conclusion is that features such as personalised welcome pages, emails and photos should be used to increase perceived social presence.

However, Riegelsberger *et al* (2003) examine whether the use of images of people to create trust is applicable to e-Commerce. Their experiment, in which subjects were asked to rate trustworthiness for several financial sites with and without photos of supposed employees of the vendor, produces some rather surprising results – the presence of photos did indeed add to the perception of trustworthiness in sites that had previously been rated poor, but the photos also seemed to detract from the trustworthiness of sites that had been previously rated high. While this would imply that

the use of employee photos on an e-Commerce site actually blunts the consumer's ability to differentiate trustworthy from less reputable online vendors, it should be pointed out that a) the subjects of this study were University students, who it is suggested may put a different priority on the importance of interpersonal cues and b) the subjects were looking at hypothetical investment transactions, rather than actual purchasing of goods or services. In any event, Riegelsberger *et al* are correct in using this experiment to caution designers that use of any type of interpersonal elements should be tested with target users before implementation.

Srinivasan *et al* (2002), starting from the premise that the nature of e-Commerce implies that customer loyalty could manifest itself differently online, identify 8 potential factors that could affect an online consumer's favourable attitude towards an e-Commerce vendor ("e-loyalty"). These factors, called the "8Cs", are as follows:

- Customisation – the ability of the online vendor to tailor presentation to individual buyers.
- Contact Interactivity – the engagement between the online buyer and seller facilitated by the website.
- Cultivation – the provision of targeted information and incentives to the consumer.
- Care – the pre- and post-sales service offered.
- Community – communities of interest organised and maintained by the retailer.
- Choice – the range of products and services on offer at any one site.
- Convenience – the extent to which the consumer perceives the vendor's site as simple and easy-to-use.
- Character – the image or personality projected by the seller's web presence.

While it could be argued that the 8Cs could, in many ways, be a factor in any type of retail loyalty, Srinivasan *et al* claim that e-loyalty is different in nature, in that the facilities and opportunities inherent in e-Commerce and the expectations of online shoppers put a different emphasis on consumer loyalty, how loyalty factors are manifested online and potentially the consumer response. For example, the ability to customise not only the products and services shown to the consumer, but the actual transactional environment itself is a facility far beyond the capability of a terrestrial store. In addition, the importance of consumer loyalty may take on a different characteristic when access to the competition is only a click away. To test the impact of

the 8Cs and the significance of e-loyalty Srinivasan *et al* survey over 1200 online shoppers to measure attitudes and likelihood of repeat purchase behaviour. The results of this survey show that, with the exception of Convenience, these factors do indeed have significant impact on e-loyalty and also demonstrate that e-loyalty does have a positive impact on word-of-mouth and willingness to pay more.

Fogg, preferring to use the term credibility rather than trust when discussing persuasive computing (2003), defines credibility as the believability of a site based on perceived trustworthiness and expertise and considers those qualities more germane to the overall persuasiveness of a website. His studies of websites done in 1999 and 2002 show that design factors for increasing credibility include provision of physical address, telephone numbers, citations and references, email addresses, links to outside materials, a professional look to the site, email confirmation of transactions, updates to the site since last visit and recognition of previous visits. However, he notes that the importance of many of these design factors is less significant in the 2002 study than in 1999, leading him to conclude that some of these factors have become more taken for granted as use of the Internet spreads. One key design element that significantly decreased credibility was the use of pop-up ads and it is interesting to note that this was considered to do more damage to credibility in 2002 than in 1999. Fogg theorises that this is because pop-ups had become more common and hence more annoying. Other design elements in Fogg's study that decrease credibility are difficulty in distinguishing ads from content, typographical errors or other evidence of unprofessional design, random or prolonged unavailability of the site, broken links or other difficulty in navigation.

Fogg also argues that credibility is a requirement for building persuasive media and that computer systems differ from other persuasive media such as television because the interactivity inherent in a computer interface allows it to adjust its tactics to changes in a situation, just as a salesperson adjusts their sales pitch depending on feedback from the prospect. However, unlike a salesperson, computers can be more persistent, offer anonymity, handle large volumes of data, use many modes of influence, scale easily and be ubiquitous – in effect become more efficient sellers than salespeople themselves.

According to Fogg some of the specific ways persuasive computing can be used in e-Commerce include:

- Making a complex task, such as ordering, simple (e.g. One-Click).
- Providing purchase recommendations based on previous buys.
- Sending gift reminders.

- Providing personalised welcome pages.
- Using the social dynamics of a terrestrial store – greet the consumer, guide them to products, ask for information and thank people.
- Using humour to put consumer at ease.

Finally, there are those researchers who maintain that the issue of trust is not as significant as some would believe. Wolfinbarger and Gilly (2003) note that their studies show that security and privacy are not seen by online consumers as directly contributing to the quality of their shopping experience, except possibly amongst frequent customers of an e-Commerce vendor. Given the high correlation between security and website design in their study, Wolfinbarger and Gilly propose that online consumers, especially ones new to a site, make inferences about security from other factors, particularly website design. In her study of aborted transactions, Cho (2004) also discovers that concerns over security do not seem to influence whether online consumers aborted transactions or not. This would imply that once a decision is made to initiate a transaction, trust no longer plays a significant role in what follows, but it is not clear whether this is because by that stage the consumer actually trusts the site, or whether other considerations override trust at that point. Gupta *et al* (2004) also note that risk-aversion generates channel (and vendor) loyalty, but this risk aversion is not simply about trust as it also includes issues of switching costs and previous experiences. In terrestrial models of consumer behaviour risk-aversion itself is positioned as merely one factor in the cognition/evaluation stages (Solomon *et al*, 2002; Adcock *et al*, 2001). As Liu and Arnett (2000) observe, "...a secure Web market does not guarantee customers...security is only a necessary condition; alone it can not attract customers and promote electronic marketing activities."

2.3.2 Other Research Themes

While the concept of trust has produced what is arguably the largest share of research attention into online consumer behaviour, other researchers have concentrated on different aspects of this behaviour as described in the following sections.

2.3.2.1 Technology Adoption

Some of the work done on online consumer behaviour examines online shopping from the perspective of technology adoption and focuses on how general use of the Internet affects consumer behaviour online. Surveys such as Eastin's (2002) of 1000 Internet users in 1999, determines that the likely factors that would lead a consumer to shop online are Internet self-efficacy (confidence in the use of the Internet), followed by

perceived financial benefits, previous adoption of telephone shopping and perceived convenience. Others, such as O'Cass and Fenech (2003) caution that while consumers who are already experienced in non-store shopping (catalogue, TV, telephone, etc.) may be seen as likely targets for e-Commerce, consumer behaviour in the other channels should not be extrapolated to online consumers. Motivators such as perceived usefulness and price sensitivity can have different priorities for online shoppers versus catalogue/mail order shoppers. McCarthy and Wright (2004) maintain that when consumers approach online shopping, their behaviour may be shaped not only by their previous experiences in shopping, but also by their experience with using the Internet, their computer, browser etc. Aspects such as McNeal's Environmental Influences (1973) will also become more complex as the consumer will be affected by information and feedback on online shopping itself as well as product and/or vendor information.

2.3.2.2 Convenience and Decision Support

Some researchers tend to focus almost exclusively on specific parts of the online consumer's behaviour, most notably the decision-making aspects. Another approach to understanding online consumer behaviour is to start with a traditional model of consumer behaviour and examine how e-Commerce can facilitate the cognition/decision/action stages. Keen *et al* (2004) claim that online shopping can accentuate those factors critical for the decision-making process – control, ease of effort, price and positive experience. In developing their framework for human factors in e-Commerce, Miles *et al* (2000) base their work on a generic six-stage model of consumer behaviour:

1. Need Identification
2. Product Brokering
3. Merchant Brokering
4. Negotiation
5. Purchase/Delivery
6. Service/Evaluation

This model resembles Adcock *et al*'s generic consumer model (2001). Gupta *et al* (2004), in developing an economic model to capture aspects of the consumer's decision to shop online versus terrestrially, start from the premise that consumer purchase decisions are generic – problem recognition, information search, evaluation of alternatives, purchase decision, post-purchase support – and conclude from their modelling that while terrestrial consumers tend to engage in "variety-seeking behavior"

for low-ticket items such that high-ticket vendors can lock-in customers more easily, the online consumer is likely to variety-seek for both kinds of item.

However, Grewal *et al* (2004) note that the information available on the Internet such as detailed product specifications meets the consumer's need for information in a way that a conventional store environment cannot, which suggests that e-Commerce may do far more than facilitate a transaction.

Miles *et al* (2000), in developing their framework for understanding human factors in e-Commerce, choose to view the consumer in terms of a "decision-making model" and their framework (Table 2.1) consequently concentrates on the tasks needed to support what is identified as the consumer's interleaved decision strategy during the Need and Product identification stages of consumer behaviour.

Dimension	**Value Ranges**
Front-End	• Site Metaphor – website, search engine • Navigational Structure – hierarchy, network, sequence, word and/or criteria-based search, email
Criteria Management Support	• Product Representation – name, text, image, types of text/image used. • Product Information Provision – product-specific and product independent text, product database.
Marketplace	• Negotiation Method – none, external contact, user-specified • Control of Marketplace – seller, buyer, 3rd party, distributed • Maintenance of Marketplace – manual, database, seller submitted, agent-based • Ratio of Buyers to Sellers – 1 to >1 million
Comparison Support	• Site Scope – within seller, across seller, n/a. • Comparison Tool – none, value bars, tables, graphic plots

Table 2.1 – Human Factors Framework for E-Commerce (Miles *et al*, 2000)

A selection of e-Commerce sites are reviewed against this framework and from this work a list of technologies are suggested for better support for the buyer, such as 3-D and cross-product type search and comparison engines. Although Miles *et al* conclude by stressing that site usability must be buyer focused, it would appear that to them buyer focused simply means support for searching, managing product criteria and product comparison. Indeed, Silverman *et al* (2001) specifically critiques Miles *et al* (2000) for ignoring the stages of negotiation and evaluation in their consumer behaviour model, but by limiting their own analysis of e-Commerce to that of a decision support system they also in effect treat online shopping as a primarily mechanistic function.

Amichai-Hamburger *et al* (2004) theorise that consumers with a high need for cognitive "closure" (i.e. the desire to remove uncertainties and form conclusions quickly) prefer flatter, less interactive websites, while those with a low need for cognitive closure (i.e. the desire to prolong the information gathering and assessment stages) prefer more interactive sites. Interestingly enough, when testing this theory Amichai-Hamburger *et al* discover that under time pressure the results were reversed and suggest that when time is a constraint the consumer with low need for closure may actually be frustrated by sites that offer opportunities for information gathering that they have no time to explore. However, the accompanying suggestion that the consumer with high needs for closure suddenly becomes more open to interaction under time constraints seems open to question.

Another approach to e-Commerce design starts from the viewpoint that the key to online consumer behaviour is convenience. Researchers such as Bellman *et al* (1999) claim that for those consumers who perceive online shopping as primarily a matter of convenience and time, the recommended design considerations are enabling standard and/or repeat purchases (e.g. one-click), easy checkout process and customised information displays.

However, Srinivasan *et al*'s (2002) study on factors affecting consumer loyalty online shows that convenience itself, as demonstrated by the usability of the site, is not a significant factor despite being identified as such by various industry executives and e-Commerce website designers. This would imply that usability may have become a "hygiene factor" – something online consumers now take for granted and therefore only impacts on loyalty by its absence. As Srinivasan *et al* states, "Because of the nature of the medium itself, online consumers have come to expect fast and efficient processing of their transactions" and consumers are unlikely to return if this is not achieved.

2.3.2.3 Market Dynamics

Some sources see the information gathering capability of the online consumer as not only challenging traditional models of behaviour but also market dynamics. Biswas (2004) examines online consumer behaviour from the perspective of traditional EoI (Economics of Information) theory, which states that as consumers are not perfectly informed about all alternatives available in the market, consumer perceptions of price dispersion (variations in pricing for the same products in different markets) or information variation will drive consumers to search behaviour during the decision making process. In addition, the extent to which they are willing to search for information will be dictated by the perceived benefits versus costs of the search and their

previous experience and knowledge. However, for online consumers Biswas claims that factors such as lower search costs and greater availability of information increase the extent of searching done and the amount of information gathered, allowing the online consumer to consider more alternatives that their terrestrial counterpart. Biswas suggests that over time, this could actually reduce price dispersion amongst vendors who traditionally relied on information asymmetries to maintain differential pricing, leading to online consumers becoming less price-conscious in favour of other factors such as personalisation and brand loyalty and consequently more willing to pay a premium for higher levels of service, customised offerings, recognised brands, etc. This phenomenon may explain such events as Amazon's continuing domination of their market, despite the fact that they are not necessarily the cheapest vendor.

2.3.2.4 Products versus Services

Another approach has been to concentrate on the nature of the items being purchased as a key to understanding online consumer behaviour. Liu and Wei (2003) examine the differences in consumer behaviour when purchasing goods versus services and find that these differences do not manifest themselves in the same way for online consumers. In the terrestrial environment, products are generally tangible during shopping, of relatively uniform quality, can be stored and inventoried and product production precedes sale which precedes consumption. Services, on the other hand, are intangible, can vary greatly in quality, cannot be stored and the production and consumption of a service is normally simultaneous and follows the sale. Consequently there is more scope for customer dissatisfaction if there are any problems with place or time or vendor resources. However, for the online consumer, both products and services are effectively intangible, services are often standardised in quality to a degree not found terrestrially as they are not as dependent on time and place, product quality may vary due to shipping and handling processes and while services cannot be stored online the fact that they can be purchased and consumed at any time means that online consumers can derive immediate satisfaction from purchasing services but satisfaction from products is subject to the delays inherent in shipping. In applying this model to consumer intention to adopt e-Commerce, Liu and Wei find that, when contemplating online shopping, consumers are more concerned about risk for products rather than services and more concerned about perceived ease of use for services than products. Based on their differentiation of online product versus service purchase behaviour, Liu and Wei suggest that product-related websites should concentrate on providing more effective product presentation and delivery tracking in order to overcome online consumer concerns about intangibility and risk, while service-related websites should concentrate on standardisation and

simplification of transactions, with features such as enhanced help facilities to overcome online consumer concerns about ease of use.

2.3.2.5 Affects

Childers *et al* (2001) argue that the utilitarian view of online shopping as simply increasing consumer efficiency through information provision, enabling of product comparisons and reduced product search costs is too narrow in scope and therefore the difference in existing and future consumer behaviour in online versus conventional channels must be better understood by sellers. Childers *et al* divide consumers by their shopping motivations – Utilitarian (those who are shopping to achieve a particular goal) versus Hedonic (those who are shopping for entertainment) and speculate that these motivations will change the way factors such as site Navigation, Convenience and Ability to Examine Products affect the online consumer. To test these assumptions, they ask subjects to simulate shopping for a friend at several known e-Commerce sites by searching for a set list of products by brand and price range and gather information on shipping, order tracking and examine products where applicable (e.g. obtain samples of music files). A second study is also done to test responses to online grocery shopping, under the assumption that this, unlike gift shopping, is clearly be a Utilitarian task. The results show that, for shopping online, enjoyment is as important to the subjects as usefulness, convenience or ease of use, regardless of the type of shopping motivation. Even in grocery shopping, where convenience and efficiency are generally considered paramount to the consumer, the results show enjoyment is "a significant predictor of attitudes" for the online shoppers.

The realisation that enjoyment, entertainment, fun or other hedonic motivations is a factor in online consumer behaviour is supported by an increasing number of authorities who prefer to examine the overall online consumer experience. A landmark article published by Shih (1998) states that the number of sensory dimensions and the resolution of the sensory information (breadth and depth, respectively) determine the "vividness" of the information consumers receive and that the degree of vividness is important to the consumer experience. This implies that as the online shopping experience is less vivid for activities such as food shopping, since smell and taste cannot be conveyed online, the overall shopping experience is diminished. However, Shih argues that this attenuation of vividness can be balanced against the interactivity provided by the Internet, which can provide the consumer with a sense of engagement, especially if the speed of feedback is nearly instantaneous. In addition, the ability of consumers to control their experience on the Internet by choosing what sites they want to look at and in which order, also increases their sense of engagement.

Shih defines two basic types of online experiences; Telepresence and Bricolage. Telepresence is described as the extent to which users experience their existence in the online environment (in effect, the degree of virtual reality), dictated by the degree of vividness, interactivity and user-control. Shih proposes that the higher the degree of Telepresence the more positive the affective feeling and therefore the more likely the user will want to repeat the experience. Bricolage was described as the manipulation of objects in one's environment, allowing the user to control the flow of information and the direction of the approach. According to Shih, Internet users practice Bricolage by clicking on links and bookmarks, deciding what web pages to view and in what order. Given the power of Bricolage as a learning tool, Shih proposes that the greater the degree of Bricolage the longer the user will retain information gathered online.

When it comes to translating the concepts of Telepresence and Bricolage to consumer behaviour, Shih postulates that Telepresence correlates to the experiential aspects of consumer behaviour while Bricolage correlates to the cognitive components and therefore an emphasis on Telepresence in e-Commerce site design is best for selling experiential products or services, such as holidays, while Bricolage should be emphasised for information-intensive products and services or where customer retention of product information is a key factor.

McCarthy and Wright (2003) argue that by providing an "enchanting" experience (i.e. an interactive relationship between the person enchanted and the source of the enchantment), online shopping transforms the image of the passive consumer into an entity seeking change, creativity and self-expression.

As part of viewing the consumer experience, Smith and Sivakumar (2004) examine the influence of "flow" on online consumer behaviour, where flow is defined as a psychological state reached during certain activities where high concentration, a sense of time distortion and a feeling of the optimal balance of skills and challenges produces prolonged feelings of pleasure. While flow is primarily associated with various tasks such as sports, games and hobbies (including use of computers), Smith and Sivakumar explore the extent to which the experience of flow is a factor in online shopping, particularly browsing, one-time purchasing and repeat purchase behaviour. The starting issue for Smith and Sivakumar is their assumption that consumers who already experienced flow while using the Internet are also more likely to experience flow during online shopping. This assumption, combined with Smith and Sivakumar's concerns that the experience of flow (such as that derived from immersive enjoyment of browsing) could remove focus from the actual purchase of an item, leads to their questioning

whether providing the experience of flow during online shopping would in fact actually deter or delay purchasing.

Smith and Sivakumar's proposal is that the optimal intensity and duration of flow for an online shopping environment should be determined by a combination of the context of the online shopping behaviour and the consumer's characteristics/motivations, For example, a longer experience of flow could encourage online consumers to engage in browsing behaviour, but the intensity of the flow state would not be particularly relevant and could even be a distraction for those consumers who were committed and/or confident about buying. Service-oriented consumers, on the other hand, possibly needed longer and more intensive flow as information gathering is a far more critical stage of service shopping. Smith and Sivakumar also propose that the optimal flow experience changes as the shopper moves from browsing to purchasing. During purchase, the duration of flow could help to remove inhibitions about the levels of risk during purchase, but could also be potentially overwhelming if the flow is too intense. Additionally, it is theorised that the duration is probably best kept short for motivated consumers so as not to distract from the purchasing task at hand, with the level of flow increased to add levels of pleasure for these consumers. This is in contrast to Service orientated consumers who, Smith and Sivakumar theorise, could potentially be too distracted to complete a transaction if flow is overly intense. For example, providing an engaging experience of a prospective holiday could be helpful during the browsing phase, but distracting (and possibly annoying) while booking.

Parsons (2002) agrees that flow and Telepresence are important to offer diversion and stimulation ("experiential shopping") and examines the personal and social motives inherent in terrestrial shopping with a view to seeing how applicable these are to the online consumer. The results of his studies show that of the personal motives – role playing, diversion, self-gratification, learning about new trends, physical and/or mental activity, sensory stimulation – all but role playing, physical/mental activity and sensory stimulation are also significant motivators for online shopping. For the social motives – experiences outside the home, communications with others, peer group identification, status and authority, pleasure of bargaining – all but pleasure of bargaining were significant to online shoppers.

Chen *et al* (2002) question whether online shopping can really be considered as engaging, pointing out that in-home shopping in general is rated lower in terms of entertainment and social interaction and therefore online consumers are less likely to see shopping as a form of entertainment. However, an alternative interpretation would be that online consumers are used to using the Internet as a means of entertainment and

could consequently gravitate to those e-Commerce sites that provide some form of an enchanting or otherwise entertaining experience. Chen *et al* claim that enhancing the "playfulness" of the website can help to attract the "leisure" consumer who may value social interaction and direct product experience when shopping. In addition, Chen *et al* maintain that virtual tours of the online store, easy navigation and convenient checkout facilities increase perceived ease of use and consequently increase sales and customer loyalty. Liu and Arnett (2000) also promote "playfulness" in e-Commerce design in order to produce hedonic pleasure. They state that a design which motivates consumers to interact and promotes excitement and concentration will help create a positive shopping experience for the consumer, in turn creating repeat business and customer loyalty.

Shang *et al* (2005) conclude from their study that while "...shopping on-line cannot provide the same kind of fun as traditional shopping", intrinsic motivations such as interest-excitement are more of a factor in online consumer behaviour than convenience and ease-of-use and govern not only the intensity of the online shopping but even the decision to shop online or not. Consequently, people who have already had "cognitive absorption experiences" – in other words, fun – on the Internet are more likely to also shop online.

In looking at the importance of enjoyment in interaction design, McCarthy and Wright (2003) point out that, by engaging with the consumer on a personal level using data from previous transactions, the e-Commerce vendor can enchant the consumer, leading to increased customer loyalty and commitment. This is further supported by Nielsen's (2003) contention that features such as Amazon's "Customers-who-bought-this-item-also-bought" links provide a "powerful feeling of discovery" and engagement, increasing time spent on the site.

Grewal *et al* (2004) claim that terrestrial stores usually provide novel experiences by changing atmospherics and/or featured products, while e-Commerce sites can be far more versatile in providing novel experiences through site design and innovations in shopping formats such as auctions, one-click, etc. However, they also contend that for those who enjoy the sensory and social aspects of terrestrial shopping, the online experience is still perceived as "sterile" by comparison.

Szmigin's (2003) and McCarthy and Wright's (2003) contention that the online consumer is an empowered one would seem to fit in with Shih's concept of Bricolage whereby users come away with their own selective understanding of information and can bypass unwanted information as well. However, as Wachbroit (2000) points out, this

personalised information handling can lead to filtering out of information not only deemed irrelevant to the user but also information that may contradict the user's viewpoint, leading to a narrowing of interests. By reducing the exposure of the user to the experience of others with alternative viewpoints, Wachbroit suggests that the user's deliberation is reduced, as deliberation requires acknowledgment of other interests and viewpoints. While Wachbroit's concern is with the potential impact of such narrowing of views on communities, this phenomenon has implications for online consumer behaviour as well. A consumer in a supermarket who must pass through most of the aisles in order to complete their week's shopping will be exposed to various products that they may not have initially been interested in or even knew existed, but by virtue of display or appeal to the senses may decide to purchase. That same consumer online, by controlling what parts of the online supermarket they visit, will reduce if not completely eliminate this exposure, minimising their likelihood of making unplanned purchases but also in the long run possibly limiting rather than expanding their shopping experience by not being exposed to new products or services they may find useful or enjoyable. Consequently, the online consumer may in some circumstances lose power rather than gain it.

2.3.3 Site Design

The quality of site design in e-Commerce is recognised by many researchers as a critical factor in the online consumer experience. Szymanski and Hise (2000) find that "good site design" (fast, uncluttered and easy-to-navigate) is one of the strongest predictors of online consumer satisfaction. Evanschitzky *et al* (2004) confirm this finding in studying German online consumers. Wolfinbarger and Gilly (2003), using both focus groups and online surveys, discover website design factors such as ease of use and the "right level of personalisation" are a leading factor in consumer perception of their shopping experience. However, approaches to defining, let alone achieving, quality e-Commerce site design follow a variety of paths.

Boersma *et al* (2000) suggest that in order to build an e-Commerce site with the optimal mix of branding, trust and "a pleasant user experience" three types of design approaches are needed. Firstly, the "concept designer" who works with marketing specialists and focus groups to design and validate a shopping concept using "mood boards" to define the atmosphere and functions to be features. Next, the "graphic designer" to develop the visuals and test these against target groups. Finally the "interaction designer" who will develop and test prototypes of the interaction with target users.

Liang and Lai (2002), starting from a generic model of consumer behaviour, suggest a number of design features that could be included to facilitate each stage of the online consumer's behaviour. These features are divided into three categories; Motivators (features that simplify and support the consumer's activities), Hygiene (features that alleviate potential concerns with the vendor, product or online shopping) and Media Richness (features that provide immediate feedback). The extent to which these three categories are available determine the overall design quality of an e-Commerce site which in turn influences the likelihood of online consumers purchasing and returning to a site for future purchases. In testing this framework against online bookstores in Taiwan, Liang and Lai discover that overall design quality appears to influence not only the choice of e-Commerce vendor but even the amount spent. In addition, although the subjects ranked Hygiene highest when assessing online shopping in general, Motivators have the greatest impact on preferences for purchasing from specific vendors. This would imply that good design of basic features such as search engines, shopping carts, payment mechanisms, etc. must come first in e-Commerce web design.

Various researchers investigate whether there is a correlation between terrestrial store design and e-Commerce site design. Lohse and Spiller (1999) map various features of terrestrial stores to online stores as shown in Table 2.2.

Terrestrial Store	**Online Store**
Salesclerk service	Product descriptions, information pages, gift services, search function, phone/email options
Promotions	Special offers, online games & contests, links to other sites of interest, appetizer information
Window Displays	Homepage
Atmosphere	Interface consistency, organisation, quality of interface & graphics
Aisle products	Featured products on hierarchical levels of site
Store layout	Screen depth, browse & search functions, indices, image maps
Number of floors	Number of hierarchical levels in site
Number of entrances, outlets/branches	Number of links to site
Checkout cashier	Online shopping basket, order form
Looking at & touching merchandise	Image quality & description, audio & visual applications
Number of people in store	Number of unique visits to site
Sales per period	Sales per period

Table 2.2 – Terrestrial and online store feature equivalents (Lohse & Spiller, 1999)

Their conclusions, based on tracking the number of visitors and monthly sales for 28 e-Commerce sites, show that the following design features appear to have a positive impact on traffic and/or sales:

- FAQ
- Range of products
- Feedback
- Improvements to product lists
- More links from other sites
- Homepage promotions

The following features appear to have no discernable impact on traffic or sales:

- Number of search/browsing modes available
- Information about the company, additional services
- Number of featured products on hierarchical level
- Number of levels between homepage and end product page
- Consistency of menu bars

Unfortunately, this research does not look at basic issues of design (e.g. text, fonts & colours, etc.), an omission acknowledged by the researchers. More importantly, this work was done in 1996, when it could be argued that the average e-Commerce site was far less sophisticated and the average online consumer was far more tolerant of design deficiencies.

Vrechopoulos *et al* (2004) attempt to translate the basic types of terrestrial store layout described in section 2.1.1. into online equivalents to see if online consumers react to the standard layouts in the same manner. Their layouts for a online grocery site map as follows:

- Grid — Hierarchical structure of products (product category, subcategory, end product)
- Freeform — Products could be found either by search engine or via direct links from every page.
- Racetrack — Two "corridors" per web page, users needed to select a corridor to continue navigation.

What Vrechopoulos *et al* discover is that, unlike terrestrial consumers, the online consumers find the Grid the easiest to use and the Freeform the best for planned/routine purchases. The Freeform is also seen as the most entertaining, as opposed to the terrestrial preference for Racetrack. This leads to the conclusion that conventional store layout theory is not readily applicable to the online context. However, this mapping is only tested for grocery shopping (where Racetrack layouts are uncommon) and the mapping of the terrestrial layouts to online equivalents is open to question. For example, Vrechopoulos *et al*'s online version of Racetrack seems to be much more restrictive than the terrestrial equivalent.

Childers *et al* (2001) argue that as an atmosphere is created for the consumer in a physical retail environment via the elements of store architecture, facilities and layout, the term "webmospherics" can be used to represent the online counterparts to these elements. The components that comprise the "webmosphere" include structural design attributes (frames, links, text, windows), media dimensions (graphics, audio, video) and

site layout dimensions (organisation and grouping of products). Childers *et al* suggest that considerable study is needed to examine how these elements specifically affect consumer behaviour.

An extensive attempt to correlate terrestrial to online design based on consumer behaviour models derived from existing frameworks is done by Eroglu *et al* (2001), who develop a conceptual model of atmospheric cues for online shopping to see if the principle of retail store atmospherics apply to the online environment. Their model (Figure 2.4) is based on Stimulus-Organism-Response (S-O-R) frameworks developed for the retail environment, where Stimulus is the influence that arouses the individual, Organism the states and processes that intervene in the relationship between the Stimulus and the individual's responses and Response is the final outcome of approach or avoidance. Eroglu *et al*'s use of this framework is based on the assumption that as retail environmental stimuli affects the consumer's emotional states, which in turn generates approach-avoidance behaviour towards the terrestrial site, the atmospheric elements of an e-Commerce site should also affect the consumer's response to the online site.

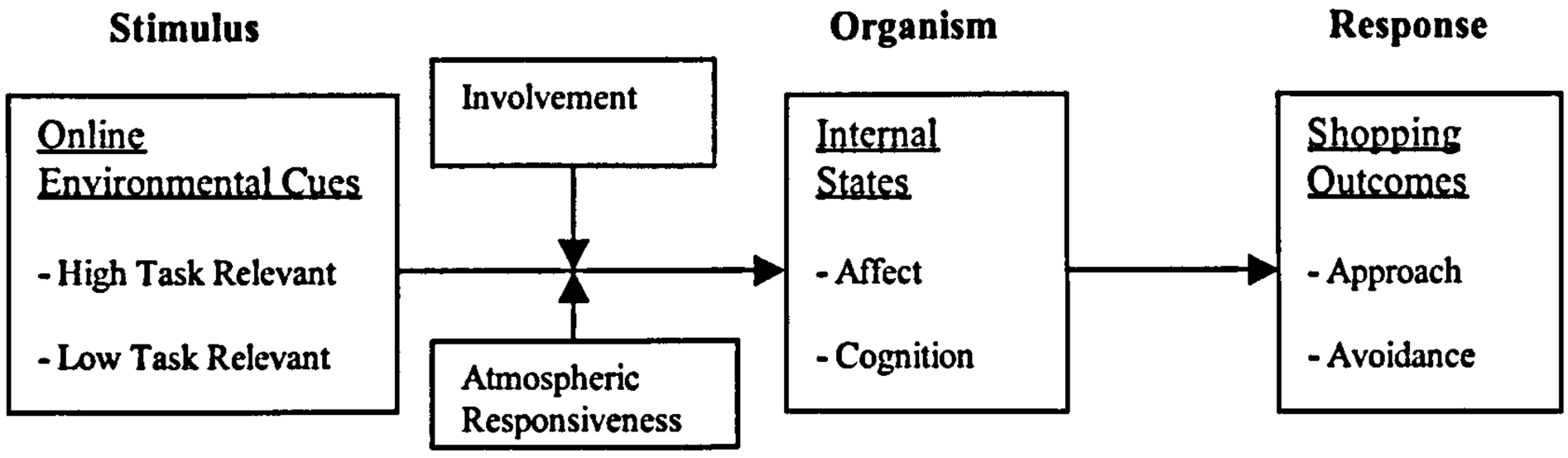

Figure 2.4 – S-O-R Model of Consumer Response to Online Shopping (Eroglu *et al*, 2001)

In Eroglu *et al*'s model (2001), the variety of environment cues normally associated with a terrestrial store are replaced primarily by the degrees of richness of the media utilised by the site and the types of cues generated by the media are either highly relevant to the consumer's goal or task, such as product information, or of low relevance, such as use of colours and fonts. The affective (pleasure, arousal and dominance/control) and cognitive states are moderated by the Involvement (degree of personal relevance) and Atmospheric Responsiveness (tendency to base decisions on the perceived environment). This means, for example, that a high-involvement online shopper will have a positive experience if exposed to predominantly High Task Relevant information, but a negative experience if exposed to predominantly Low Task Relevant information. Eroglu *et al* suggest various avenues of research, starting with identification and categorisation of the various types of online atmospheric cues and

then moving on to such areas as the effect of these cues on Shih's model of Telepresence and Bricolage (1998) and other aspects of online shopping behaviour.

2.4 Issues With Existing Research

The question arises as to how well the research described in Section 2.3 presents an understanding of the online consumer as a complex and diverse individual along with an understanding of the online consumer as a user of interactive technology. In examining the above-mentioned research, it is possible to identify seven common themes in approaching online consumer behaviour:

- Online shopping changes the nature of customer loyalty and the importance of trust.
- Online shopping is a subset of overall Internet adoption.
- Online shopping facilitates traditional consumer behaviour and e-Commerce should be viewed as primarily a Decision Support System.
- Online shopping changes the nature of the market, which in turn affects online consumer behaviour.
- Online consumer behaviour is affected by whether products or services are being purchased.
- Online consumers do/don't seek entertainment, empowerment or are capable of being persuaded while shopping online.
- Online consumer behaviour is/isn't affected by principles of retail site design or principles of Usability.

Independent of the degree of the validity of any one particular theme, consumer behaviour is complex and continually evolving as consumers and their environment changes. Consequently, while much of the research described in Section 2.3 examines specific factors that may or may not differentiate the online consumer, understanding the role that these factors play can only be done in the context of an overall understanding of the online consumer's behaviour. By taking existing consumer behaviour models for granted, or assuming that online consumers are exactly like their terrestrial counterparts except, for example, during specific decision-making processes, existing research has missed the variety of ways in which the online consumer's behaviour can be affected by factors that occur outside of the actual e-Commerce site. In reviewing previous studies on online shopping, Wolfinbarger and Gilly (2003) observe that most research to date concentrates on trying to identify specific attributes that may or may not have been

important to online consumers rather than looking at the whole experience. As Miles *et al* points out (2000), "Electronic commerce should not be assumed to be information retrieval, it is a separate task-domain." It has also been recognised by some that, if online shopping is an experience rather than a simple task, disciplines such as traditional HCI design methodologies may be inadequate for e-Commerce design. McCarthy and Wright (2004) argue that traditional interaction-based design approaches may be insufficient as "felt experience" (emotions and sensual quality) are an essential part of consumer behaviour and the emotional-volitional aspects of consumer behaviour have been underdeveloped in e-Commerce site design.

In addition, there are a number of methodological issues with the previous research that are less obvious from the review in Section 2.3. First and foremost one must consider the rapid pace of technological change, which according to researchers such as Grewal *et al* (2004) and Limayem *et al* (2000) is causing online shopping to move very quickly through adoption cycles of introduction to growth and eventual maturity. This would suggest that research based on consumer attitudes of 2000 may not accurately reflect the behaviour of online consumers in 2007. A good example of this problem is illustrated by research into the issues of trust in e-Commerce, where much of the background data are based on consumer attitude surveys done in 2000 or earlier (some as far back as 1997) and may not really take into account how those attitudes and subsequent behaviour may have changed since then. For instance, online auctions via eBay, before 2000 considered a somewhat fringe activity, have according to the BBC (2004a) become the most popular form of consumer-based e-Commerce and security issues virtually unheard-of in 2000 such as "phishing" are now the subject of mainstream news stories (BBC, 2004b). It is not unreasonable to conclude that the consumer's expectations of trust in e-Commerce have altered in the past few years.

The second data collection problem is with the use of students as subjects in many (if not most) academic experiments and studies. As Wolfinbarger and Gilly (2003) point out, by using such a narrow group of subjects these studies may demonstrate not overall online consumer attitudes or behaviour but rather the attitudes and behaviour of a specific demographic group of the same age, background and value set. Peterson and Merino (2003) also express concerns about generalising the results of student-based consumer studies to consumers in general. As one example of why issues such as demographics must be taken into consideration in examining online consumers just as it is in the terrestrial world, Wood's (2002) study of attitudes towards e-commerce discovers that different age groups have different expectations of the future of online shopping, with Baby boomers (those born between 1946-1965) seeing online shopping

as a matter of convenience, while "boomlets" (those born between 1977-1997) seeing product customisation as the key benefit.

The third and perhaps most important problem with much of the research to date is, as Limayem *et al* (2000) argue, the tendency to measure attitudes and intentions but not actual purchasing behaviour. Research subjects are surveyed for attitudes, intentions or past experiences of online shopping, or asked to make hypothetical purchases in artificial online shops, or asked to browse actual online shops but stop short of completing a purchase. Blom (2004) points out that studying induced behaviours in artificial environments reduces the ecological validity of lab-based studies of personalised eCommerce applications.

Consequently there is little data available on how online consumers behave when they are actually searching, selecting and paying for items in the "real" world. Such real-world data are critical to any understanding of consumer behaviour as reliance on hypothetical events or user description of behaviour can produce incomplete or even misleading results. Miller *et al* (1998) notice that in many instances participants in marketing focus groups give opinions and answers that are not supported by actual observation of their shopping habits. The importance of real-world data in understanding consumer behaviour is particularly demonstrated by the work of Underhill (2000) who has used ethnographic and observational research to develop new understandings of terrestrial consumer reactions to such areas as store design and layouts, clarifying and sometimes even contradicting information from quantitative research .

2.5 So What is the Problem of Online Consumer Behaviour?

This chapter has shown how previous approaches to understanding online consumer behaviour, while they may provide some insight into specific aspects of behaviour, are often based on one-dimensional frameworks for understanding online consumer behaviour that do not adequately convey the complexity and diversity of consumer behaviour. On the other hand, approaches to understanding general consumer behaviour although cognizant of behaviour complexity and diversity, are grounded in an understanding of the consumer as a primarily reactive entity, operating in a setting controlled primarily by the retailer. The problem of online consumer behaviour is how to explore and develop an understanding of online consumer behaviour that is based on a more comprehensive and dynamic structure than existing frameworks for describing terrestrial consumers or interactive technology users.

Maani and Cavana (2000) define a "hard model" as "a representation of the real world" while a "soft model" is "a way of generating debate and insight about the real world". Norman (1988) describes his "Seven stages of action" construct as an "approximate model" intended to be used as a structure for examining behaviours, rather than a finite and sequential description of behaviour. Carroll (2000) in particular points out that such theories of human activity "can facilitate systematic questioning by providing a general list of questions" for examining behaviours. Norman's "approximate model" has been used by both Norman and others (Carroll; Dix *et al*, 2004) to structure investigations into user behaviour, with Faulkner (2000) suggesting that other theoretical guidelines or principles such as Shneiderman's "Golden Rules" (1998) can also be used in this manner. This points to the opportunity for a type of approximate model that can be used as a framework for understanding and exploring online consumer behaviour. Such a framework should recognise the subject as a consumer and a user of interactive technology who actively shapes their interaction. This framework, by identifying the common interdependent themes of online consumer behaviour, should provide a structure for exploring this behaviour through qualitative and quantitative studies of activity within a shopping domain. In addition, such a framework should contribute to interactive retail disciplines such as e-Commerce interaction design by facilitating the practitioner's comprehension of the complexity and diversity of online consumer behaviour and an appreciation of how behaviour will change as interaction technologies evolve.

3 Methodology for Constructing the e-Commerce Framework

> "Consumer experiences are too complex to be boxed into a single experimental moment, and the joys of doing research must be found not in the pursuit of a holy grail of singular knowledge but in capturing many exploratory moments."
>
> (Firat & Venkatesh, 1995)

Having established the need for a framework for developing a deeper understanding of the online consumer, we now turn our attention to the construction of this structure. This chapter will describe the choice of methodology used to construct and evaluate the e-Commerce framework (e-CF).

3.1 Choosing the Methodology

In defining a methodology for developing the e-CF, the first requirement was to choose a Constructivist methodology in keeping with the perspective of the postmodern online consumer described in Section 1.1. Secondly, the methodology would need to be flexible enough to incorporate existing research from both consumer behaviour and HCI. Additionally, the chosen methodology would need to minimise, where possible, the concerns about ecological validity raised by Blom (2004), Limayem *et al* (2000), Miller *et al* (1998) and Underhill (2000) through the gathering of data from actual consumer activities. Finally, the chosen methodology would need to be able to construct a framework that would be of use in exploring online consumer behaviour and thereby enhancing understanding of the online consumer's world.

Robson (2002) notes that in qualitative or "flexible" research design the structure of the study emerges from the research, as the collection and analysis of the data can change the context and even the original purpose of the study. He describes three strategies for flexible design; Case study, Ethnographic study and Grounded Theory.

Case studies, in which a detailed picture is developed of a single case or phenomenon or a small number of related cases, is described by Yin (1994) as "...the preferred strategy when 'how' or why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some

real-life context." Both Yin and Robson (2002) state that a number of data collection techniques, both qualitative and quantitative, can be used to develop the study and this reliance on multiple sources means that prior development of a theory or framework is needed to guide data collection and analysis.

Ethnographic study, the observation and interpretation of groups, organisations or communities in context (Robson, 2002), is often used in HCI to develop understanding of the practices and technologies of a user or group of users (Blomberg *et al*, 1993). This type of study acknowledges that "manifest" behaviour can differ from claimed behaviours (*ibid*) and relies heavily on interviews with participants combined with observations in natural settings, with researchers often needing to immerse themselves in that setting (Robson). However, Charmaz (2006) warns that this immersion, combined with the emphasis on studying the setting, can lead to giving priority to the setting over the phenomena or process being studied, leaving the researcher with a lot of unconnected and uncategorised data.

3.1.1 Grounded Theory

Robson (2002), Goulding (2002) and Charmaz (2006) present Grounded Theory, a research methodology based on developing theory grounded in systematically gathered and analysed data (Strauss & Corbin, 1998), as a qualitative methodology suitable for providing robust perspectives and understanding of behaviour. Charmaz, in discussing the role of Grounded Theory, notes that its development was based on viewing "... human beings as active agents in their lives and in their worlds rather than as passive recipients of larger social forces", a perspective well in keeping with the view of the postmodern consumer as instigator and the HCI view of the active user.

Grounded Theory has been successfully used in both consumer and HCI research. For example, Goulding (2002) presents a case study in the use of Grounded Theory to explore the motivations and nature of experiences consumers gained from visiting museums and heritage sites. She notes that while there was a considerable body of research, including ethnographic studies, into specific experiences at these types of venues, there was both a lack of data on consumer motivations for visiting museums or heritage sites and a lack of a coherent theory that could provide the framework to tie motivations with behaviours. Goulding demonstrates how, through Grounded Theory, she uses qualitative data from interviews and observations across several different types of domains/venues, along with existing research in related disciplines to uncover patterns in behaviour which in turn lead to a framework for exploring both motivations and experiences at Heritage sites.

As another example, Swallow *et al* (2005) present a case study in the use of Grounded Theory within the field of HCI utilising a number of qualitative data collection techniques, including interviews and diaries, in order to develop themes for evaluating user experience of Smartphones and relating these to design issues.

In assessing the use of Grounded Theory the researcher must carefully consider how they will move from data to the development of a theory. Kelle (2005) discusses the apparent contradiction in early approaches to Grounded Theory between allowing theoretical categories to freely emerge from data without preconceptions and the use of existing knowledge and theories in developing these theoretical categories. In addition, Grounded Theory practitioners were encouraged to develop an ability to reflect on data in the context of theory (Theoretical Sensitivity), but with little guidance on how this was to be achieved. The founders of Grounded Theory, Barney Glaser and Anslem Strauss, eventually proposed different approaches to resolving these contradictions. While both start with the first step of Open Coding, where initial concepts are identified in the data, Glaser then proposes various coding families based on sociological or philosophical concepts to achieve a set of ad hoc Theoretical Codes, while Strauss proposes a systematic development of categories through identification of causal, contextual, consequential or other relationships (Axial Coding). Both Kelle and Charmaz (2006) suggest that, particularly for the novice researcher, the Axial Coding paradigm can provide a useful structure for theory building

Kelle argues that regardless of the approach used, the process of developing theory should be guided by an understanding of induction versus "hypothetical reasoning" or abduction, in which data is used to develop a hypothesis to explain the data. Charmaz (2006) describes the abductive process in Grounded Theory as developing categories from the data and then examining these categories in the light of the data with the most plausible explanations followed up. Charmaz also stresses that constructing theory is not a "mechanical process" but rather "Theorizing means stopping, pondering, and rethinking anew... we look at studied life from multiple vantage points, make comparisons, follow leads, and build on ideas."

In reviewing the above approaches to research and developing theories, it became clear that in order to build the e-CF, an approach was needed that could be used to build a robust, comprehensive framework based on collection and integration of qualitative data with existing research. Ethnographic studies on their own, while providing rich pictures of context, could not provide the structure for understanding online consumer behaviour, while case study methodology on its own was better suited as a means for

developing detailed studies of behaviour within a domain once a framework was established.

These realisations point to the use of Grounded Theory, as the preferred methodology for construction of the e-CF. The decision was therefore taken to collect qualitative data on online consumer behaviour through observation and interviews with participants engaged in online shopping activities and then to use this data along with existing research to develop categories of online consumer behaviour through Grounded Theory's principles of open and axial coding.

3.2 Choosing the Sample Set

Having decided on Grounded Theory as the methodology for constructing the e-CF and on interviews/observations of online shopping behaviour as the primary source of qualitative data, the next challenge was to determine an appropriate sample set for the qualitative studies.

Robson (2002) points out that while quantitative studies have various rules or guidelines for determining optimal representative sample sizes, qualitative studies cannot be as easily specified and are often constrained by practical requirements of time, resource or funding. Robson proposes the notion of "saturation", where data is gathered until the data no longer adds new concepts or themes to what has already been derived and suggests that typically 20-30 interviews are needed to achieve saturation.

In looking at issues of sampling in Grounded Theory, Strauss and Corbin (1998) discuss the concept of Theoretical Sampling as "Data gathering driven by concepts derived from the evolving theory...whose purpose is to go to places, people or events that will maximize opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions". Strauss and Corbin describe various approaches to sampling within Grounded Theory, including Open Sampling which is driven by the need for situations that will provide "the greatest opportunity for discovery", Relational and Variational Sampling which is driven by the need for situations that demonstrate the range of a category or relationships categories and Discriminate Sampling which is driven by situations that provide opportunities for comparative analysis. Regardless of the types of sampling methods used, Strauss and Corbin state that the general rule is to gather data until saturation – the data no longer adds new categories and each category is well-developed along with the relationships between the categories. This concept of saturation is also described by Goulding (2002) and Charmaz (2006), with Charmaz stressing the dangers of grounded theorists thinking

that they've achieved saturation too soon and closing off avenues of inquiry. Charmaz's recommendation is, "Be open to what is happening in the field and be willing to grapple with it. When you get stuck, go back and recode earlier data and see if you define new leads. Use grounded theory guidelines to give *you* a handle on the material, not a machine that does the work for you."

Given these concerns and the constraints implicit in a PhD research project (limited funding, reliance on one researcher, limited time scales), the decision was therefore taken to start the research by gathering qualitative data on as many participants in one particular shopping domain as could reasonably be recruited and processed in a three month time frame and to code the results of that research to develop an initial set of categories which were then carried over into the coding of data from another shopping domain both to further develop the initial categories and also to check for the presence of new categories. This cycle would be repeated for at least one more domain, using at least 20 participants in total, until no new categories were developed, thereby providing the degree of saturation as recommended by Strauss and Corbin (1998).

3.3 Choosing the Domains

In deciding which shopping domains to use for this research, consideration had to be given to selecting a set of domains that would readily yield a pool of UK-based participants representing a variety of demographic and experience levels for Open and Relational Sampling. In addition, each domain needed to represent not simply a different type of product purchase, but also a discrete type of purchasing behaviour to ensure category development was robust and comparisons could be drawn between category manifestations in each domain to ensure that the resultant framework was comprehensive.

The first domain chosen for study was *online grocery shopping*. Home delivery grocery services are certainly nothing new, nor is the use of innovations in technology to facilitate this service – in the early part of the 20th century, the introduction of the telephone allowed customers to place orders from their homes (Bowlby, 2000). However, as supermarkets became more popular the home delivery service withered and by the 1980s, home delivery of groceries was limited to high-end or speciality grocers (Seth & Randall, 2001). Then, in the 1990s, several business were started based on the premise that modern time-starved shoppers would be interested in having groceries delivered to their home. At first, these businesses were based on phone and/or fax ordering but eventually companies such as Peapod were experimenting with various online services (Keh & Shieh, 2001). By the late 1990s, several traditional supermarket

chains had launched online services of their own, with varying degrees of success. Perhaps online grocery shopping's biggest success has been in the UK which by 2003 accounted for 50% of all European online grocery sales (Wingfield & Anthes, 2003) and has been dominated by the major terrestrial chains such as Tesco with online sales in the first half of 2004 of £307 million (IMRG, 2005). The popularity of online grocery shopping in the UK made it a domain particularly well-suited for study by providing a potentially more demographically varied pool of participants than has been the case for many e-commerce studies (Wolfinbarger & Gilly, 2003). In addition, the cyclic and often predictable nature of grocery shopping enabled scheduling of interviews and observation of shopping behaviour in keeping with the normal practices and habits of the participants. Finally, choice of this domain also enabled relatively straightforward comparisons between online practices and terrestrial grocery shopping, as participants could speak at length about their terrestrial experiences. Study of this domain also enabled some observation of both online and terrestrial behaviour for the same participants.

The second domain chosen for study was *online Christmas shopping*. Like home grocery shopping, the facility to purchase gifts from the comfort of one's home is not a new phenomenon. Mail order catalogue shopping, originally introduced in the 19th century in the UK through companies such as Kays of Worcester and Fattorini and Sons (Coopey *et al*, 1999), has in recent years accounted for around 5% of retail spend in the UK (Pesola, 2004; Cox & Brittain, 2004). With the introduction of Internet-based retail in the 1990s, it is not surprising that a number of online consumers would use shopping sites to research and purchase not just items for their own use, but also gifts for other people and vendors such as Amazon have over the years introduced features to facilitate gift giving such as gift certificates, gift-wrap services and wish-lists. At the end of 2005 it was estimated that around 50% of UK consumers were planning to use the Internet for some part of their holiday shopping activities and that 9-15% of UK holiday sales would be done online (BBC, 2006b). Study of the holiday shopping domain provided an interesting and useful contrast to the grocery shopping domain. Holiday shopping is cyclic and facilitates timely scheduling of interviews and observations. However the motivations and pressures on the consumer are markedly different, with holiday shoppers having to purchase items they are far less familiar with than household groceries, from potentially a variety of retailers rather than a single online supermarket.

The third domain chosen for study was *online leisure travel shopping*. Until the advent of e-commerce those consumers wishing to purchase travel services were faced with the choice of using terrestrial outlets such as travel agents or airline offices, or

making purchases via the telephone. In 1994 the travel industry introduced a simple form of online booking via proprietary dial up networks and a text based interface, with Internet access introduced the following year (Kalakota & Whinston, 1997). The early success of this offering led industry analysts to predict that these customer-empowering technologies would have a profound impact on the travel industry and how consumers would make travel purchases (Bloch & Segev, 1997; Standing & Vasudavan, 1999). By 2006, online leisure travel purchases accounted for 24.5% of all online shopping spend in the UK (Palmer & Rigby, 2007). The popularity of this shopping domain made it a natural candidate for study, as it would provide a rich pool of participants as well as information on the purchase of intangibles and service related items, in contrast to the grocery or Christmas domains.

3.4 Choosing the Participants

To address the concerns about demographic biases in previous studies of online consumer behaviour (Wolfinbarger & Gilly, 2003; Peterson & Merino, 2003), the decision was taken to recruit from as wide a demographic base as possible rather than relying on university students as the primary source of participants. To this end a concerted effort was made to recruit from as varied an age, household size and occupational profile as possible. However, given the geographic constraints of this research, all participants recruited for this research were residents of the UK although not necessarily UK nationals. For the first phase of the research, online grocery shopping, eight sets of participants were recruited between January and May of 2005, including six individuals, one married couple and one pair of roommates. The profile of these participants is shown in Table 3.1.

ID	Age	Gender	Number in Household
GP1	19	M x 2	2
GP2	25	M + F	2
GP3	65	F	2
GP4	37	F	1
GP5	24	F	2
GP6	39	F	6
GP7	45	F	2
GP8	38	F	3

Table 3.1 – Online Grocery Shopping Participants

For the second phase of the research, Online Christmas shopping study, nine individual participants were recruited. The profile of these participants is shown in Table 3.2.

ID	Age	Gender	Number in Household
XP1	24	M	1
XP2	27	F	2
XP3	34	F	4
XP4	36	M	2
XP5	46	F	1
XP6	45	F	3
XP7	24	M	2
XP8	23	M	3
XP9	21	F	1

Table 3.2 – Online Christmas Shopping Participants

For the third phase of the study, online Travel shopping, five individual participants were recruited. The profile of these participants is shown in Table 3.3.

ID	Age	Gender	Number in Household
TP1	50	F	2
TP2	31	M	2
TP3	40	M	3
TP4	37	F	2
TP5	54	F	2

Table 3.3 – Online Travel Shopping Participants

Of the participants, all were UK nationals except GP2 (Finland), GP7 and TP2 (US), XP7 (Germany) and TP4 (New Zealand).

3.5 Evaluating the e-CF

Unlike the Positivist approach, where continued experimentation and quantitative analysis are used to prove/disprove a hypothesis, Constructivist research by definition is not quantitatively measured against an independent reality to determine how well it describes or predicts a particular process or phenomenon. So the question arises, how can one evaluate the e-CF? As one would expect from an Constructivist methodology, there are a variety of ways proposed by researchers to address evaluation.

In examining in particular the criteria of Charmaz (2006) and Goulding (2002), it becomes clear that there is considerable overlap between their criteria for evaluation of

Grounded Theory studies and the criteria for the "success" of the e-CF.

- Does the framework recognise the online consumer as a consumer and a user of interactive technology? (Charmaz: Credibility, Originality. Goulding: Perspective, Explanation)
- Does the framework facilitate comprehension of the complexity and diversity of online consumer behaviour? (Charmaz: Resonance, Originality. Goulding: Explanation)
- Does the framework identify the common interdependent themes of online consumer behaviour? (Charmaz: Resonance. Goulding: Perspective, Explanation)
- Does the framework provide a structure for further qualitative and quantitative study? (Charmaz: Usefulness. Goulding: Applicability, Guide to Research)
- Does the framework provide a structure for comparing behaviours between domains? (Charmaz: Resonance, Usefulness. Goulding: Explanation, Perspective)
- Does the framework contribute to Interaction Design methodologies? (Charmaz: Usefulness. Goulding: Applicability)

To satisfy these various requirements for evaluating the e-CF, three basic approaches have been used – Audit Trail, Guidelines for Use and Case Study.

Audit Trail: By demonstrating in Chapters 3 and 4 the approach taken to build the e-CF, including data collection and analysis, an audit trail of the research is provided. This covers the concerns about validity and reliability suggested by Robson (2002), the criteria for Credibility suggested by Charmaz (2006) and provides the categories for verification in future research suggested by Goulding (2002). The description of the various categories and their grounding in both previous research and the data collected from this study also demonstrates that the e-CF recognises the online consumer as both a consumer and user of interactive technology, the first success criteria for the e-CF.

Guidelines for Use: Chapter 5 of this thesis will provide guidelines for exploration of online consumer behaviour using the e-CF, while Chapter 9 will discuss the relevance of the e-CF to developing approaches to interaction design strategies and the design tasks of persona development. This will demonstrate the concept of Usefulness described by Charmaz (2006) as well as the usefulness, applicability and provision of a style for research recommended by Goulding (2002). Chapters 5 and 9 will demonstrate

that the e-CF provides a structure for further qualitative and quantitative study and contributes to Interaction Design methodologies, the fourth and sixth success criteria for the e-CF.

Case Studies: Using the guidelines for exploration described in Chapter 5, Chapters 6-8 of this thesis will present three case studies in e-CF based exploration of online consumer behaviour. These case studies will demonstrate Charmaz's (2006) criteria of Originality, Resonance and Usefulness by showing how the e-CF brings new insights to behaviours in these domains as well as providing bases for comparing behaviour between domains. The explanations of behaviour in these case studies will also satisfy Goulding's (2002) criteria for theory that provides prediction and explanation of behaviour. These case studies will demonstrate the use of the e-CF in understanding behaviour both within a domain and across domains, fulfilling the second, third and fifth success criteria for the e-CF.

Table 3.4 summarises the approaches for evaluating the e-CF against the success criteria.

	Audit Trail	**Guidelines**	**Case Studies**
Does the framework recognise the online consumer as a consumer and a user of interactive technology?	x		
Does the framework facilitate comprehension of the complexity and diversity of online consumer behaviour?			x
Does the framework identify the common interdependent themes of online consumer behaviour?	x		x
Does the framework provide a structure for further qualitative and quantitative study?		x	x
Does the framework provide a structure for comparing behaviours between domains?			x
Does the framework contribute to Interaction Design methodologies?		x	

Table 3.4 – Approaches for Evaluation of the e-CF

Chapter 10 of this thesis will review the evaluation criteria and describe the results of the evaluations.

3.6 Summary

This chapter described the decision process for the choice of methodology used to build the e-CF, based on the previous decision that an Constructivist approach based on data gathered from demographically diverse participants engaged in actual online shopping activity would best fit in with the dynamics of the postmodern online consumer and minimise previous concerns about demographic bias and ecological validity. A review of Constructivist research methodologies led to the conclusion that Grounded Theory was the preferred methodology for developing the e-CF given its suitability for building theories of human behaviour by combining ethnographic data and existing research.

This chapter also described the accumulation of the data for the study, including the choice of three shopping domains (Grocery, Christmas, Leisure Travel) and participants. Evaluation methods for qualitative research were reviewed against the criteria for the framework described in Chapter 2 and an approach was described for evaluating the e-CF for validity and usefulness. The next chapter will depict how Grounded Theory methodology was used to construct the e-CF.

4 The e-Consumer Framework

> "We aim to make an interpretative rendering that begins with coding and illuminates studied life."
>
> (Charmaz, 2006)

Having established the need for a framework for developing understanding of the online consumer, we now turn our attention to the construction of this structure. This chapter describes how the framework was constructed using Grounded Theory and how it will be evaluated.

4.1 The Grounded Theory Process

Robson (2002) describes the process of carrying out a Grounded Theory study as an iterative process of data collection and data analysis until saturation is achieved or, as Goulding describes it (2002), "until no new evidence emerges which can inform or underpin the development of a theoretical point". A basic flowchart for this process is shown in Figure 4.1.

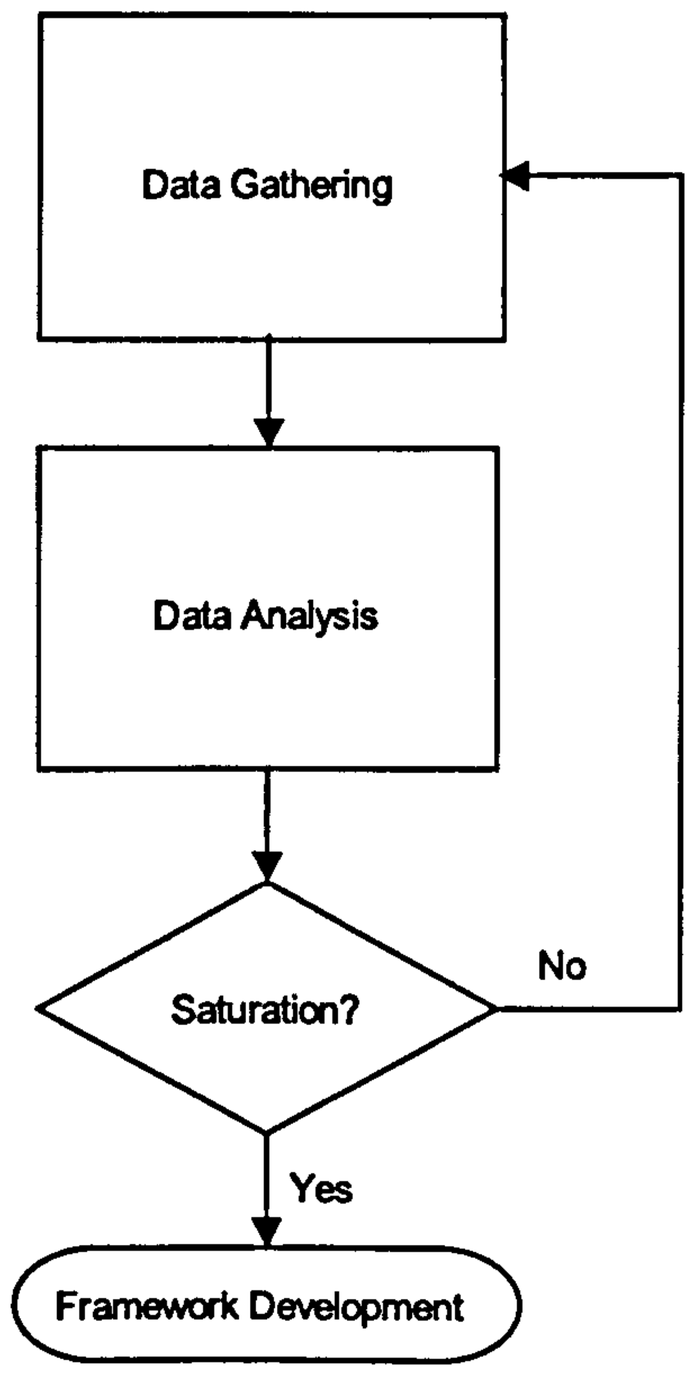

Figure 4.1 – Grounded Theory Process

The basic parts of the data analysis component of Grounded Theory are Open coding, where data is initially classified into basic concepts or phenomena and Axial coding, where classification of the Open Codes into higher-level categories linked by aspects such as context, strategies or consequences is performed. Once saturation is achieved, the resultant categories are then abstracted and contextualised against the literature to produce the theory or framework.

Using the above principles of Grounded Theory, the process used to construct the e-CF was as follows:

1. Gather data on first domain – online grocery shopping
2. Perform coding
3. Gather data on next domain – online Christmas shopping
4. Perform coding
5. Gather data on next domain – online leisure travel shopping
6. Perform coding
7. Check for saturation
8. Develop framework

4.2 Online Grocery Shopping

4.2.1 Data Gathering

In the first phase of the study, unstructured interviews were held with the eight sets of online grocery shopping participants about their attitudes and behaviours in both terrestrial and online shopping and use of the Internet. Seven sets of these participants were subsequently observed conducting one of their regular online grocery shopping sessions and two of these sets were also observed visiting a terrestrial supermarket. All sessions were held at the participants' preference of home or work locations and audio recordings were made of all sessions.

4.2.2 Open Coding

Strauss and Corbin (1998) define Open Coding as "The analytical process through which concepts are identified and their properties and dimensions are discovered in data." In the case of this research, the recordings of each session were reviewed and codes were initially assigned based on identifying concepts from analysis of participant activities and/or comments. For example, participant GP6 stated "I know nothing about computers" and this statement was assigned the code "Levels of confidence in use of

computers and/or the Internet". When participant GP6 used the Search function to locate an item, this action was assigned the code "Searching within a site". Using the NVivo software package, this open coding was done against the data from the sessions to produce an initial set of codes or "nodes" (Gibbs, 2002). Samples of some Open Coding are shown in Appendix F and the full set of resultant codes is shown in Appendix A.

4.2.3 Axial Coding

Strauss and Corbin (1998) define Axial Coding as the systematic development of categories, in effect reassembling the data "fractured" by Open Coding. Goulding (2002) describes Axial Coding as "...moving to a higher level of abstraction and is achieved by specifying relationships and delineating a core category or construct around which the other concepts revolve". For example, open codes relating to degrees of experience, confidence and self-sufficiency in use of computers or the Internet would be identified as relating to a common theme of "Technical Expertise" and coded accordingly.

In this phase of the study, 24 such emergent categories were developed by continuous examination of the relationships between the 56 Open Codes described in Appendix A and grouping of these Open Codes around common themes or activities. The results of this categorisation are detailed in Table 4.1.

Axial Codes	Open Codes
Technical Expertise	Degree of experience using computers
	Degree of experience using the Internet
	Levels of confidence in use of computers and/or Internet
	Levels of self-sufficiency in using computers or the Internet
Product Expertise	Previous levels of product service knowledge
	Willingness to allow the vendor to control product selection
	Willingness to purchase unfamiliar products/services online

Axial Codes	Open Codes
Online Shopping Expertise	Degree of experience in online shopping within the domain or other domains
	Levels of confidence in ability to successfully find and purchase products or services online
	Types of products/services/domains used in past
Trust	Attitudes towards risks of online shopping
	Determining vendor reliability
	Storing of login/financial details online
	Confidence in vendor performance
Loyalty	Attitudes towards using familiar vendors versus new ones.
	Expressions of vendor/brand loyalty
Openness to Persuasion	Attitudes to banners, pop-ups, vendor or customer recommendations
	Responses to cues during shopping sessions
Value for Money	Concerns about obtaining value for money
	Perceptions of cost-effectiveness of online shopping
	Use of online shopping to lower costs
Perceptions of Price Dispersion	Searches for products with more than one vendor to compare prices
	Perceptions of price competitiveness between vendors or channels
Social	Others present when shopping online
	Impact of household on selection, shopping lists, etc.
Place & Space:	Location of observations
	Attitudes towards locations

Axial Codes	Open Codes
Design	Site graphics or pictures
	Layout/Navigation
	Bookmarks
Psychographic	Values
	Culture
	Lifestyle
Temporal	Day/time patterns/preferences
	Delivery scheduling
Polychronic Activity	Concentration on task at hand
	Other applications running
	Phone calls, email, IM, visitors
Selection	Preparation and use of shopping lists
	Use of 'Last Order/My Favourites'
	Decision criteria for non-list purchases
Searching & Browsing	Browsing within a site
	Search engines
	Searching within a site
Registration & Payment	Payment method
	Site registration
Service	Delivery destinations
Terrestrial Connections	Previous experience with terrestrial channels
	Current use of terrestrial channels
Prior Encounters with Vendor	Previous positive or negative experiences
	Preferences and decisions based on past experience

Axial Codes	Open Codes
Prior Encounters with Other Vendors	Previous positive or negative experiences
	Preferences and decisions based on past experience
Empowerment	Online shopping offers more/less control
	Delegation of product selection to vendor
Hedonic	Pleasure/Entertainment
Experimentation	Purchase of new/unfamiliar items

Table 4.1 – Axial Codes from Open Codes (Grocery Shopping)

4.3 Online Christmas Shopping

4.3.1 Data Gathering

In the second phase of the study, interviews based on the previously identified codes were held with the nine Christmas shopping participants. While the interviews were still primarily unstructured explorations of participant attitudes and behaviours towards shopping and their use of the Internet, some structure was introduced to ensure that the nodes uncovered in the grocery study were explored in depth. All of these participants were subsequently observed conducting some part of their online Christmas shopping. All sessions were audio recorded and held at the participants' preference of home or work locations with the exception of XP4 who did not have a preferred location for online shopping and was observed using a University lab computer.

4.3.2 Open Coding

Using the NVivo software package, coding was then done against the data from these sessions to produce an initial set of codes as detailed in Appendix B. In addition to the 56 open codes identified during the grocery study, seven new open codes were uncovered as follows:

- Responses to newsletters or other email from vendors
- Use of price comparison engines
- Multiple browser windows or tabs
- Multi-shopping
- Delivery methods

- Customer support
- Use of new/unfamiliar vendors

4.3.3 Axial Coding

The new open codes identified above were mapped to existing Axial codes as shown in Table 4.2.

Axial Codes	Open Codes
Openness to Persuasion	Responses to newsletters or other email from vendor
Perceptions of Price Dispersion	Use of price comparison engines
Polychronic Activity	Multiple browser windows or tabs
	Multi-shopping
Service	Delivery methods
	Customer support
Experimentation	Use of new/unfamiliar vendors

Table 4.2 – Mapping of new Open Codes to Axial Codes (Christmas Shopping)

4.4 Online Travel Shopping

In the third phase of the study, semi-structured interviews based on the previously collected nodes were held with the five Travel shopping participants. This was done at their preferred choice of location and four participants were subsequently observed shopping for Travel services. All sessions were audio recorded.

4.4.1 Open Coding

Using the NVivo software package, coding was then done against the data from these sessions to produce an initial set of codes. The resultant codes are detailed in Appendix C.

4.4.2 Axial Coding

All of the open codes derived from this part of the study were already uncovered in the Grocery and Christmas studies and consequently no new axial codes were produced.

4.5 Developing the Framework

The final stage in Grounded Theory methodology is the integration and refinement of the categories developed during Open and Axial coding into a coherent theory or framework. In this process, the relationships between categories are examined and theoretical categories are developed that integrate the Axial Code categories and "move your analytic store in a theoretical direction" (Charmaz, 2006).

Goulding (2002) recommends connection of the developing theory or framework with ideas gained from the existing literature in order to "enhance theoretical sensitivity". In the case of this research, a framing device for categorising and contextualising the Axial Code categories emerged that established seven basic questions or concerns an online consumer could have while shopping (Fig. 4.2).

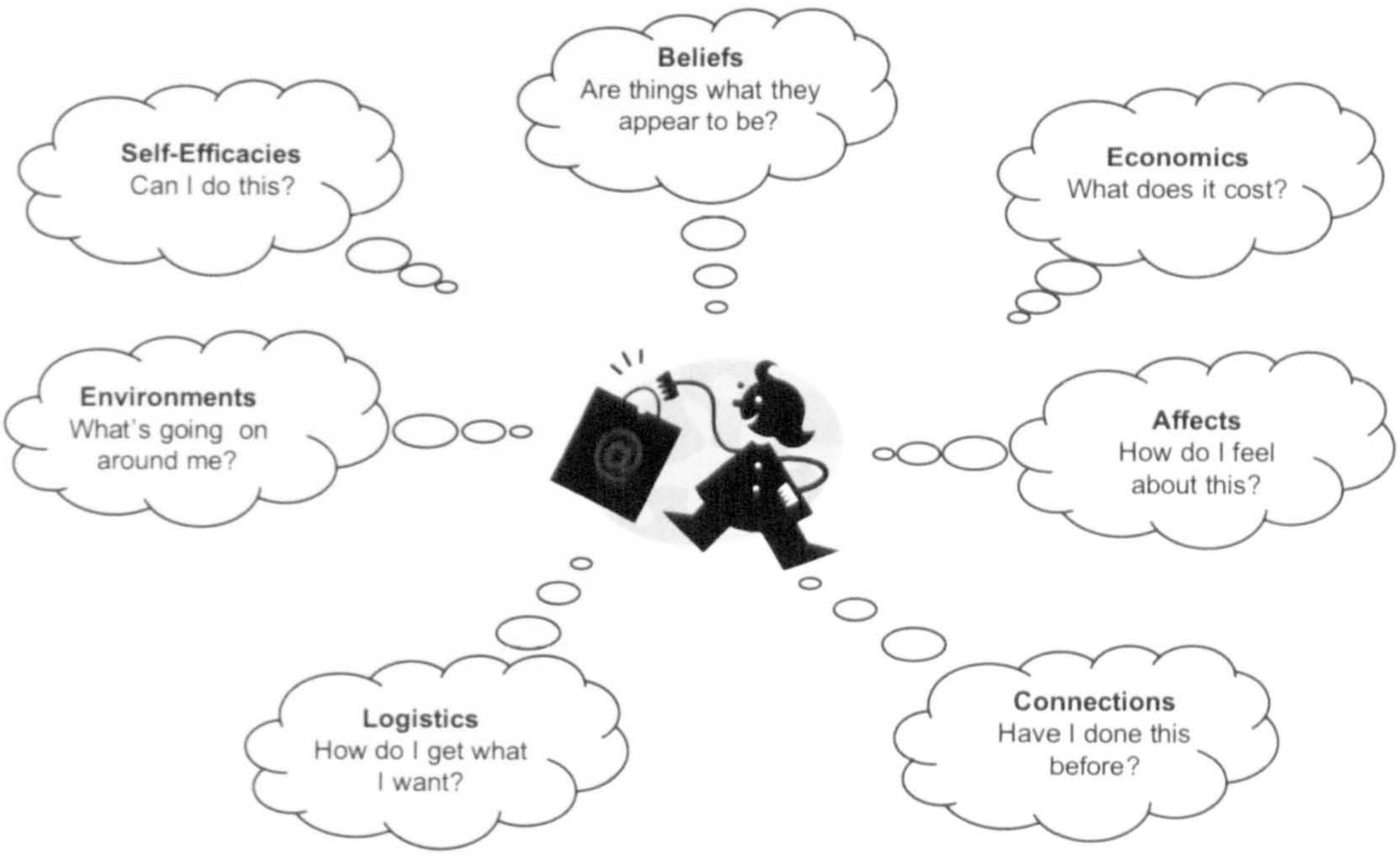

Figure 4.2 – Concerns of online consumers

By examining each question in turn and its origins in the literature, we can construct seven categories and map the codes to these categories and their relationships therein.

Table 4.3 presents a summary of the axial code mapping detailed in the rest of this section.

Theoretical Category	Axial Codes
Self-Efficacies	Technical Expertise, Product Expertise, Online Shopping Expertise
Beliefs	Trust, Loyalty, Openness to Persuasion
Economics	Value for Money, Perceptions of Price Dispersion
Affects	Empowerment, Hedonics, Experimentation
Connections	Terrestrial Encounters, Prior Encounters with Vendor, Prior Encounters with Other Vendors
Logistics	Selection, Searching & Browsing, Registration & Payment, Service
Environments	Social, Temporal, Design, Polychronic Activity, Place & Space, Psychographic,

Table 4.3 – Summary of Axial Code Mapping

4.5.1 Self-Efficacies – Can I Do This?

For the terrestrial consumer, this question usually relates to the product under consideration. Consumers will exhibit different types of shopping behaviour, particularly levels of product involvement, depending on their skills, knowledge and/or confidence in purchasing a particular item (Adcock *et al*, 2001). This question may also relate to a lesser degree to different types of shopping venues, for instance self-service versus full-service shops or high street shops versus farmer's markets.

In the case of the online consumer, this question becomes more complex. Not only do online consumers need to be concerned with deciding on various levels of product involvement, but they are also operating in a shopping environment and using a type of technology that may have varying levels of comfort.

Previous studies have shown Internet expertise to be a strong predictor in consumer adoption of online shopping (Eastin, 2002) but it is clear that the other types of expertise must also be considered in online consumer behaviour, as a consumer with high levels of Internet expertise may have little experience in selecting and purchasing particular types of products or indeed particular types of online shopping. For example, a consumer used to a standard B2C (Business to Consumer) system such as Amazon.com may find their initial encounter with an online auction service such as eBay to be

disorienting regardless of how much they know about the product or computer technology. In addition, the experience of online shopping shapes behaviour over time as the consumer's environment is affected by such phenomena as the feedback and product/vendor information gathered during shopping (McCarthy & Wright, 2003). Consequently the answer to "Can I do this?" will change over time for any one consumer.

While most of the participants in this study were confident in their knowledge of computers (TP1: "I think if you gave me a box and the bits I could build you one"), one of the more dedicated online grocery shoppers, GP6, had low levels of technical skills ("I know nothing about computers"). In terms of product expertise, grocery shoppers were knowledgeable about food and food products, with one pair, GP1, having actually worked in supermarkets. Some Christmas shoppers were reluctant to purchase unfamiliar products online (XP6: "I buy things [online that]I know how they work and what they are like"), but others demonstrated purchasing of gifts in unfamiliar genres such as the classical music CD purchased by XP1, or products that were completely unfamiliar to them, such as the digital camera purchased by XP4. Levels of online shopping skills ranged from GP3 (another dedicated grocery shopper) describing online shopping as "too complicated" to XP4's claim that online shopping was "generally more my style, which is randomly rummaging around".

For the participants in this study, judging whether they could do an online shopping activity was not simply a question of product, technical or online shopping expertise but also self-assurance. Therefore the decision was taken to combine the nodes of Technical, Product and Online Shopping expertise into one category called *Self-Efficacies* – the belief in one's ability to successfully perform a task.

4.5.2 Beliefs – Are Things What They Appear to Be?

For the terrestrial consumer, the question of belief can cover a variety of concerns including the vendor, the brand, the product and the service (Solomon *et al*, 2002). These beliefs are influenced by and in turn influence consumer loyalty. The willingness to place credence in the vendor will influence reactions to persuasive messages from the vendor (Schiffman & Kanuk, 2004).

The extent to which the consumer is willing to believe they can rely on an online transaction should naturally have an impact on willingness to shop online (Egger, 2003; Shneiderman, 2000; Lee *et al*, 2000). It is therefore logical to assume that an online consumer must be willing to place some level of credence on both the concept of shopping online and the vendor itself in order to proceed with a transaction. While much

attention has been paid to issues of trust in online shopping, recent studies suggest that issues of trust are perhaps no longer seen by online consumers as making a major contribution to their shopping experience (Cho, 2004; Wolfinbarger & Gilly, 2003). In fact, for the terrestrial consumer trust is merely one of many related factors in purchasing behaviour and it is by no means the most important (Adcock *et al*, 2001; Solomon *et al*, 2002).

In analysing the results of this research, it became clear that the participants had developed various ongoing strategies for minimising their perception of risk such as never storing personal details online (GP1, GP7, XP3, XP4) or relying on reviewing credit card statements (XP5: "I'm not bothered either way, because I check my credit card statements religiously and ruthlessly so I count on that as my check") or gravitating to known vendors (TP2: "You try to stick to sites that are recommended or look quite official, which you're heard of...things you see advertised on television and through periodicals. I wouldn't go to some unknown unheard of website and start purchasing things"). Regardless of the specific strategy used, transactional trust had become a background issue for the participants because they had developed a working *belief* in the online shopping system, a belief that transcended any specific perception of online security offered by their computer, a vendor or bank card system. As XP4 stated, "I think a few years ago my inclination towards shopping online would have been lessened considerably because...my perception was that there were less retail establishments and less reputable companies that were selling stuff online that I'd be wanting to buy. The fact that everyone's joined the 'Information Age'...encourages me to be more trusting towards shopping online."

The facilities and opportunities inherent in e-Commerce suggest that other belief-related issues such as consumer loyalty could be manifested differently in the online environment – the importance of consumer loyalty may take on a different characteristic when access to the competition is only a click away and when brand loyalty may become a defence against perceptions of risk (Gupta *et al*, 2004). In fact, the grocery shoppers exhibited strong loyalties to their online vendor, Tesco, with only GP2 and GP8 willing to try other online supermarkets, but they didn't necessarily transfer that loyalty to Tesco's terrestrial outlets. While the other participants did express preferences for known vendors (XP8: "I have a pretty definitive knowledge of which websites will give me the best deal"), they were often easily swayed by offers of better prices from unfamiliar sites (TP1: I'll get it from a new vendor if that's going to be the best deal and that's the item I want"). In some cases, the participants had strong negative feelings towards the vendor (usually due to overall perceptions about the company) but still

chose to purchase from the vendor because of a strong *belief* in the vendor's performance or pricing. As GP3 said concerning her online supermarket, "The system works well for me, the online shopping works well for me. The things that irritate me more about them [the online supermarket] are the products that I don't like" – but she continued to use this vendor on a regular basis.

Fogg (2003) demonstrates that where users are willing to place credence or *belief* in a computer system, these systems can have unique capabilities for persuasion that other media lack such as interaction, adaptability and persistence. This suggests that online consumers, by manifesting a degree of *belief* in online shopping systems, can be affected by Internet-based persuasive techniques. The participants had a variety of reactions to such persuasive techniques, with some refusing to examine a product specifically because it had been promoted (GP3), to others who reacted positively particularly when the persuasive clue was well-targeted. For example, XP1 purchased a CD as a Christmas gift because of an Amazon recommendation.

The reoccurring theme of beliefs in consumer behaviour led to the decision to combine the nodes of Trust, Loyalty and Openness to Persuasion into one category called Beliefs.

4.5.3 Economics – What Does It Cost?

The consumer's *economic* issues – their ability and willingness to spend money – must be considered when examining shopping behaviour (Adcock *et al*, 2001). Obtaining what is perceived by the consumer as value for money is a key driver with an important component of this perception not just knowing the price of a potential purchase but also the ability to compare prices amongst vendors (Solomon *et al*, 2002). However, for the terrestrial consumer the ability to compare prices amongst vendors is often constrained by physical and/or temporal factors and the consumer must rely on vendor/brand loyalty, previous experience or printed/broadcast media for this activity.

The online consumer's lower search costs and greater availability of information can increase the extent of searching done and the amount of information gathered, allowing online consumers to consider more alternatives than their terrestrial counterparts. Biswas (2004) suggests that this in turn may eventually reduce perceptions of price dispersion (price differences among vendors) and lead to reduced price-consciousness amongst online consumers as price becomes less of a distinguishing factor and other factors such as service quality, personalisation and brand loyalty may become more important than the actual price in determining value for money.

For the participants, such economic issues were often a critical factor in behaviour. Price comparison activity varied with the type of domain, ranging from the grocery shoppers who did little or no price comparing across vendors, to the Christmas and Travel shoppers who often found comparison shopping "well worth doing" (XP3) and used price comparison engines (XP4, XP8, TP2), to the travel shoppers who all compared prices across multiple vendors and permutations of travel requirements. Participants did use other factors to determine value for money (TP5: "I don't necessarily want the cheapest"), but for those with strong perceptions of price dispersion within the shopping domain (i.e. the travel shoppers) this determination was made only after they had satisfied themselves as to what was the lowest price available. The nodes Value for Money and Perceptions of Price dispersion were consequently combined into a theme called Economics.

4.5.4 Affects – How Do I Feel About This?

To many consumers, shopping is not simply a task but also a form of entertainment, a source of pleasure or a means of self-expression and self-actualisation (Solomon *et al,* 2002; Underhill, 2000). Consumers can undergo positive or negative affective experiences regardless of whether a purchase is successfully made and even a relatively prosaic domain such as grocery buying can generate positive or negative feelings (Childers *et al*, 2001).

Home shopping is generally rated lower in terms of affective aspects such as entertainment and social interaction and if online shopping was simply a sub-set of home shopping then it too would seem to be a poor source of engagement (Chen *et al*, 2002). However, given the number of people who already use the Internet for entertainment and interaction, Shang *et al* (2005) argue that it is not unreasonable to assume that these people may also have similar expectations of online shopping. In fact, some of the participants who enjoyed such activities as researching information on the Internet also derived pleasure and entertainment from online product and service research (XP4: "[online shopping is] generally more my style, which is randomly rummaging around") or enjoyed simulating shopping (XP5: "I just loved looking at the books [on Amazon] and I would fill up my basket with loads of books and every so often would buy some of them...the way you could just spend ages just looking for books and linking to other books...I just enjoyed being there. And because I didn't really have money to buy books or records or anything I would shop online 'virtually' but not actually buy them so it was kind of getting the shopping experience without having to spend the money.").

Other participants derived particular pleasure and enjoyment from successfully conducting their first transaction (GP2's reaction to their first online grocery encounter was, "We will do this forever!"). Some participants perceived most forms of shopping overall as a pleasurable activity (XP9: "I do like my shopping"), while others expressed dislike of shopping as an activity (XP4: "I'm not a great fan of retail shopping").

The desire to control their shopping experience was evident in participants (GP4: "I'm fussy about what I get and I like to have choice"), but opinions were divided as to whether online shopping actually gave them more control (TP5 listed "control" as her primary reason to shop online), or detracted from their sense of control (TP1: "[online shopping gives] far less control, because you can't talk face to face with somebody and explain what you want"). This desire for control sometimes set up a tension with the desire for experimentation. The ability to shop world-wide in relative anonymity at anytime from virtually any location, combined with the availability of real-time product and competitor information should serve to increase the postmodern consumer's sense of freedom and power, with features such as personalisation adding a feeling of discovery (Nielsen, 2003). As XP5 said, "The world's your oyster as far as Internet Shopping. Everything is available...". However, when personalised information handling leads to filtering out information not just deemed irrelevant but also information that may contradict established behaviour (Wachbroit, 2000), then the online shopper can lose power by losing opportunities for experimentation. For example, in a terrestrial supermarket a shopper usually passes through most of the aisles in order to complete the week's shopping and is consequently exposed to various displays of products. The consumer may not have consciously been seeking these items or even knew they existed, but the location of the display or an appeal to the senses triggers recognition of needs and desires (Halstead-Nussloch, 2004). That same consumer online, by controlling exactly what parts of the online supermarket are viewed, reduces if not completely eliminates this exposure, minimising the likelihood of making unplanned purchases but also in the long run possibly limiting rather than expanding their shopping experience by not being exposed to new products or services they may find useful or enjoyable. This conflict was often experienced by the grocery shopping participants and led to various levels of frustration with the online grocery shopping experience (GP5: "You get the same things every time. You have a hard time finding new things."). Participants in other domains were less conflicted, with some still viewing terrestrial shopping as offering a superior platform for experiencing new or unfamiliar items (XP2: "I like seeing things in the shop that trigger ideas.") while others specifically cited online shopping as superior in this regard (XP7: "[Online shopping] is

entertaining somehow, because you see new things, even if you're not looking for them, you see them and even if you're not interested in them now they give you some creative experience to combine other things").

To capture the common aspects of the above-mentioned emotional aspects of shopping, the four axial codes of Pleasure, Entertainment, Experimentation and Empowerment developed during Axial coding were combined into the single theme of Affects.

4.5.5 Connections – Have I Done This Before?

Traditional and modern models of consumer behaviour show that a consumer's behaviour is influenced by prior shopping experiences, with levels of satisfaction becoming an integral part of new decision making amongst other processes (Walters, 1976; Schiffman & Kanuk, 2004). McNeal (1973) points out that positive remembrance of previous shopping experiences will often lead to the consumer repeating the same behaviour, resulting in preferences for particular products or vendors or shopping environments.

This type of behaviour, making *connections* from previous encounters and using these connections in determining current and future actions, should certainly be manifested by online consumers as well. However, there is potentially one other type of connection that the online consumer can make – the connection from the terrestrial world to the virtual one. From the perspective of Interaction design, previous experience is a key component in the mental models developed by users (Norman, 1988) and there may be a desire to emulate real-world activity online (Preece *et al*, 2002). This means that in the case of online shopping, the consumer's behaviour may be affected not just by previous shopping sessions with that vendor or others, but also by attitudes and expectations derived from terrestrial shopping experiences.

The participants in this study, like terrestrial shoppers, demonstrated that connections made from previous positive and negative experiences with vendors did affect their online shopping behaviour, not just in their choice of vendors (as in TP2) but also in their interaction with the vendor, enabling more effective execution of transactions. For example, GP4 and GP7 knew from previous experience with their online supermarket that particular pick instructions would need to be given for certain types of produce. In addition, connections were made between terrestrial and virtual shopping experiences, driving participants towards or away from purchasing certain items online (TP4 avoided purchasing local excursions online due to past experiences) and in some cases towards synthesising terrestrial and virtual shopping. For example XP5 used the vendor's paper

catalogue to decide on purchases and the vendor's website to place the orders – "I quite like having a catalogue to look through first and then going online to do the actual shopping".

The three Axial codes of Terrestrial Connections, Prior Encounters with Vendor and Prior Encounters with Other Vendors were consequently combined into the category of Connections.

4.5.6 Logistics – How Do I Get What I Want?

Any examination of consumer behaviour must include understanding the actual act of making a purchase (or deciding not to make a purchase) and the *logistics* surrounding that activity. Adcock *et al* (2001) break this activity down into four stages:

- Identification of Alternatives – the consumer does some sort of information search
- Evaluation of Alternatives – the consumer evaluates the results of their information search
- Decision – the consumer applies some sort of decision making criteria
- Action – the consumer acts on the decision

This is not to say that all consumers go through each of these cognitive stages when making a purchase. For instance, it is debatable whether the consumer who walks into a newsagent to purchase a paper but then sees and decides to purchase a chocolate bar has truly identified and evaluated alternatives, although some researchers such as McNeal (1973) argue that there is always a degree of cognition before any purchase, even a so-called "impulse" one.

It is reasonable to expect that the online consumer goes through a similar set of stages (or subset thereof) in conducting their transaction. In fact, researchers who view e-Commerce systems as primarily a means for facilitating consumer decision making activities, conclude that for the online consumer the primary contribution of online shopping to their behaviour is in making these logistics more convenient and efficient (Keen *et al*, 2004; Miles *et al*, 2000). While convenience and efficiency are indeed important to any consumer, the depth and breadth of information available on the Internet and the scope for interactivity provide tools for information search and evaluation far beyond the reach of a terrestrial consumer. In addition to product searching and selection, the online consumer is faced with decisions concerning payment, delivery and support that are different from their terrestrial counterpart and will impact their behaviour accordingly (Dawson *et al*, 2003).

In analysing how the participants in this study handled the logistics of purchase transactions, four aspects of this behaviour were identified – searching/browsing (information search), product selection, payment and service (delivery/support) specification. Where shopping was cyclic, as in the grocery domain, some participants would browse their 'Last Order' or 'My Favourites' list and select products from there (GP3, GP4, GP6, GP8), using search features to locate additional items. Other participants would instigate searches from search engines (XP1, XP3, XP4, XP8, TP1, TP4) price comparison engines (XP4, TP2) and/or use search features within a site (XP1, XP4, XP5, XP6 and all grocery and travel participants) in an iterative manner (XP8: "I improve upon my search teams as I learn more"). Browsing to find items was also used (GP4: "I'll dip in and out of categories") but was less popular (no travel participants engaged in site browsing behaviour) and browsing was sometimes seen as unproductive (XP8: "If I know what I'm after I don't ping around the site").

Product selection activity was sometimes determined by previously prepared shopping lists (GP1, GP2, GP5, GP7, XP2, XP3, XP6, XP8, XP9). A variety of criteria were used to make purchasing decisions including price, brand names, pictures, price, features and, in the case of travel, scheduling and locations (both destination and departure points).

Credit/Debit cards were the most popular form of payment, although some participants occasionally used alternative methods such as PayPal (XP1, XP4, XP7), Bank Transfer (XP7) and Cheque (XP9). Requests for delivery and other customer services were governed by a variety of factors, including convenience (XP6: "I don't have to haul it home, it's done, it's more convenient"), schedules (particularly the grocery shoppers) and cost of the item as well as delivery cost (XP4: "I don't want to have a £1000 digital camera sent through the mail!").

These axial codes of Searching and Browsing, Selection, Registration and Payment and Service were combined into the theme of called Logistics.

4.5.7 Environments – What's Going On Around Me?

When thinking about the context of terrestrial consumer behaviour, the first thought is that of the shop or other retail setting. In fact, there are a number of atmospheric influences generated by shop design that can have a profound effect on everything from when and how the consumer moves through the shop to how much the consumer spends (Turley & Milliman, 2000). However, shop design is only one component of the circumstances under which the consumer is operating and consumer behavioural models recognise a variety of these external or *environmental* influences (McNeal, 1973)

including social, psychographic, temporal as well as physical factors (Walters, 1976; Solomon *et al*, 2002; Schiffman & Kanuk, 2004).

In examining online consumer research, the design of the e-Commerce site can indeed influence behaviour and some principles of retail design have been shown to be relevant to designing e-Commerce sites (Childers *et al*, 2001; Turley & Milliman, 2000; Eroglu *et al*, 2001). For example, the impact of a site's homepage can often correspond to that of a shop window (Lohse & Spiller, 1999). However, like the terrestrial consumer, the online consumer is also going to be affected by other environmental influences. Contextual issues such as location or time must be considered, just as they would be for other types of interaction design (Preece *et al*, 2002). Furthermore, not only do online consumers have the ability to shop 24 hours a day, but they also have far more scope for polychronic activity (multi-tasking), a behaviour becoming more common amongst consumers overall (Kaufman-Scarborough & Lindquist, 1999).

The study identified six axial codes relevant to environmental influences on participant behaviour – site design, social influences, place and space, temporal issues, degree of polychronic activity and psychographic variables. Some participants put little or no value on site design such as XP1 who said, "I just go there for the content rather than the design" or GP3 and GP7 who explicitly disabled the display of product pictures on their online supermarket site (in fact, most of the grocery participants had not noticed that their online supermarket had recently undergone a major site re-design). Others perceived site design as impacting the time needed to successfully search for products (XP8: "If it's a badly designed website I'm going to feel that it's going to take me longer to find something") or relied on site graphics and pictures as part of their decision making (XP7: "I make a connection when I see a picture").

Social influences varied with size of household or size of extended family in the case of the Christmas shoppers (XP3, XP4 and XP5 all claimed to have over 15 people on their Christmas gift list). In most cases participants habitually shopped alone except for GP1 and GP2, although some such as XP9 would contact others while shopping online to get input and advice on purchases.

Online shopping was done either at home (TP1: "...if you're sitting home quietly with a cup of tea and you can walk in and out of the room and think...you can spend hours") or from the workplace (XP5: "This is comfortable, I just move over, in my office and shop"), although XP1 and XP4 would also use computer labs for their shopping.

Scheduling of online shopping ranged from those who shopped at a set time of day (GP2, GP3, XP5, XP7, TP3) to those who simply shopped when they had the opportunity. Some of the grocery participants in particular would schedule their online shopping for set days of the week (GP3, GP5, GP6) as well. Most participants did engage in some form of polychronic activity, including shopping for different items simultaneously (XP8 and XP9). However, some shoppers tended to avoid polychronic activity – XP3 described herself as "not a great multi-tasker" and GP2 stated, "When I do the shopping, I have to concentrate".

While all participants were UK residents, several (GP2, GP7, XP7, TP2 and TP4) were not UK nationals and in some cases country of origin was relevant to their online shopping behaviour, ranging from XP7's preference for German vendors to TP2's declaration that, "I'm also your typical American who doesn't want to wait in line, doesn't want to wait for anything and people are a nuisance sometimes". Lifestyle and values had a variety of impacts on behaviour – some participants made purchasing decisions based on health (GP4) or concerns about the environment (TP1, GP2), while others would purchase from vendors even when they had concerns about the vendor's ethics or business practices (GP3, TP3).

4.6 Visualising The Framework

This structure for understanding online consumer behaviour described above will henceforth be called the e-Consumer Framework or "e-CF" for short. A visual summary of this e-CF is shown in figure 4.3.

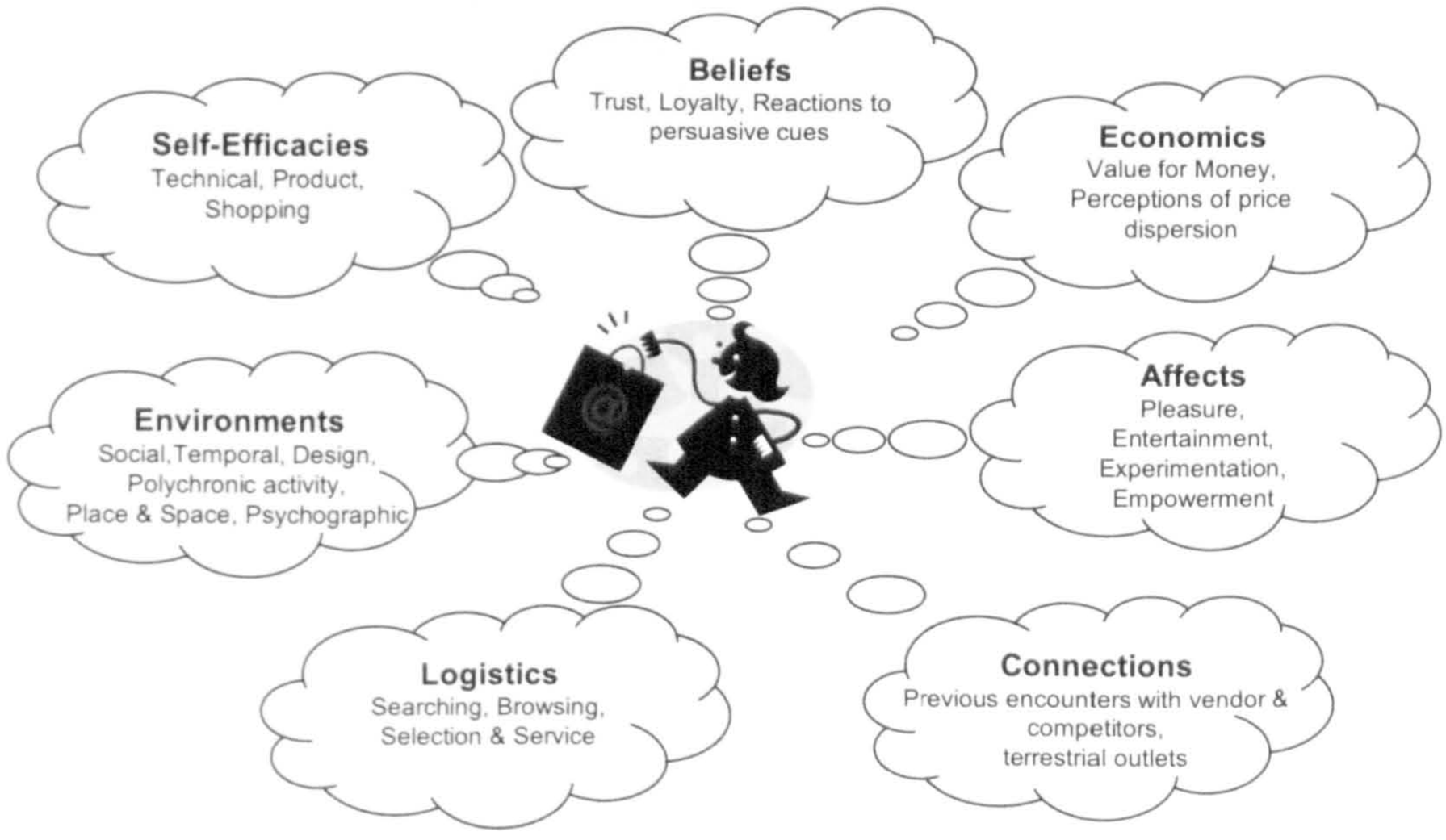

Figure 4.3 – The e-Consumer Framework (e-CF)

While this visual summary depicts each theoretical category in a separate "cloud", this is not to imply that each category is a stand-alone theme with no relationship to any other theme or that each category is of equal size or relevance. In fact, each of these categories can be influenced by any or all of the others. For example, participant XP4's desire to get the lowest price possible for a digital camera influenced his decision to purchase from an unknown vendor, demonstrating that the theme of Economics had a direct impact on Beliefs. Additionally, the fact that each of the clouds in Figure 4.3 is of the same size does not imply that each category is of equal size or relevance – if one were to draw a proportional version of Figure 4.3 for the leisure travel participants, the Economics cloud would be larger that all the other clouds combined.

4.7 Summary

This chapter described the construction of a framework for understanding online consumer behaviour, the e-CF. Data were gathered from 24 participants across three shopping domains – groceries, Christmas gifts and leisure travel – and coded in accordance with Grounded Theory methodology. The resultant codes were developed into seven categories using both participant data and previous literature and these seven categories became the basis of the e-CF.

The next chapter will describe guidelines for use of the e-CF in exploring online consumer behaviour.

5 Exploring Online Consumer Behaviour

> "The outcome of any serious research can only be to make two questions grow where only one grew before."
>
> Thorsten Veblen (Cohen & Cohen, 1971)

In Chapters 3 and 4 of this thesis the derivation of a framework for exploring online consumer behaviour, the e-CF, was described. This chapter will look at what an exploration of online consumer behaviour should accomplish and how such explorations can be structured using the e-CF .

Robson (2002) lists the purposes of exploratory research as follows:

- To find out what is happening, particularly in little-understood situations
- To seek new insights
- To ask questions
- To assess phenomena in a new light
- To generate ideas and hypotheses for future research

Using Robson's criteria, an exploration of online consumer behaviour should ask (and answer) questions about aspects of that behaviour, depict patterns and new insights into that behaviour, enable assessment of behaviour within a domain through comparisons with other domains and indicate directions for further research into both online consumers and their artefacts. To accomplish these exploratory goals, the researcher needs an appropriate set of questions, a set of tools for gathering information and a structure for exploring and comparing behaviours.

5.1 Developing Questions

As discussed in Chapter 2, one of the key ways in which a framework can be used to examine online consumer behaviour is to generate questions for the researcher to use in their exploration. In looking at each of the e-CF themes and their development, a series of questions can be developed that are relevant to each theme.

5.1.1 Self-Efficacies

This theme relates to the levels of confidence and skill exhibited by the online consumer in their use of the Internet, their use of online shopping and their activity within the

specific shopping domain. Examples of the types of questions that explore these levels of self-efficacy include:

- How comfortable is the online consumer with using the Internet?
- How familiar is the online consumer with the specific shopping domain?
- How comfortable is the online consumer with shopping online? Is there anything the online consumer will not buy online and if so, why?

5.1.2 Beliefs

This theme relates to the levels of belief the online consumer has towards vendors, brands, products, shopping online, vendors and subsequent responses to persuasive cues. Examples of the types of questions that explore these aspects of beliefs held by the online consumer include:

- What concerns does the online consumer have about the security of online shopping and what assuages those concerns?
- What concerns does the online consumer have about the reliability or quality of the vendor or item being sold and what assuages those concerns?
- Does the online consumer prefer to stick with particular vendors? If yes, can they be tempted away and how?
- Are there vendors the online consumers prefer to avoid? If yes, are there conditions under which they'd use those vendors anyway?
- What vendor newsletters does the online consumer subscribe to and why?
- What does the online consumer do with banners, sponsored sites and other persuasive clues?

5.1.3 Economics

This theme relates to the online consumers attitudes towards pricing, price competitiveness, comparison shopping and how value-for-money is determined. Examples of the types of questions that explore these aspects include:

- How important is cost in deciding on a purchase?
- How is the cost calculated?
- Does the online consumer compare prices with other vendors? If yes, what sites/services are used to compare prices and how extensive is this activity?

5.1.4 Affects

This theme relates to how the online consumer feels about their shopping activities, including the degree of pleasure, sense of control and desire for new experiences derived from shopping online. Examples of the types of questions that explore these aspects include:

- Is shopping generally viewed as pleasurable or entertaining?
- Is shopping within the domain viewed as pleasurable or entertaining?
- Is online shopping viewed as pleasurable or entertaining?
- How much control do they want over their purchases? Do they feel online shopping enhances or detracts from control and how?
- To what extent are they willing to experiment with new products or services or vendors?

5.1.5 Connections

This theme relates to how the online consumer is influenced by experiences with terrestrial shopping, encounters with other online vendors or previous encounters with the same vendor. Examples of the types of questions that explore these aspects include:

- How have they used terrestrial channels in the past? Under what conditions would they do so in future?
- What experiences have they had with similar online vendors, or previous visits to the same vendor?

5.1.6 Logistics

This theme relates to how the online consumer searches, selects, pays for and takes delivery of goods and services purchased online. Examples of the types of questions that explore these aspects include:

- How is a search started? Do they go directly to a site or do they use a search engine?
- Within a site, what criteria are used to search?
- How many search results are examined and when do they stop?
- How much of their requirements are pre-determined and how do they resolve the ones that aren't?
- What is the decision criteria and rank?
- How do they pay for their shopping?
- Are they registered with any vendor sites? If yes, when and how do they log in?
- Do they print their confirmation screens/email? If yes, what do they do with the printout?
- Do they use or purchase any ancillary services during the same session? If yes, how?

5.1.7 Environments

This theme relates to the setting in which the online consumer is operating, including place and space, time, psychographic profile of the online consumer, hardware and

software and reactions to site design. Examples of the types of questions that explore these aspects include:

- Do they purchase for other people? If yes, how are these people involved in decision-making?
- Where and when do they do their shopping?
- What cultural, ethical, religious issues or special interests may affect their shopping?
- What polychronic activity do they engage in? Are there any times they prefer not to be interrupted? Do they multi-task or multi-shop and if yes how? (tabs, windows) What sites are used?
- What hardware/software do they normally use?
- Do they have any particular opinions on site layout or display? To what extent do they try to control site display?
- Do they expect to have visibility/continuity of previous visits to the site?
- How do they react to pictures or other Multi-media?
- Do they bookmark sites?

5.2 Gathering Information

One obvious use for the questions listed above is as a basis for constructing individual data-gathering studies such as formal or semi-structured interviews, but these questions can also be used to gather information on a larger scale. Self-administered questionnaires or surveys are a popular tool for gathering information on trends and patterns in user attitudes, beliefs and preferences during both requirement gathering and evaluation phases (Dix *et al*, 2004; Preece *et al*, 2002; Faulkner, 2000) and also function as an integral part of consumer research (Solomon *et al*, 2002; Schiffman & Kanuk, 2004). Consequently, the questions generated from the e-CF can provide a basis for constructing surveys of online consumer behaviour that will provide a rich data set for exploring behaviour within a domain.

Chapters 6 and 7 will demonstrate the development and administration of such surveys to gather data on domain-specific behaviours.

5.3 Exploring and Comparing Behaviour

Regardless of which methodology has been used to gather data, another function of the e-CF is to provide a structure for depicting online shopping behaviour and exploring the relationships within and across domains. By collating data into the e-CF themes, a rich picture can be built of either individual users or a particular group and these structured rich pictures can in turn be used to identify patterns and compare behaviour across domains .

Chapters 6 and 7 will demonstrate how the e-CF is used to depict and compare individual and group behaviour and Chapter 9 will show how these depictions can be used to develop Interaction Design personas.

5.4 Exploring Artefacts

Carroll (2000) argued that artefacts created by interaction designers "reflect substantial and complex theories of human activity and experience", although these theories may not be articulated or even well-formed. Preece *et al* (2002) developed this idea further by demonstrating how examining artefacts such as WAP-enabled phones revealed the assumptions designers made about users and the space in which users operate.

By using e-CF based questions developed for exploring online consumer behaviour as a basis for exploring e-Commerce websites, structured pictures of *designer* assumptions and perceptions of the online consumer within a specific domain can be built. Table 5.1 lists the questions on online consumer behaviour described in Section 5.1 and examples of related questions that could subsequently emerge about a particular website.

e-CF Theme	Questions About the Online Consumer	Questions About the e-Commerce Site
Self-Efficacies	How comfortable is the online consumer with the Internet?	What level of Internet experience/expertise is needed?
	How familiar is the online consumer with the shopping domain?	What level of domain/product experience/expertise is needed?
	How comfortable is the online consumer with shopping online? Is there anything they will not buy online and if so, why?	What level of customer familiarity with online shopping is assumed?
Beliefs	What concerns does the online consumer have about the security of online shopping? What assuages those concerns?	What assurances about transactional security are provided?
	What concerns does the online consumer have about the reliability or quality of the vendor or item being sold? What assuages those concerns?	What assurances about the vendor or item are provided?
	Does the online consumer prefer to stick with particular vendors? If yes, can they be tempted away and how?	How does the site differentiate itself from competitor sites? How is customer loyalty recognised and rewarded?
	Are there vendors the online consumers prefer to avoid? If yes, are there conditions under which they'd use those vendors anyway?	How are new customers encouraged to use the site?
	What vendor newsletters do they subscribe to and why?	What newsletters are offered and how are customers made aware of these?
	What do they do with banners, sponsored sites and other persuasive	What banners, sponsored sites and other persuasive clues are

e-CF Theme	Questions About the Online Consumer	Questions About the e-Commerce Site
	clues?	presented?
Economics	How important is cost in deciding on a purchase? How is the cost calculated?	How are prices displayed? How and when is the total cost (inclusive of shipping, tax, etc.) displayed?
	Do they compare prices with other vendors? If yes, what sites/services are used to compare prices and how extensive is this activity?	What price comparison facilities are offered? How are perceptions of price dispersion addressed?
Affects	Is shopping generally viewed as pleasurable or entertaining? Is shopping within the domain viewed as pleasurable or entertaining? Is online shopping viewed as pleasurable or entertaining?	What entertaining features are present? How is pleasure encouraged?
	How much control do they want over their purchases? Do they feel online shopping enhances or detracts from control and how?	What controls over product display and site functionality are offered? What sorts of control over product selection/composition is offered?
	To what extent are they willing to experiment with new products or services or vendors?	How are new/special offerings conveyed?
Connections	How have they used terrestrial channels in the past? Under what conditions would they do so in future?	Is the site part of or affiliated to a terrestrial entity? How is that affiliation manifested?
	What experiences have they had with similar online vendors, or	Is the site part of or affiliated to other online sites? How is that

e-CF Theme	Questions About the Online Consumer	Questions About the e-Commerce Site
	previous visits to the same vendor?	affiliation manifested? What recognition of previous site visits is offered? How does the site compare to competitor sites?
Logistics	How is a search started? Do they go directly to a site or do they use a search engine?	Does the site have a memorable URL? What is the search engine ranking?
	Within a site, what criteria are used to search?	What search/selection facilities are available?
	How many search results are examined and when do they stop?	How are search results displayed?
	How much of their requirements are pre-determined and how do they resolve the ones that aren't?	Are there options to generate or import shopping lists or preferences? How flexible are search criteria?
	What is the decision criteria and rank?	How is product information displayed? How are Terms & Conditions displayed?
	How do they pay for their shopping?	What payment facilities are offered?
	Are they registered with any vendor sites? If yes, when and how do they log in?	How is site registration handled?
	Do they print their confirmation screens/email? If yes, what do they do with the printout?	How are purchase confirmations displayed/sent?

e-CF Theme	Questions About the Online Consumer	Questions About the e-Commerce Site
	Do they use or purchase any ancillary services during the same session? If yes, how?	What ancillary services are offered and at what stages of the purchase?
Environments	Do they purchase for other people? If yes, how are these people involved in decision-making?	What facilities exist to send product information or results of searches to other people?
	Where and when do they do their shopping?	Is the site fully operational 24/7? What site features could not reasonably be used from a workplace computer? From an Internet café?
	What cultural, ethical, religious issues or special interests may affect their shopping?	What assumptions does the site make about the user's psychographic profile?
	What polychronic activity do they engage in? Are there any times they prefer not to be interrupted? Do they multi-task or multi-shop and if yes how? (tabs, windows) What sites are used?	Are there applications that conflict with use of the site? How and when is an inactive user timed out? What features or transitions require the user's full attention? What additional windows/tabs/pop-ups are generated by the site?
	What hardware/software do they normally use?	What particular applications/browsers are required to use the site? What particular hardware configurations are required to use the site?
	Do they have any particular opinions on site layout or display? To	What features are offered to control site display?

e-CF Theme	Questions About the Online Consumer	Questions About the e-Commerce Site
	what extent do they try to control site display?	
	Do they expect to have visibility/continuity of previous visits to the site?	What personalisation features are offered?
	How do they react to pictures or other Multi-media?	What multi-media is offered and why?
	Do they bookmark sites?	Does the site have an easy-to-remember URL? Is there a "Bookmark this site" feature?

Table 5.1 – e-CF Derived Questions About e-Commerce Sites

Chapter 8 will present a case study in using these e-CF based questions to explore assumptions made about users of various online leisure travel sites.

5.5 Summary

This chapter presented methods for exploring online consumer behaviour using the e-CF as a structure for gathering data, identifying behavioural patterns, comparing behaviours across domains and uncovering design assumptions. Chapters 6 through 8 will present case studies in using these methods to explore online consumer behaviour in Christmas gift shopping and grocery shopping and design assumptions of leisure travel websites.

6 The e-CF in Action – Exploring Online Christmas Shopping

> "The world's your oyster as far as Internet shopping. Everything is available."
>
> Christmas shopping study participant XP5

In Chapter 2 of this thesis the argument was made for a framework for exploring online consumer behaviour. Chapters 3 and 4 detailed the development of such a framework, the e-CF and Chapter 5 discussed several ways in which the e-CF could be used in studying various aspects of online consumer behaviour. This chapter describes the first of three case studies in exploring online consumer behaviour using the e-CF as the framework for exploration. This case study details the development and administration of an e-CF based survey on online Christmas shopping in the UK and the subsequent picture that emerged of online Christmas shoppers.

6.1 Background

The goal of this case study was to conduct an e-CF based exploration into the behaviour of online consumers doing Christmas gift shopping in the UK, in order to demonstrate how the e-CF could facilitate comprehension of behaviour within this domain. Online Christmas shopping had become increasingly popular in the UK and in fact online sales in the run-up to Christmas 2006 grew by over 50% from those of the previous year (BBC, 2007), so a particular challenge for this exploration was to collect data from as many participants as possible in a relatively short time-frame. As previously described in Chapter 5, surveys are an established tool in consumer research for collecting data on patterns and trends (Solomon *et al,* 2002; Schiffman & Kanuk, 2004) and surveys are also able to collect data on a larger scale than ethnographic studies. Given these particular advantages of surveys, along with the popularity and time-dependent nature of Christmas shopping, an online-survey was chosen for this exploration. By using the e-CF as the framework for generating this survey and analysing its results, the expectation was that a picture of online consumer behaviour could be built that would provide insights into the patterns and issues affecting online Christmas shoppers, enable comparisons of their behaviour with shoppers in other domains and indicate directions for further research.

6.2 Constructing the Survey

To construct the survey, the e-CF based questions described in Chapter 5 were used as the basis for developing survey questions, with adaptations for domain-specific issues where relevant. Closed questions were used in most cases to encourage participation as these types of questions are generally perceived by respondents as easier and quicker to complete (Clark-Carter, 2004). For some questions, respondents were presented with various statements and asked to indicate their agreement on a Likert scale of Strongly Disagree-Disagree-Neutral-Agree-Strongly Agree. For other questions, respondents were asked how often they thought they engaged in a particular behaviour on a Likert scale of Never-Rarely-Sometimes-Frequently-Almost Always. In all other questions respondents were asked to pick from a set of responses, or to enter their own response where appropriate. Questions were intended to explore either reported behaviours or attitudes, with themes duplicated with alterative wording where possible to minimise response bias (Clark-Carter). In several instances the same question was used to explore more than one theme and a total of 75 closed questions were developed.

The first questions asked of all respondents was as follows:

Which of the following statements most closely describes your Christmas shopping in 2006?
I did most or all of my Christmas shopping on the Internet.
I did about half of my Christmas shopping on the Internet.
I did some Christmas shopping on the Internet, but most of my Christmas shopping was/will be done in person.
I didn't do any Christmas shopping on the Internet in 2006

In addition to exploring the e-CF theme of Connections this question acted as a primary filter, as the scope of this study was to specifically look only at those who did do Christmas shopping online. Respondents who indicated they did not engage in this activity at all could therefore be immediately eliminated from the survey.

6.2.1 Self-Efficacies

Generic questions about levels of confidence and skill in use of the Internet, online shopping and shopping within the domain, as detailed in Section 5.1.1, were converted into specific closed questions and made domain-specific where possible (Table 6.1).

Question/Statement	Answer Type
I am comfortable using my computer to access the Internet.	Agree-Disagree (Likert Scale)
I would never buy a product on the Internet that I wasn't already familiar with.	Agree-Disagree (Likert Scale)
I like to try new things out on the computer myself, rather than ask someone to help me.	Agree-Disagree (Likert Scale)
How often do you find online shopping confusing?	Frequency (Likert Scale)
How often did you have problems finding what you were looking for?	Frequency (Likert Scale)
When did you first start Christmas shopping on the Internet?	Year
How many years have you been using the Internet?	Year

Table 6.1 – Questions on Self-Efficacies for Christmas Shopping Survey

6.2.2 Beliefs

Generic questions about levels of belief towards vendors, brands, online shopping, vendors and subsequent reactions to persuasive cues, as detailed in Section 5.1.2, were converted into specific closed questions and made domain-specific where possible (Table 6.2).

Question/Statement	Answer Type
I rely on my debit/credit card provider to guarantee the security of my online shopping.	Agree-Disagree (Likert Scale)
Customer reviews on a vendor's site are a good way to determine if the vendor is reliable.	Agree-Disagree (Likert Scale)
Buying something over the phone with a debit or credit card is safer than on the Internet.	Agree-Disagree (Likert Scale)
Even if they have exactly what I want at the price I want, I won't do business with a site if I don't like the vendor.	Agree-Disagree (Likert Scale)
I'm more comfortable buying from an online vendor that also has a shop or other terrestrial presence.	Agree-Disagree (Likert Scale)

Question/Statement	Answer Type
I feel more comfortable buying from a vendor I've never used before if I like the appearance of their website.	Agree-Disagree (Likert Scale)
I like to try new or unusual sites when Christmas shopping on the Internet.	Agree-Disagree (Likert Scale)
How many of the sites you used for Christmas shopping were ones you were already registered with?	None to Most/All
How often did you use a site's "Gift Suggestions" to get ideas for your Christmas shopping?	Frequency (Likert Scale)
How often do you store your credit/debit cards at your favourite online shopping sites?	Frequency (Likert Scale)
Did you receive newsletters or other promotional email from online vendors offering Christmas shopping suggestions?	List of options

Table 6.2 – Questions on Beliefs for Christmas Shopping Survey

6.2.3 Economics

Generic questions about attitudes towards pricing, price competitiveness, comparison shopping and how value-for-money is determined, as detailed in Section 5.1.3, were converted into specific closed questions and made domain-specific where possible (Table 6.3).

Question/Statement	Answer Type
When considering where to buy a gift, price is my first consideration.	Agree-Disagree (Likert Scale)
I like to thoroughly compare prices before I decide where to purchase any particular Christmas gift.	Agree-Disagree (Likert Scale)
Shopping on the Internet saves me money over going to the shops.	Agree-Disagree (Likert Scale)
I'm less concerned about sticking to a budget during Christmas than I normally would.	Agree-Disagree (Likert Scale)
Finding the perfect gift for someone in my family is more important than sticking to my budget.	Agree-Disagree (Likert Scale)

Question/Statement	Answer Type
How often did you use the lowest cost delivery options instead of the fastest one?	Frequency (Likert Scale)
How often did you use a price comparison engine such as Pricerunner, Kelkoo, etc.?	Frequency (Likert Scale)

Table 6.3 – Questions on Economics for Christmas Shopping Survey

6.2.4 Affects

Generic questions about degree of pleasure, sense of control and desire for new experiences from online shopping, as detailed in Section 5.1.4, were converted into specific closed questions and made domain-specific where possible (Table 6.4).

Question/Statement	Answer Type
Doing my Christmas shopping on the Internet gives me more choice.	Agree-Disagree (Likert Scale)
Christmas shopping on the Internet is not as much fun as doing it in person.	Agree-Disagree (Likert Scale)
I love using online auction sites such as eBay.	Agree-Disagree (Likert Scale)
I like to try new or unusual sites when Christmas shopping on the Internet.	Agree-Disagree (Likert Scale)
I like the Christmas shopping atmosphere on the high street	Agree-Disagree (Likert Scale)
I tend to give people the same types of Christmas gifts each year.	Agree-Disagree (Likert Scale)
I feel more in control of my Christmas shopping when I do it online.	Agree-Disagree (Likert Scale)

Table 6.4 – Questions on Affects for Christmas Shopping Survey

6.2.5 Connections

Generic questions about influences from terrestrial shopping, encounters with other online vendors or previous encounters with the same vendor, as detailed in Section 5.1.5, were converted into specific closed questions and made domain-specific where possible (Table 6.5).

Question/Statement	Answer Type
Where did/will you buy most of your Christmas presents in 2006?	Choice of online, High Street, etc.
Where did you used to do most of your Christmas shopping in the years before you started shopping on the Internet?	Choice of High Street, Catalogue, etc.
I'm more comfortable buying from an online vendor that also has a shop or other terrestrial presence.	Agree-Disagree (Likert Scale)
I prefer to get ideas for Christmas presents by looking in catalogues or shops rather than on the Internet.	Agree-Disagree (Likert Scale)
Buying Christmas presents online hasn't affected the types of things I buy.	Agree-Disagree (Likert Scale)
Next year I expect do as much of my Christmas shopping on the Internet as possible.	Agree-Disagree (Likert Scale)
I like shopping at sites I've used before because that way I don't have to re-enter all my payment and address details.	Agree-Disagree (Likert Scale)
Which products would you prefer to buy in person rather than on the Internet?	Select one or more product types

Table 6.5 – Questions on Connections for Christmas Shopping Survey

6.2.6 Logistics

Generic questions about searching, selection, payment and delivery, as detailed in Section 5.1.6, were converted into specific closed questions and made domain-specific where possible (Table 6.6).

Question/Statement	Answer Type
Did you use the Internet to buy any of the following types of Christmas gifts in 2006?	Select one or more product types
I like to browse the various categories on a site when doing my Christmas shopping.	Agree-Disagree (Likert Scale)

Question/Statement	Answer Type
When searching for something to buy, I like to examine several search results even if the first one is exactly what I want.	Agree-Disagree (Likert Scale)
I prefer to go to a website by typing in its address rather than using bookmarks or favourites.	Agree-Disagree (Likert Scale)
If someone has told me exactly what they want for Christmas, I'm happy to buy the item without doing any product research.	Agree-Disagree (Likert Scale)
How often did you have problems finding what you were looking for?	Frequency (Likert Scale)
How often did you use a site's "Gift Suggestions" to get ideas for your Christmas shopping?	Frequency (Likert Scale)
I won't buy a CD or music download for someone as a Christmas present online unless I can listen to a sample first.	Agree-Disagree (Likert Scale)
How often did you use the lowest cost delivery options instead of the fastest one?	Frequency (Likert Scale)
Did you make a list before starting your Christmas shopping?	Yes/No/Don't Remember
Which of the following Search Engines do you normally use when shopping online?	List of search engines
How many of the sites you used for Christmas shopping were ones you were already registered with?	None to Most/All
I paid for most of my online Christmas shopping by…	List of payment types
When you receive emails confirming a purchase, when do you delete the message from your Inbox?	List of possible actions
During your 2006 Christmas shopping, what did you do if you weren't sure whether an item you found on the Internet would be suitable for an intended recipient?	List of possible actions

Question/Statement	Answer Type
How many people were on your Christmas list in 2006?	Number

Table 6.6 – Questions on Logistics for Christmas Shopping Survey

6.2.7 Environments

Generic questions about place and space, time, psychographic profiles, hardware/software used and reactions to site design, as detailed in Section 5.1.7, were converted into specific closed questions and made domain-specific where possible (Table 6.7).

Question/Statement	Answer Type
Christmas shopping is easier to do when I'm on my own.	Agree-Disagree (Likert Scale)
I prefer to have someone along with me when I go Christmas shopping.	Agree-Disagree (Likert Scale)
How many people were on your Christmas list in 2006?	Number
I like shopping at sites I've used before because that way I don't have to re-enter all my payment and address details.	Agree-Disagree (Likert Scale)
I feel more comfortable buying from a vendor I've never used before if I like the appearance of their website.	Agree-Disagree (Likert Scale)
I would not buy something from a website that didn't have a picture of the product.	Agree-Disagree (Likert Scale)
If a site offers the product I want at the price I want, then I don't care what their website looks like.	Agree-Disagree (Likert Scale)
If I already know what to get someone, I don't care whether the site has a picture of the product or not.	Agree-Disagree (Likert Scale)
When shopping on the Internet, pictures of the product are important when deciding whether it would be a suitable gift for someone.	Agree-Disagree (Likert Scale)
Being able to Christmas shop at any time of day is important to me.	Agree-Disagree (Likert Scale)

Question/Statement	Answer Type
I am comfortable doing several things at the same time, including online shopping.	Agree-Disagree (Likert Scale)
I prefer not be distracted when Christmas shopping online, as I need to concentrate on what I'm doing.	Agree-Disagree (Likert Scale)
When shopping online, do you ever search for more than one item at the same time?	Yes/No/Don't Remember
What time of day did you do most of your online Christmas shopping?	List of times of day
If I'd had the time, I would have preferred to do all my Christmas shopping in person rather than online.	Agree-Disagree (Likert Scale)
If it wasn't for the crowds, I would have preferred to do all my Christmas shopping in person rather than online.	Agree-Disagree (Likert Scale)
How often did you do your Christmas shopping from your home computer?	Frequency (Likert Scale)
How often do you find yourself adjusting the font size, window size or overall appearance of an online shopping web page?	Frequency (Likert Scale)
How often do you add shopping sites to your Favorites or Bookmarks?	Frequency (Likert Scale)
Do you use multiple browser windows or tabs when shopping online?	Yes/No/Don't Remember
Which browser do you use most often when shopping on the Internet?	List of browsers
What part of the world do you originally come from?	List of countries or continents

Table 6.7 – Questions on Environments for Christmas Shopping Survey

A series of questions designed to build a demographic profile of the respondents were also asked, specifically gender, age, country of origin and primary occupation.

6.3 Administering the Survey

The survey was built and administered online using the QuestionPro platform (www.questionpro.com) and ran from December 2006 – January 2007. Respondents were solicited from within the UK and the opportunity to win £50 gift certificates was offered in order to encourage participation and valid responses, as respondents needed to identify themselves to be eligible for the prize draw.

A total of 184 responses were received and the complete data are detailed in Appendix D.

6.4 Interpreting the Results

In interpreting the results of this survey, the first thing to keep in mind is that these questions were intended to identify patterns of behaviours and attitudes as part of an overall exploration of behaviour, rather than provide precise quantitative measurements along any particular continuum. This meant that, for those parts of the survey in which respondents were asked to indicate agreement/disagreement with particular statements, the information would come from determining what proportions of respondents agreed, disagreed, or felt neutral towards those statements and building patterns of responses relevant to any one particular e-CF theme. For this reason responses of Agree or Strongly Agree were aggregated into one category, responses of Disagree or Strongly Disagree into a second category and Neutral into a third category. A similar process was used in processing questions about frequency of behaviour, with responses of Frequently or Almost Always aggregated into one category, Never or Rarely into a second category and Sometimes into a third category. These responses, along with data from the other closed questions, were then sorted into e-CF categories to see what, if any, patterns or issues emerged.

6.4.1 Self-Efficacies

Table 6.8 shows a summary of responses relating to the e-CF theme of Self-Efficacies.

Question/Statement	Responses
I am comfortable using my computer to access the Internet.	96.7% Agreed 0.5% Disagreed 2.7% Neutral
I like to try new things out on the computer myself, rather than ask someone to help me.	71.4% Agreed 9.3% Disagreed 19.2% Neutral
How many years have you been using the Internet?	0.6% <2 years 12.2% 3-5 years 87.3% 6+ years
How often do you find online shopping confusing?	6.1% Frequently 40.3% Sometimes 53.6% Rarely
How often did you have problems finding what you were looking for?	7.2% Frequently 41.4% Sometimes 51.4% Rarely
When did you first start Christmas shopping on the Internet?	7.1% this year 16.4% last year 76.5% ≤ 2004
I would never buy a product on the Internet that I wasn't already familiar with.	19.7% Agreed 55.7% Disagreed 24.6% Neutral
If someone has told me exactly what they want for Christmas, I'm happy to buy the item without doing any product research.	57.7% Agreed 16.5% Disagreed 25.8% Neutral

Table 6.8 – Summary of Responses for Self-Efficacies (Christmas Shoppers)

The responses to statements about levels of comfort, experimentation and years of experience using the Internet indicate that respondents had relatively high levels of technical knowledge. As only 19.7% expressed concerns about buying unfamiliar products online or conducting product research for requested items, this would indicate that most respondents were reasonably comfortable with buying products online regardless of their previous levels of product knowledge. Given that 76.5% of respondents had 2 or more years experience in online Christmas shopping, this would

suggest that respondents were reasonably experienced in online shopping. However, 40.3% reported occasional confusion with online shopping and 48.6% encountered problems finding items.

6.4.2 Beliefs

Table 6.9 shows a summary of responses relating to the e-CF theme of Beliefs.

Question/Statement	Answer Type
I rely on my debit/credit card provider to guarantee the security of my online shopping.	57.4% Agreed 25.1% Disagreed 17.5% Neutral
Buying something over the phone with a debit or credit card is safer than on the Internet.	7.6% Agreed 61.5% Disagreed 30.8% Neutral
I'm more comfortable buying from an online vendor that also has a shop or other terrestrial presence.	50.8% Agreed 27.3% Disagreed 21.9% Neutral
I feel more comfortable buying from a vendor I've never used before if I like the appearance of their website.	53.3% Agreed 21.3% Disagreed 21.9% Neutral
Customer reviews on a vendor's site are a good way to determine if the vendor is reliable.	55.8% Agreed 17.7% Disagreed 26.5% Neutral
Even if they have exactly what I want at the price I want, I won't do business with a site if I don't like the vendor.	64.8% Agreed 12.1% Disagreed 23.1% Neutral
I like to try new or unusual sites when Christmas shopping on the Internet.	30.4% Agreed 23.8% Disagreed 45.9% Neutral
How many of the sites you used for Christmas shopping were ones you were already registered with?	66.6% ≥ Half 25.1% < Half 7.7% None

Question/Statement	Answer Type
How often did you use a site's "Gift Suggestions" to get ideas for your Christmas shopping?	2.8% Frequently 17.2% Sometimes 80% Rarely
How often do you store your credit/debit cards at your favourite online shopping sites?	33.7% Frequently 35.4% Sometimes 30.9% Rarely
Did you receive newsletters or other promotional email from online vendors offering Christmas shopping suggestions?	13.1% Didn't 21.3% Did but didn't read them 65.6% Did and read at least some

Table 6.9 – Summary of Responses for Beliefs (Christmas shoppers)

Given that 57.4% actively relied on their card provider for security, plus 61.5% did not perceive use of cards online to be any more risky than over the telephone, this would indicate that transactional security was not a decisive factor in the behaviour of most of the respondents. However, a third of them consistently did not store details with vendors. While nearly a third liked to experiment with their choice of vendors, two-thirds of the respondents preferred to stick with ones they had used in the past. 50.8% were more comfortable using a new vendor if the vendor also had a terrestrial presence and 53.8% were more comfortable using a new vendor if they liked the appearance of the website. Only 20% of respondents claimed to use site Gift Suggestions, 55.8% valued customer reviews as a means to assess vendor reliability and 65.6% received and read at least some vendor newsletters, suggesting that respondents were perhaps more likely to examine persuasive clues if they held some form of control over the media.

6.4.3 Economics

Table 6.10 shows a summary of responses relating to the e-CF theme of Economics.

Question/Statement	Answer Type
When considering where to buy a gift, price is my first consideration.	52.5% Agreed 23% Disagreed 24.6% Neutral
I like to thoroughly compare prices before I decide where to purchase any particular Christmas gift.	55.7% Agreed 22.4% Disagreed 21.9% Neutral
Shopping on the Internet saves me money over going to the shops.	70% Agreed 7.2% Disagreed 22.8% Neutral
I'm less concerned about sticking to a budget during Christmas than I normally would.	51.7% Agreed 34.1% Disagreed 14.3% Neutral
Finding the perfect gift for someone in my family is more important than sticking to my budget.	58.2% Agreed 15.9% Disagreed 25.8% Neutral
How often did you use the lowest cost delivery options instead of the fastest one?	74% Frequently 16.6% Sometimes 9.4% Rarely
How often did you use a price comparison engine such as Pricerunner, Kelkoo, etc.?	21% Frequently 27.6% Sometimes 51.4% Rarely

Table 6.10 – Summary of Responses for Economics (Christmas shoppers)

34.1% of respondents were actively concerned about sticking to a budget at Christmas and 15.9% did not think finding a "perfect" gift for someone was more important than sticking to their budget, suggesting that most respondents were less cost-conscious in their gift shopping that they would normally be, but 74% did consider cost when requesting delivery. Price was the first consideration in choosing where to shop for 52.5% of respondents and 70% perceived online shopping as being cheaper than terrestrial. 55.7% of respondents engaged in price comparison activity. However, 51.4% rarely or never used price comparison engines, suggesting that these engines were not a particularly popular means of price comparisons.

6.4.4 Affects

Table 6.11 shows a summary of survey responses concerning the e-CF theme of Affects.

Question/Statement	Answer Type
Doing my Christmas shopping on the Internet gives me more choice.	70.9% Agreed 7.7% Disagreed 21.4% Neutral
Christmas shopping on the Internet is not as much fun as doing it in person.	20.9% Agreed 57.7% Disagreed 21.4% Neutral
I love using online auction sites such as eBay.	27.3% Agreed 50.3% Disagreed 22.4% Neutral
I like to try new or unusual sites when Christmas shopping on the Internet.	30.4% Agreed 23.8% Disagreed 45.9% Neutral
I like the Christmas shopping atmosphere on the high street	36.8% Agreed 44% Disagreed 19.2% Neutral
I tend to give people the same types of Christmas gifts each year.	33% Agreed 47.8% Disagreed 19.2% Neutral
I feel more in control of my Christmas shopping when I do it online.	45.6% Agreed 18.7% Disagreed 35.7% Neutral

Table 6.11 – Summary of Responses for Affects (Christmas shoppers)

As 44% of respondents did not like the high street Christmas shopping atmosphere and 57.7% did not think Christmas shopping online was any less "fun" than in person, these results indicate that for a large section of the respondents Christmas shopping was either not a particularly pleasurable activity overall, or at least shopping online did not particularly detract from the experience. 27.3% enjoyed online auction sites but 50.3% disagreed with this sentiment. While 45.6% of respondents saw online shopping as providing more control, 35.7% were neutral. However, 70.9% saw online shopping as providing more choice, suggesting that feelings of empowerment derived more from

perceptions of greater choice online rather than from control of the shopping experience.

6.4.5 Connections

Table 6.12 shows a summary of survey responses concerning the e-CF theme of Connections.

Question/Statement	Answer Type
Levels of Christmas shopping in 2006?	62.3% ≥ Half 37.7% < Half
Where did/will you buy most of your Christmas presents in 2006?	46.4% Online 33.9% High Street 2.2% Catalogues 17.5% Other
Where did you used to do most of your Christmas shopping in the years before you started shopping on the Internet?	62.3% High Street 2.2% Catalogues 35.5% Other
I'm more comfortable buying from an online vendor that also has a shop or other terrestrial presence.	50.8% Agreed 27.3% Disagreed 21.9% Neutral
I prefer to get ideas for Christmas presents by looking in catalogues or shops rather than on the Internet.	23.3% Agreed 50% Disagreed 26.7% Neutral
Buying Christmas presents online hasn't affected the types of things I buy.	57.6% Agreed 27.5% Disagreed 14.8% Neutral
I like shopping at sites I've used before because that way I don't have to re-enter all my payment and address details.	62.8% Agreed 14.8% Disagreed 22.4% Neutral
Next year I expect do as much of my Christmas shopping on the Internet as possible.	56.6% Agreed 18.7% Disagreed 24.7% Neutral
Which products would you prefer to buy in person rather than on the Internet?	73.2% Clothing 53% Groceries

Table 6.12 – Summary of Responses for Connections (Christmas shoppers)

While 62.3% expected to do half or more of their Christmas shopping online, 46.4% said they would purchase half or more of their Christmas gifts online, suggesting that a substantial amount of Christmas purchases were still made through terrestrial channels even though only 23.3% of respondents said they preferred to use terrestrial channels to get ideas for gift purchases. Combined with the fact that 50.8% were more comfortable buying from online vendors that also had a terrestrial presence, this would suggest that terrestrial experiences continued to be a major influence in respondent behaviour and just 27.5% of respondents felt shopping online had affected the types of purchases made. At 2.2%, catalogues were not a popular channel for respondents either now or previously. Avoiding having to re-enter delivery details was a particular factor in shopping with previously used sites, as cited by 62.8% of respondents. The strongest preference for terrestrial shopping was clothes at 73.2%, followed by groceries at 53%.

6.4.6 Logistics

Table 6.13 shows a summary of responses concerning the e-CF theme of Logistics.

Question/Statement	Answer Type
Did you use the Internet to buy any of the following types of Christmas gifts in 2006?	74.3% Books 61.2% Music/Film 45.4% Electronics
I like to browse the various categories on a site when doing my Christmas shopping.	57.5% Agreed 16.5% Disagreed 25.8% Neutral
When searching for something to buy, I like to examine several search results even if the first one is exactly what I want.	72.9% Agreed 13.3% Disagreed 13.8% Neutral
I prefer to go to a website by typing in its address rather than using bookmarks or favourites.	27.8% Agreed 41% Disagreed 31.1% Neutral
If someone has told me exactly what they want for Christmas, I'm happy to buy the item without doing any product research.	57.7% Agreed 16.5% Disagreed 25.8% Neutral
How often did you have problems finding what you were looking for?	7.2% Frequently 41.4% Sometimes 51.4% Rarely

Question/Statement	Answer Type
I won't buy a CD or music download for someone as a Christmas present online unless I can listen to a sample first.	17.6% Agreed 60.4% Disagreed 22% Neutral
How often did you use a site's "Gift Suggestions" to get ideas for your Christmas shopping?	2.8% Frequently 17.2% Sometimes 80% Rarely
How often did you use the lowest cost delivery options instead of the fastest one?	74% Frequently 16.6% Sometimes 9.4% Rarely
Did you make a list before starting your Christmas shopping?	50.3% Yes 48.6% No
Which of the following Search Engines do you normally use when shopping online?	96.7% Google
How many of the sites you used for Christmas shopping were ones you were already registered with?	66.6% ≥ Half 25.1% < Half 7.7% None
I paid for most of my online Christmas shopping by…	55.7% Credit Card 40.4% Debit Card 3.8% PayPal
When you receive emails confirming a purchase, when do you delete the message from your Inbox?	43.2% Upon delivery 24% Never 19.1% After filing
During your 2006 Christmas shopping, what did you do if you weren't sure whether an item you found on the Internet would be suitable for an intended recipient?	39.3% Searched customer reviews 27.3% Didn't encounter this problem 21.3% Bought item anyway

Question/Statement	Answer Type
How many people were on your Christmas list in 2006?	19.9% ≤ 6 32.8% 7-10 36.6% 11+

Table 6.13 – Summary of Responses for Logistics (Christmas shoppers)

These results indicate that respondents relied heavily on Google (97.6%) to find where to buy items. 69.4% of respondents usually had 7 or more people to buy presents for and viewed the Internet as a venue they could use for shopping (rather than merely conduct buying transactions), as demonstrated by their preferences for browsing categories within a site (57.5%) and their very strong preferences for examining multiple search results (72.9%). While they were evenly divided as to whether they made gift shopping lists beforehand (50.3% versus 48.6%), 80% didn't rely on a vendor's gift suggestions, didn't feel the need to do much further exploration if they'd received a specific gift request from an intended recipient (57.7%) and 51.4% didn't encounter problems finding what they wanted. When they were unsure as to what to buy, the most popular strategy was to check customer reviews (39.3%) but 27.3% claimed they always knew what they were looking for anyway. Books were the most popular purchase (74.3%), followed by CDs/DVDs (61.2%) and Electronic items (45.4%). 96.2% paid for purchases with credit/debit cards and 74% used the lowest cost delivery method rather than the quickest one. 43.2% held onto order confirmation emails until delivery confirmation, while 51.1% held on to them indefinitely.

6.4.7 Environments

Table 6.14 shows a summary of survey responses concerning the e-CF theme of Environments.

Question/Statement	Answer Type
Christmas shopping is easier to do when I'm on my own.	81.9% Agreed 9.3% Disagreed 8.7% Neutral
I prefer to have someone along with me when I go Christmas shopping.	15% Agreed 50.3% Disagreed 22.8% Neutral

Question/Statement	Answer Type
How many people were on your Christmas list in 2006?	19.9% ≤ 6 32.8% 7-10 36.6% 11+
I like shopping at sites I've used before because that way I don't have to re-enter all my payment and address details.	62.8% Agreed 14.8% Disagreed 22.4% Neutral
I would not buy something from a website that didn't have a picture of the product.	71.6% Agreed 14.2% Disagreed 14.2% Neutral
I feel more comfortable buying from a vendor I've never used before if I like the appearance of their website.	53.3% Agreed 21.3% Disagreed 21.9% Neutral
If a site offers the product I want at the price I want, then I don't care what their website looks like.	36.5% Agreed 37% Disagreed 26.5% Neutral
If I already know what to get someone, I don't care whether the site has a picture of the product or not.	34.7% Agreed 52.5% Disagreed 13.3% Neutral
Being able to Christmas shop at any time of day is important to me.	83.5% Agreed 6.6% Disagreed 9.9% Neutral
When shopping on the Internet, pictures of the product are important when deciding whether it would be a suitable gift for someone.	84.5% Agreed 15.9% Disagreed 25.8% Neutral
If I'd had the time, I would have preferred to do all my Christmas shopping in person rather than online.	13.1% Agreed 69.2% Disagreed 17.6% Neutral
If it wasn't for the crowds, I would have preferred to do all my Christmas shopping in person rather than online.	21.6% Agreed 56.1% Disagreed 22.2% Neutral

Question/Statement	Answer Type
I am comfortable doing several things at the same time, including online shopping.	84.6% Agreed 9.9% Disagreed 5.5% Neutral
I prefer not be distracted when Christmas shopping online, as I need to concentrate on what I'm doing.	27.5% Agreed 37.4% Disagreed 35.2% Neutral
How often did you do you Christmas shopping from your home computer?	56.9% Frequently 29.8% Sometimes 13.3% Rarely
How often do you find yourself adjusting the font size, window size or overall appearance of an online shopping web page?	6.1% Frequently 15.5% Sometimes 78.5% Rarely
How often do you add shopping sites to your Favorites or Bookmarks?	22.1% Frequently 42% Sometimes 35.9% Rarely
Do you use multiple browser windows or tabs when shopping online?	72.7% Yes 24% No
When shopping online, do you ever search for more than one item at the same time?	59% Yes 39.9% No
Which browser do you use most often when shopping on the Internet?	47.5% IE 39.3% Firefox
What time of day did you do most of your online Christmas shopping?	40.4% Evenings 26.2% No particular time 12.6% During breaks at work
Country of Origin	74.9% UK/Ireland

Table 6.14 – Summary of Responses for Environments (Christmas shoppers)

These results indicate that while respondents had quite a few people on their shopping lists (69.4% had 7 or more) and consequently many people influencing their purchases, respondents felt that shopping alone was easier (81.9%) and only 15% preferred to have someone along. The most popular venue for online gift shopping was

at home (56.9% did so frequently). The most popular time for online gift shopping was during the evening (40.4%), but 26.2% shopped at no particular time of day. Regardless of what time they shopped, being able to shop at any time of day was considered to be important to 85.3% of respondents. Avoiding crowds was slightly more of a factor in the decision not to shop terrestrially (21.6%) as opposed to lack of time (13.1%), but neither issue was a particularly strong factor overall. Polychronic activity was common (84.6%), including searching for multiple items simultaneously (59%). Respondents were mostly from the UK/Ireland (74.9%). At 39.3%, Firefox was nearly as popular a browser as IE (47.5%). 71.6% would not buy an item unless there was a picture, 84.5% said pictures were an important factor in decision making and 52.5% rated pictures as important even if they already knew what they were buying. Site appearance was considered important when encountering a new site by 53%, although 36.5% said appearance was less important if the product and price offering were favourable. Preference was given to sites that retained payment and delivery details from previous visits (62.8%) and 78.5% of respondents generally did not adjust their displays to change font size or other aspects when online shopping. Site bookmarking was not particularly popular, with only 22.1% doing so on a regular basis and 35.9% never or rarely bookmarking.

6.5 The Respondent Profile

In examining the above responses, the picture that emerged of the Online Christmas shoppers who responded to this survey was one of consumers confident in their use of the Internet and online shopping who weren't afraid to purchase unfamiliar products online. Their perceived levels of risk for online shopping were not particularly high, but they liked to stick to known vendors and were generally resistant to persuasive clues. Terrestrial Christmas shopping was not seen as a particularly enjoyable or pleasurable activity, but online Christmas shopping was seen as providing more choice. Previous terrestrial and online experiences and expectations often affected choice of online vendor. While terrestrial shopping was not particularly seen as a venue for obtaining ideas for gift purchases, a substantial amount of purchases were still being made in person. Google was heavily used to find both items and vendors and multiple search results and customer reviews were often examined before making decisions. Browsing categories within a site was also popular, but there was little incentive to do much product research if the respondent had received a specific gift request. Purchases were made using credit or debit cards and confirmation email was generally retained at least until delivery. Online Christmas gift shopping was a solitary activity performed during the evening or at night, usually at home but sometimes from the office. Polychronic

activity was common, including shopping for multiple items simultaneously. The appearance of a site was important in judging whether to use an unfamiliar vendor, but price and product availability could compensate. Sites that retained payment and delivery details from previous visits were preferred and pictures of prospective purchases were considered extremely important in decision making, regardless of familiarity with the vendor or product.

6.6 Patterns and Issues

In comparing the results of the survey against the ethnographic data collected during the development of the e-CF as detailed in Appendix B, a number of patterns are discovered and reinforced. Both groups had similar levels of technical, shopping and product expertise, similar attitudes towards budgets and comparison shopping and similar feelings of pleasure and empowerment. Both groups were influenced by previous experiences and expectations, particularly in choice of vendor and both groups regularly used search engines, particularly Google, in their Christmas shopping. Christmas shopping was a solitary activity and multi-tasking (including shopping for multiple items simultaneously) was common. Site appearance was important in evaluating vendors, but price and product availability could override this concern.

There are also a number of differences between the survey and ethnographic cohorts. Firstly, while both the survey and ethnographic cohorts presented themselves as relatively impervious to Gift Suggestions and other persuasive cues, it was observed that the ethnographic cohort often did respond to this type of media and many made purchasing decisions accordingly. Another area where discrepancies existed between described and observed behaviours related to issues of trust versus cost. Both cohorts had various strategies for assessing trustworthiness of online vendors, including familiarity, disposition towards the vendor and site appearance, but many ethnographic participants would abandon these strategies if a vendor offered particularly attractive pricing. These results support Miller *et al* (1998) and Solomon *et al* (2002) in their contention that there can be major differences in consumer's descriptions of their actions versus observed behaviour and demonstrate that Limayem (2000) is correct in pointing out the limitations of relying on self-reported behaviour when studying online shopping. As Underhill (2000) points out about terrestrial research, "There are surveys that do ask for information about what they [consumers] saw and did inside a store, but the answers are often suspect". There is no reason to believe that this same disparity doesn't also occur online.

6.7 Summary

This case study depicted the development of an e-CF based survey on online Christmas gift shopping and the subsequent picture of the online consumer operating in this domain in the UK in 2006. At first glance this picture presented a relatively straightforward depiction of a consumer confident in their use of the Internet and online shopping, a consumer who valued the choices available online but was also influenced by terrestrial experiences and a multi-tasker who relied on site appearance, particularly pictures, to make product and vendor decisions. However, comparing this picture with data gathered from observation of actual shopping activity suggests that there may be some discrepancies between the consumer's depiction of him/herself as an independent and cautious online shopper and the need for assistance in gift purchasing and obtaining value for money. The implications of this finding for interaction design strategies will be discussed further in Chapter 9.

7 The e-CF in Action – Exploring Online Grocery Shopping

> "I like having the food and knowing what I'm getting and preparing it."
>
> Grocery shopping study participant GP7

Chapter 6 described the first of three case studies in exploring online consumer behaviour, the UK Online Christmas Shopper, using the e-CF to construct a survey of online Christmas shoppers. This chapter will now describe the second case study in exploring online consumer behaviour using the e-CF as the framework for exploration. This case study concerns the development of an e-CF based survey on online grocery shopping in the UK and the pictures that emerged both of online grocery shoppers and those who preferred to do their grocery shopping terrestrially.

7.1 Background

The goal of this case study was, like the Christmas shopping case study detailed in Chapter 6, to conduct an e-CF based exploration into the behaviour of online consumers doing grocery shopping on the Internet, in order to demonstrate how the e-CF could facilitate comprehension of behaviour within this domain. In particular, this e-CF based exploration was expected to provide insight into differences between online consumers who also purchased groceries online and those who preferred to do their grocery shopping terrestrially.

As with the Christmas shopping case study, a survey was used as the tool for data gathering in order to collect data on a larger scale than would be possible with other methodologies. By again using the e-CF as the framework for generating this survey and analysing its results, the expectation was that pictures could be built of both online grocery shoppers (OGS) and those that did not purchase groceries online (NOGS). These pictures would in turn not only provide insights into the patterns and issues affecting online grocery shoppers, but also what differentiated OGS from NOGS.

7.2 The Survey

To construct the survey, the e-CF based questions described in Chapter 5 were used as the basis for developing survey questions, with adaptations for grocery-shopping specific issues where relevant. The construction of the survey questions and statements was similar to that described in Section 6.2, with the same Likert scales used to measure

agreement with statements or frequency of behaviour as in 6.2. However, unlike the Christmas study where all respondents were asked the same questions, the grocery shopping survey branched into two parts depending on whether were identified as OGS or NOGS, allowing the development of questions specific to each group. A total of 62 closed questions and two open questions were developed, each designed to cover one or more of the e-CF themes.

From the grocery-shopping data gathered during the construction of the e-CF, as detailed in Appendix A, it was anticipated that online grocery shoppers were also likely to engage in terrestrial grocery shopping. This, along with the desire to collect similar data from both OGS and NOGS where applicable, meant that the construction and flow of this survey were more complex than that of the Christmas shoppers described in Chapter 6. In order to make clear the flow and branching of the survey, this section will describe the questions and statements in the order they were actually given to the respondents, with the relevant e-CF themes in square brackets.

7.2.1 Questions Asked of All Respondents

The first question asked of all respondents was as follows:

Which of the following statements most closely describes your current level of grocery shopping?
I do most of the grocery shopping for my household
I share grocery shopping duties with other members of my household
I occasionally go grocery shopping
I never do the grocery shopping

In addition to exploring the themes of Self-Efficacy and Environments this question acted as a primary filter, as those respondents who indicated that they never did the grocery shopping could then be immediately eliminated from the rest of the survey.

All respondents were then asked several questions concerning gender, age, occupation and household size so that demographic profiles could be built, with household size also used to explore the theme of Environments. The next set of questions (Table 7.1) was asked of all respondents to explore behaviour and attitudes relating to both general online shopping and terrestrial grocery shopping.

Question/Statement	Answer Type
Are there particular religious, ethical or health considerations that affect your grocery shopping? [Environments]	Yes/No
Where do you do most of your non-Internet food shopping? [Connections, Environments]	List of venues
On average, how often do you buy your groceries from a supermarket, grocer or any place other than the Internet? [Connections, Environments]	List of time frames
Aside from groceries, have you ever bought any of the following types of products online? [Self Efficacies]	List of products
Do you store your credit/debit card details at your favourite online shopping sites? [Beliefs]	Yes/No/Don't Remember
Do you ever find online shopping confusing? [Self-Efficacies]	Frequency (Likert Scale)
How often do you cook meals from scratch? [Self-Efficacies]	Frequency (Likert Scale)

Table 7.1 – Questions on online and grocery shopping behaviour (all respondents)

These questions were followed by a set of questions (Table 7.2) to explore the extent of various behaviours manifested during terrestrial grocery shopping.

Question/Statement	Answer Type
How often do you make a list before shopping? [Logistics]	Frequency (Likert Scale)
How often do you try new products or brands? [Affects]	Frequency (Likert Scale)
How often do you buy something on impulse? [Logistics]	Frequency (Likert Scale)
How often do you do your grocery shopping alone? [Environments]	Frequency (Likert Scale)
Do you tend to buy the same brands or types of groceries over and over? [Affects, Logistics]	Frequency (Likert Scale)

Question/Statement	Answer Type
How often do you compare prices before deciding where to buy your groceries? [Economics]	Frequency (Likert Scale)
How often do you study the label on a new item before purchasing? [Logistics]	Frequency (Likert Scale)

Table 7.2 – Questions on terrestrial grocery shopping behaviour (all respondents)

The next set of questions (Table 7.3) was asked of all respondents to explore attitudes towards food and food shopping in general.

Question/Statement	Answer Type
I am comfortable using my computer to access the Internet [Self-Efficacies]	Agree-Disagree (Likert Scale)
I like to try new things out on the computer myself, rather than ask someone to help me [Self-Efficacies]	Agree-Disagree (Likert Scale)
Being able to grocery shop at any time of day is important to me [Environments]	Agree-Disagree (Likert Scale)
Buying organic or Fair Trade products is important to me [Environments]	Agree-Disagree (Likert Scale)
Food shopping is boring [Affects]	Agree-Disagree (Likert Scale)
I enjoy cooking for my family and friends [Affects, Self-Efficacies]	Agree-Disagree (Likert Scale)
Grocery shopping is easier to do if I'm on my own [Environments]	Agree-Disagree (Likert Scale)
I don't like someone else picking out my groceries for me [Affects]	Agree-Disagree (Likert Scale)
I enjoy food shopping [Affects]	Agree-Disagree (Likert Scale)
I like to try different places to buy my groceries [Beliefs]	Agree-Disagree (Likert Scale)

Table 7.3 – Questions on attitudes towards food shopping (all respondents)

7.2.2 Questions Asked of OGS Only

Through a filtering question, respondents were then split into two groups – those who currently did any part of their grocery shopping online (OGS) and those who did not currently do so (NOGS). The OGS were then asked questions specifically about their online grocery shopping behaviour (Table 7.4).

Question/Statement	Answer Type
Where do you do most of your online grocery shopping? [Connections, Environments]	List of vendors
Overall, where do you buy most of your groceries? [Connections]	List of venues
On average, how often do you buy your groceries online? [Environments]	List of timescales
If you need to go to a supermarket, do you go to the same vendor that provides your online grocery shopping? [Beliefs, Connections]	Frequency (Likert Scale)
How often do you check out Special offers or items on sale? [Beliefs]	Frequency (Likert Scale)
How often do you do your online grocery shopping from your home computer? [Environments]	Frequency (Likert Scale)
How often do you time your online grocery shopping to take advantage of cheaper delivery charges? [Economics]	Frequency (Likert Scale)
How often do you use the Search box to find an item? [Logistics]	Frequency (Likert Scale)
How often do you scan or browse categories to find an item? [Logistics]	Frequency (Likert Scale)
How often do you use the "Notes" or "Instructions" feature? [Logistics]	Frequency (Likert Scale)
How often do you use the "My Favourites" or "Last Order" feature? [Logistics]	Frequency (Likert Scale)
How often do you have problems finding items? [Logistics]	Frequency (Likert Scale)

Question/Statement	Answer Type
How often do you make a list before starting? [Logistics]	Frequency (Likert Scale)
How often do you try new products or brands? [Affects]	Frequency (Likert Scale)
How often do you buy something on impulse? [Logistics]	Frequency (Likert Scale)
How often do you do your online grocery shopping alone? [Environments]	Frequency (Likert Scale)

Table 7.4 – Questions on behaviour when grocery shopping online (OGS only)

The OGS were then presented with a series of statements about their online grocery shopping attitudes and experiences (Table 7.5).

Question/Statement	Answer Type
Buying Groceries online saves me money [Economics]	Agree-Disagree (Likert Scale)
I don't like being interrupted when grocery shopping online [Environments]	Agree-Disagree (Likert Scale)
I feel more in control of my grocery shopping when I do it online [Affects]	Agree-Disagree (Likert Scale)
I don't mind talking to people while doing my online grocery shopping [Environments]	Agree-Disagree (Likert Scale)
Buying groceries online hasn't affected the types of things I buy [Connections]	Agree-Disagree (Likert Scale)
My favourite online grocery site is easy to use [Environments]	Agree-Disagree (Likert Scale)
I'm more likely to buy something new if I see it in a supermarket or shop than online [Affects]	Agree-Disagree (Likert Scale)
The best thing about buying groceries online is that I spend less money than I would in a supermarket [Economics]	Agree-Disagree (Likert Scale)

Question/Statement	Answer Type
I miss being able to pick out my own produce when shopping online [Affects]	Agree-Disagree (Likert Scale)
If I had the time, I would prefer to buy my groceries in person rather than online [Affects]	Agree-Disagree (Likert Scale)
I prefer not to be distracted when online grocery shopping, as I need to concentrate on what I'm doing [Environments]	Agree-Disagree (Likert Scale)

Table 7.5 –Attitudes towards online grocery shopping (OGS only)

OGS were then asked to rate various aspects of the last online grocer they used (Table 7.6).

Question/Statement	Answer Type
Ease of use [Environments]	Poor-Excellent (Likert Scale)
Quality of Products [Affects]	Poor-Excellent (Likert Scale)
Product Selection [Affects]	Poor-Excellent (Likert Scale)
Quality of Service [Affects]	Poor-Excellent (Likert Scale)
Web Site appearance [Environments]	Poor-Excellent (Likert Scale)
Price [Economics]	Poor-Excellent (Likert Scale)

Table 7.6 – Ratings of most recently used online grocer (OGS only)

Finally, the OGS were asked specific questions concerning their last online grocery purchase (Table 7.7).

Question/Statement	Answer Type
Do you store your credit/debit card details on that site? [Beliefs]	Yes/No/Don't Remember
Do you store your login details for that site? [Logistics]	Yes/No/Don't Remember
Do you have the web address of the site stored in Bookmarks or Favourites? [Logistics]	Yes/No/Don't Remember

Table 7.7 – Questions on last online grocery purchase (OGS only)

7.2.3 Questions Asked of NOGS Only

The non-online grocery shoppers (NOGS) were not asked any of the questions in tables 7.4-7.7 but instead were asked further questions concerning their terrestrial grocery shopping habits (Table 7.8).

Question/Statement	Answer Type
How often do you use credit or debit cards to pay for your food shopping? [Logistics]	Frequency (Likert Scale)
How often do you check out Special offers or items on sale? [Beliefs]	Frequency (Likert Scale)
How often do you use the supermarket nearest your home? [Beliefs]	Frequency (Likert Scale)
Do you try to do your grocery shopping at a particular time of day? [Environments]	Frequency (Likert Scale)
Do you try to do your grocery shopping on a particular day of the week? [Environments]	Frequency (Likert Scale)

Table 7.8 – Questions on terrestrial grocery shopping (NOGS only)

Finally, the NOGS were asked whether they had ever tried to buy groceries online and, if yes, why they did not continue to do so or, if they never had tried, why not.

7.3 Administering the survey

As in Chapter 6, this survey was built and administered online using the QuestionPro platform (www.questionpro.com) and ran from February to April 2006. Respondents were solicited from within the UK and the opportunity to win a £50 gift certificate was

offered in order to encourage participation and valid responses, as respondents needed to identify themselves to be eligible for the prize draw.

Of the 103 responses to the survey, 46 identified themselves as doing some part of their grocery shopping online (OGS) while 57 said they did not use online grocery shopping at this time (NOGS). The complete results of the survey are detailed in Appendix B.

7.4 Interpreting the Results for Online Grocery Shoppers

As in the case study of online Christmas shopping described in Chapter 6, this was a broad-based survey designed to provide information from determining what proportions of respondents agreed with various statements or engaged in particular behaviours, rather than from precise quantitative measurements along any particular continuum. Like the survey results in Chapter 6, responses of Agree/Strongly Agree, Disagree/Strongly Disagree and Neutral were aggregated into three categories, as were Frequently/Almost Always, Never/Rarely and Sometimes. To explore behaviour in the Online Grocery Shopping Domain, the first step was to analyse the responses of the OGS, by mapping a summary of the survey responses of the OGS to each of the e-CF themes.

7.4.1 Self-Efficacies

Table 7.9 shows a summary of OGS' responses relating to the e-CF theme of Self-Efficacies.

Question/Statement	Answer Type
I am comfortable using my computer to access the Internet	97.8% Agreed 2.2% Disagreed 0% Neutral
I like to try new things out on the computer myself, rather than ask someone to help me	73.3% Agreed 4.4% Disagreed 22.2% Neutral

Question/Statement	Answer Type
Which of the following statements most closely describes your current level of grocery shopping?	69.6% Did most of the shopping 23.9% Shared shopping duties with others 6.5% Shopped occasionally
I enjoy cooking for my family and friends	78.3% Agreed 8.6% Disagreed 13% Neutral
How often do you cook meals from scratch?	78.3% Frequently 17.4% Sometimes 4.3% Rarely
Aside from groceries, have you ever bought any of the following types of products online?	93.5% Books 87% Music/Films 78.3% Travel 0% nothing
Do you ever find online shopping confusing?	2.2% Frequently 39.1% Sometimes 58.7% Rarely

Table 7.9 – Summary of Responses for Self-Efficacies (OGS)

The responses to statements about levels of comfort (97.8%) and self-sufficiency (73.3%) using the Internet and computers indicate that the OGS had relatively high levels of technical self-efficacy. Given that 78.3% of OGS cooked and enjoyed cooking, combined with the fact that 69.6% did most of the household grocery shopping, suggests that they were knowledgeable about their household grocery needs and products. All OGS engaged in other forms of online shopping, but a considerable proportion (39.1%) did occasionally encounter difficulties in shopping online.

7.4.2 Beliefs

Table 7.10 shows a summary of OGS' responses relating to the e-CF theme of Beliefs.

Question/Statement	Answer Type
Do you store your credit/debit card details at your favourite online shopping sites?	34.8% Frequently 23.9% Sometimes 41.3% Rarely
Do you store your credit/debit card details on that [last used] site?	50% Yes 45.5% No
If you need to go to a supermarket, do you go to the same vendor that provides your online grocery shopping?	40.9% Frequently 38.6% Sometimes 20.5% Rarely
I like to try different places to buy my groceries	30.4% Agreed 34.7% Disagreed 34.8% Neutral
How often do you check out Special offers or items on sale [online]?	44.4% Frequently 28.9% Sometimes 26.7% Rarely

Table 7.10 – Summary of Responses for Beliefs (OGS)

Half the OGS were willing to trust an online supermarket in storing their card details (50%), but a substantial number (41.3%) followed a strategy of not storing card details regardless of who the vendor was. OGS were evenly split on whether they liked to try different vendors (30.4% versus 34.7%) and less than half (40.9%) consistently used the same vendor for terrestrial and online grocery shopping. Less than half of the OGS (44.4%) consistently examined vendor offers and a quarter (26.7%) said they didn't at all.

7.4.3 Economics

Table 7.11 shows the summary of survey responses concerning the e-CF theme of Economics.

Question/Statement	Answer Type
How often do you compare prices before deciding where [terrestrially] to buy your groceries?	23.9% Frequently 23.9% Sometimes 52.5% Rarely
How often do you time your online grocery shopping to take advantage of cheaper delivery charges?	48.8% Frequently 15.6% Sometimes 35.6% Rarely
Buying groceries online saves me money	40.9% Agreed 29.5% Disagreed 29.5% Neutral
The best thing about buying groceries online is that I spend less money than I would in a supermarket	42.9% Agreed 19.1% Disagreed 38.1% Neutral
[Rating of prices from last online vendor used]	78.6% ≥Good 21.4% Acceptable

Table 7.11 – Summary of Responses for Economics (OGS)

Slightly less than half (40.9%) of OGS saw buying groceries online as particularly cost-effective, but overall they were satisfied with the pricing of their online supermarket (78.6% Good or better). Only 23.9% consistently engaged in price comparisons between terrestrial vendors, suggesting that perceptions of vendor price dispersion was not a strong issue.

7.4.4 Affects

Table 7.12 shows the summary of survey responses concerning the e-CF theme of Affects.

Question/Statement	Answer Type
Food shopping is boring	26.1% Agreed 41.3% Disagreed 32.6% Neutral
I enjoy cooking for my family and friends	78.3% Agreed 8.6% Disagreed 13% Neutral

Question/Statement	Answer Type
I enjoy food shopping	58.7% Agreed 6.5% Disagreed 34.8% Neutral
How often do you try new products or brands? [terrestrially]	22.2% Frequently 66.7% Sometimes 11.1% Rarely
How often do you try new products or brands? [online]	20% Frequently 53.3% Sometimes 26.7% Rarely
Do you tend to buy the same brands or types of groceries over and over? [terrestrially]	84.4% Frequently 15.6% Sometimes
I'm more likely to buy something new if I see it in a supermarket or shop than online	73.8% Agreed 11.9% Disagreed 14.3% Neutral
I don't like someone else picking out my groceries for me	50% Agreed 17.4% Disagreed 32.6% Neutral
I feel more in control of my grocery shopping when I do it online	23.8% Agreed 38.1% Disagreed 38.1% Neutral
I miss being able to pick out my own produce when shopping online	71.4% Agreed 7.1% Disagreed 21.4% Neutral
[Rating of product quality from last online vendor used]	61.9% ≥Good 28.6% Acceptable 9.5% Below Avg.
[Rating of service quality from last online vendor used]	73.8% ≥Good 23.8% Acceptable 2.4% Below Avg.

Question/Statement	Answer Type
[Rating of product selection from last online vendor used]	71.4% ≥Good 28.6% Acceptable 0% Below Avg.

Table 7.12 – Summary of Responses for Affects (OGS)

These responses indicate that food shopping and meal preparation were generally pleasurable activities (58.7% and 78.3% respectively). While levels of satisfaction with product selection, the quality of online grocery products and service were generally good (71.4%, 61.9% and 73.8% respectively), 71.4% missed being able to pick out their own produce online and 73.8% said they were more likely to buy new products terrestrially, suggesting that online food shopping was seen as detracting from feelings of control and the ability to experiment.

7.4.5 Connections

Table 7.13 shows the summary of responses concerning the e-CF theme of Connections.

Question/Statement	Answer Type
On average, how often do you buy your groceries from a supermarket, grocer or any place other than the Internet?	69.6% ≥weekly 13% bi-weekly 17.4% ≤monthly
Where do you do most of your non-Internet food shopping?	32.6% Tesco 15.2% Sainsburys 8.7% Waitrose 6.5% Asda
Where do you do most of your online grocery shopping?	69.6% Tesco 13% Sainsburys 8.7% Ocado/Waitrose 2.2% Asda
Overall, where do you buy most of your groceries?	40% Online 53.3% Supermarket 6.6% Other

Question/Statement	Answer Type
If you need to go to a supermarket, do you go to the same vendor that provides your online grocery shopping?	40.9% Frequently 38.6% Sometimes 20.5% Rarely
Buying groceries online hasn't affected the types of things I buy	65.1% Agreed 20.9% Disagreed 14% Neutral

Table 7.13 – Summary of Responses for Connections (OGS)

These responses indicate that OGS continued to engage in both online and terrestrial grocery shopping, with most of their groceries purchased terrestrially (60%). 63% did most of their terrestrial shopping from one of the four major UK supermarket chains, while 93.5% did most of their online shopping from one of the four chains. Tesco was the most popular online vendor (69.6%) but only 32.6% also used them terrestrially, suggesting (in the absence of any data on distances) that terrestrial shopping preferences were not a particular influence on choice of online vendor or vice versa. Buying groceries online was not seen as affecting types of purchases by 65.1% of respondents.

7.4.6 Logistics

Table 7.14 shows the summary of responses concerning the e-CF theme of Logistics.

Question/Statement	Answer Type
How often do you make a list before shopping? [terrestrially]	55.6% Frequently 17.8% Sometimes 26.7% Rarely
How often do you make a list before shopping? [online]	35.6% Frequently 20% Sometimes 44.4% Rarely
Do you have the web address of the [last grocery] site stored in Bookmarks or Favorites?	47.7% Yes 47.7% No
Do you store your login details for that [last grocery] site?	65.9% Yes 31.8% No
How often do you use the "My Favourites" or "Last Order" feature?	63.6% Frequently 15.9% Sometimes 20.5% Rarely

Question/Statement	Answer Type
How often do you use the Search box to find an item?	35.5% Frequently 44.4% Sometimes 20% Rarely
How often do you scan or browse categories to find an item?	44.5% Frequently 37.8% Sometimes 17.8% Rarely
How often do you have problems finding items?	17.8% Frequently 53.5% Sometimes 28.9% Rarely
How often do you buy something on impulse? [terrestrially]	37.8% Frequently 46.7% Sometimes 15.6% Rarely
How often do you buy something on impulse? [online]	13.6% Frequently 43.2% Sometimes 43.2% Rarely
How often do you study the label on a new item before purchasing? [terrestrially]	58.7% Frequently 23.9% Sometimes 17.4% Rarely
How often do you use the "Notes" or "Instructions" feature?	13.6% Frequently 13.6% Sometimes 72.7% Rarely

Table 7.14 – Summary of Responses for Logistics (OGS)

These results indicate that OGS were evenly split in their use of bookmarks versus other means to navigate to their online supermarket, but 65.9% did store their registration details. Selection was usually done based on what had been purchased in previous visits (63.6%), 15.6% never/rarely made impulse purchases terrestrially versus 43.2% online, suggesting that impulse purchasing decreased when shopping online. Browsing the site for items was slightly more popular than using the site Search function (44.5% versus 35.5%). Regardless of how selections were made, a substantial number of OGS (53.5%) did occasionally encounter problems with finding items and 17.8% frequently did so. Little use was made of features to provide picking instructions on specific items, with 72.7% stating they rarely/never did this.

7.4.7 Environments

Table 7.15 shows the summary of responses concerning the e-CF theme of Environments.

Question/Statement	Answer Type
Which of the following statements most closely describes your current level of grocery shopping?	69.6% Did most of the shopping 23.9% Shared shopping duties with others 6.5% Shopped occasionally
Household size	17.4% 1 60.8% 2-3 21.7% 4 or more
How often do you do your [terrestrial] grocery shopping alone?	68.9% Frequently 20% Sometimes 15.6% Rarely
How often do you do your [online] grocery shopping alone?	81.8% Frequently 9.1% Sometimes 9.1% Rarely
Grocery shopping is easier to do if I'm on my own	69.6% Agreed 10.9% Disagreed 19.6% Neutral
How often do you do your online grocery shopping from your home computer?	68.9% Frequently 20% Sometimes 11.1% Rarely
Where do you do most of your online grocery shopping?	69.6% Tesco 13% Sainsburys 8.7% Ocado/Waitrose 2.2% Asda

Question/Statement	Answer Type
Buying organic or Fair Trade products is important to me	51.1% Agreed 17.8% Disagreed 31.1% Neutral
Are there particular religious, ethical or health considerations that affect your grocery shopping?	37% Yes 63% No
On average, how often do you buy your groceries from a supermarket, grocer or any place other than the Internet?	69.6% ≥weekly 13% bi-weekly 17.4% ≤monthly
On average, how often do you buy your groceries online?	15.6% ≥weekly 24.4% bi-weekly 60% ≤monthly
Being able to grocery shop at any time of day is important to me	73.9% Agreed 6.5% Disagreed 19.6% Neutral
If I had the time, I would prefer to buy my groceries in person rather than online	57.1% Agreed 21.4% Disagreed 21.4% Neutral
I don't like being interrupted when grocery shopping online	52.3% Agreed 9.1% Disagreed 38.% Neutral
I don't mind talking to people while doing my online grocery shopping	34.9% Agreed 30.3% Disagreed 34.9% Neutral
I prefer not to be distracted when online grocery shopping, as I need to concentrate on what I'm doing	31% Agreed 26.2% Disagreed 42.9% Neutral
My favourite online grocery site is easy to use	79.1% Agreed 2.3% Disagreed 18.6% Neutral

Question/Statement	Answer Type
[Rating of ease of use of last online vendor used]	61.9% ≥Good 35.7% Acceptable 2.4% Below Avg.
[Rating of website appearance of last online vendor used]	78.6% ≥Good 21.4% Acceptable 0% Below Avg.

Table 7.15 – Summary of Responses for Environments (OGS)

These results indicate that most (60.8%) OGS tended to live in small households of 2-3 people and 69.6% were responsible for most of the grocery shopping in their household. 68.9% usually terrestrially shopped alone, rising to 81.8% online, indicating that grocery shopping was very much a solitary activity regardless of channel and was generally done from a home computer (68.9%), usually with Tesco.com (69.6%). Lifestyle and value considerations were factors in grocery shopping for many, with 51.1% concerned about purchasing Fair Trade or Organic products and 37% affected by religious, ethical or health considerations. Online grocery shopping was often done once a month or less (60%) while terrestrially shopping was done at least weekly (69.6%). As 57.1% said if they had the time they would prefer to buy groceries in person and 73.9% said being able to grocery shop at any time of day was important, this suggested that food shopping was seen primarily as a means of managing time. 52.3% of OGS did not like being interrupted when doing their online grocery shopping but only 31% had particular problems with distractions and 34.9% didn't mind talking to people while shopping. 61.9% rated ease of use of the last grocery site used as good or better and 78.6% rated site appearance as good or better, suggesting that there was general satisfaction with site ease of use and appearance.

7.5 The OGS Profile

In summary the picture that emerges of the online grocery shoppers who responded to the survey was one of consumers highly confident in their use of the Internet and in their grocery product knowledge, with slightly less confidence in their ability to successfully find what they want online. They were slightly more willing to trust their online supermarket than other online vendors, which is hardly surprising given that the vast majority do their online grocery shopping with vendors who operate national supermarket chains. They tended to combine both online and terrestrial grocery shopping but purchased most of their groceries terrestrially. They viewed food selection

and preparation as a pleasurable experience and felt that this experience was diminished online. They saw fewer opportunities to experiment and felt that they couldn't exercise as much control over specific product selection as they would have liked. They were time-conscious and wished they had the time to do more of their grocery shopping in person. Which grocery items they bought online were driven by previous purchases with little impulse buying. They used both search features and category browsing to find additional items, occasionally encountering problems in doing so. Despite concerns about losing control of product selection, they did not take advantage of site features that would allow them to provide specific instructions on product selection. They did their online grocery shopping once a month or less, usually from home, for small households and shopped alone. They liked to grocery shop at any time of day and didn't like being interrupted during this activity. They had no particular worries about the usability or site appearance of their online grocer.

7.6 Patterns and Issues – OGS

In comparing the results of the survey against the ethnographic data collected during the development of the e-CF, as detailed in Appendix A, a number of patterns are discovered and reinforced. Both groups had similar high levels of product knowledge and involvement, used combinations of terrestrial and online channels for their grocery shopping, used different vendors for terrestrial and online, were concerned about loss of control in product selection and lack of opportunities for experimentation online, saw online grocery shopping as gaining control over time, occasionally encountered problems finding items and despite not taking advantage of many site features neither group had any particular concerns about site design or ease of use. Given that the major difference between the two groups was how often they did online grocery shopping (several times a month versus monthly or less), it would appear that these patterns are not changed by the level of familiarity with or frequency of online grocery shopping.

There were a number of differences between the survey and ethnographic cohorts which suggest limitations within the survey. Firstly, the levels of technical efficacy were more uniform in the survey cohort but this result was quite likely to be a consequence of administering the survey online, which limited the pool of participants to those comfortable with using the Internet and participating in online surveys. The pronounced disinclination amongst the ethnography cohort to use the same vendor for online and terrestrial grocery shopping was weaker in the survey cohort, though still an issue. This may be a result of geographic distribution as the ethnography participants were known to live in areas where there were a variety of terrestrial food vendors nearby, including

all the major supermarket chains who also operate the online sites, while geographic information was not collected for the survey respondents.

7.7 Interpreting the Results for Non-Online Grocery Shoppers

Over half of the responses to the survey identified themselves as those who were not online grocery shoppers (NOGS) and the responses of this group were initially analysed by mapping their responses to the e-CF themes.

7.7.1 Self-Efficacies

Table 7.16 shows the summary of NOGS' responses relating to the e-CF theme of Self-Efficacies.

Question/Statement	Answer Type
I am comfortable using my computer to access the Internet	94.6% Agreed 3.6% Disagreed 1.8% Neutral
I like to try new things out on the computer myself, rather than ask someone to help me	68.4% Agreed 10.6% Disagreed 21.1% Neutral
Which of the following statements most closely describes your current level of grocery shopping?	49.1% Did most of the shopping 40.4% Shared shopping duties with others 10.5% Shopped occasionally
I enjoy cooking for my family and friends	77.2% Agreed 5.3% Disagreed 17.5% Neutral
How often do you cook meals from scratch?	85.7% Frequently 7.1% Sometimes 7.1% Rarely

Question/Statement	Answer Type
Aside from groceries, have you ever bought any of the following types of products online?	87.7% Books 86% Music/Films 86% Travel 3.5% nothing
Do you ever find online shopping confusing?	7.3% Frequently 41.8% Sometimes 50.9% Rarely

Table 7.16 – Summary of Responses for Self-Efficacies (NOGS)

The responses to statements about levels of comfort (94.6%) and self-sufficiency (68.4%) using the Internet and computers indicate that the NOGS had relatively high levels of technical self-efficacy. Given that 77.2% of NOGS cooked and enjoyed cooking, this suggests that they were knowledgeable about grocery products but only half (49.1%) did most of the household grocery shopping. 96.5% of NOGS engaged in other forms of online shopping, but a considerable proportion (41.8%) did occasionally encounter difficulties in shopping online.

7.7.2 Beliefs

Table 7.17 shows the summary of NOGS' responses concerning the e-CF theme of Beliefs.

Question/Statement	Answer Type
Do you store your credit/debit card details at your favourite online shopping sites?	20% Frequently 25.5% Sometimes 54.5% Rarely
I like to try different places to buy my groceries	31.6% Agreed 38.6% Disagreed 29.9% Neutral
How often do you use the supermarket nearest your home?	67.9% Frequently 16.1% Sometimes 16.1% Rarely
How often do you check out Special offers or items on sale?	68.5% Frequently 24.6% Sometimes 7% Rarely

Table 7.17 – Summary of Responses for Beliefs (NOGS)

Slightly more than half the NOGS (54.5%) followed a strategy of not storing card details regardless of who the vendor was, indicating some concerns about security of card details but not enough to stop them from shopping online. NOGS were almost evenly split on whether they liked to try different vendors (31.6% versus 38.6%) and most (67.9%) consistently used the supermarket nearest their home. Most NOGS (68.5%) consistently examined vendor offers.

7.7.3 Economics

Table 7.18 shows the summary of NOGS' responses concerning the e-CF theme of Economics.

Question/Statement	Answer Type
How often do you compare prices before deciding where to buy your groceries?	14.1% Frequently 26.3% Sometimes 59.6% Rarely

Table 7.18 – Summary of Responses for Economics (NOGS)

As 59.6% of NOGS did not price compare, this suggests that their perceptions of vendor price dispersion were not a particular factor in their grocery shopping habits.

7.7.4 Affects

Table 7.19 shows the summary of NOGS' responses concerning the e-CF theme of Affects.

Question/Statement	Answer Type
Food shopping is boring	28.1% Agreed 43.8% Disagreed 28.1% Neutral
I enjoy cooking for my family and friends	77.2% Agreed 5.3% Disagreed 17.5% Neutral
I enjoy food shopping	49.1% Agreed 21.1% Disagreed 29.8% Neutral
How often do you try new products or brands?	28.1% Frequently 61.4% Sometimes 10.5% Rarely

Question/Statement	Answer Type
Do you tend to buy the same brands or types of groceries over and over?	71.9% Frequently 28.1% Sometimes
I don't like someone else picking out my groceries for me	59.6% Agreed 10.5% Disagreed 29.8% Neutral

Table 7.19 – Summary of Responses for Affects (OGS)

These responses indicate that NOGS had mixed feelings about food shopping however, meal preparation was a generally pleasurable activity (77.2%). Although 71.9% said they usually bought the same products and brands consistently NOGS would experiment with new products or brands and 28.1% did so frequently. Most NOGS (59.6%) didn't like the idea of other people picking out their groceries, suggesting that they were adverse to the prospect of relinquishing control over their grocery product selection.

7.7.5 Connections

Table 7.20 shows a summary of NOGS' responses concerning the e-CF theme of Connections.

Question/Statement	Answer Type
Have you ever tried to buy your groceries online?	31.6% Yes 68.4% No
[open question – reasons for never trying]	58.9% Want to control product selection

Table 7.20 – Summary of Responses for Connections (NOGS)

Less than one third of the NOGS (31.6%) had tried online grocery shopping and for most of the others (58.9%), the concerns about relinquishing control of their grocery selections were the factor that kept them from trying online grocery shopping. Of those who had tried, a variety of reasons were given for not continuing, ranging from issues of control to problems using the site but there appeared to be no pattern or overriding reason for their reluctance to continue.

7.7.6 Logistics

Table 7.21 shows a summary of NOGS' responses concerning the e-CF theme of Logistics.

Question/Statement	Answer Type
How often do you make a list before shopping?	50.9% Frequently 29.8% Sometimes 19.3% Rarely
How often do you buy something on impulse?	40.4% Frequently 47.4% Sometimes 12.3% Rarely
How often do you study the label on a new item before purchasing?	64.9% Frequently 17.5% Sometimes 17.5% Rarely
How often do you use credit or debit cards to pay for your food shopping?	89.1% Frequently 3.6% Sometimes 7.8% Rarely

Table 7.21 – Summary of Responses for Logistics (NOGS)

These results indicate that half (50.9%) of the NOGS regularly made lists when they shopped terrestrially. Most (64.9%) would read labels when deciding on new purchases and only a small number (12.3%) avoided impulse purchasing. Most (89.1%) regularly used credit or debit cards to pay for purchases.

7.7.7 Environments

Table 7.22 shows a summary of NOGS' responses concerning the e-CF them of Environments.

Question/Statement	Answer Type
Which of the following statements most closely describes your current level of grocery shopping?	49.1% Did most of the shopping 40.4% Shared shopping duties with others 10.5% Shopped occasionally
Household size	21.1% 1 66.7% 2-3 11.2% 4 or more

Question/Statement	Answer Type
How often do you do your grocery shopping alone?	56.2% Frequently 24.6% Sometimes 19.3% Rarely
Where do you do most of your non-Internet food shopping?	36.8% Sainsburys 26.3% Tesco 15.8% Asda 5.3% Morrisons
Grocery shopping is easier to do if I'm on my own	59.6% Agreed 14.1% Disagreed 26.3% Neutral
Buying organic or Fair Trade products is important to me	45.6% Agreed 43.9% Disagreed 10.6% Neutral
Are there particular religious, ethical or health considerations that affect your grocery shopping?	40.4% Yes 59.6% No
On average, how often do you buy your groceries from a supermarket, grocer or any place other than the Internet?	75.4% ≥weekly 15.8% bi-weekly 8.8% ≤monthly
Being able to grocery shop at any time of day is important to me	50.9% Agreed 24.6% Disagreed 24.6% Neutral
Do you try to do your grocery shopping at a particular time of day?	29.8% Frequently 29.8% Sometimes 40.4% Rarely
Do you try to do your grocery shopping on a particular day of the week?	26.4% Frequently 15.8% Sometimes 57.9% Rarely

Table 7.22 – Summary of Responses for Environments (OGS)

These results indicate that most (66.7%) NOGS tended to live in small households of 2-3 people and half (49.1%) were responsible for most of the grocery shopping in their household. 56.2% usually shopped alone, most (59.6%) agreed that shopping alone was easier. NOGS were split on importance of organic or Fair Trade purchasing (45.6% felt

it important, 43.9% did not) and most (59.6%) were not affected by religious, ethical or health considerations. Sainsburys was the most popular venue (36.8%) followed by Tesco at 26.3%. Grocery shopping was usually done at least once a week (75.4%). 57.9% did not normally grocery shop on a particular day of the week, 40.4% did not normally shop at a particular time of day and just half (50.9%) considered grocery shopping at any time of day to be important.

7.8 The NOGS Profile

The picture that emerges of the non-online grocery shopper in this survey is of a consumer who is knowledgeable about using the Internet and food shopping, with some concerns about their online shopping abilities. They used online shopping for non-food products but were concerned about using credit/debit cards. They responded positively to persuasive cues and tended to use the same vendor on a regular basis but this loyalty was governed by proximity. They tend to make shopping lists beforehand, regularly buy the same products and read the labels on new products as part of their decision making. Only half were primarily responsible for the household grocery shopping and their households were small in size. They shopped alone, at least once a week, using the supermarket nearest their home. Most did not shop on a set schedule and were split on issues of how important shopping at any time of day was to them.

7.9 OGS and NOGS – Differences and Similarities

In comparing the OGS to the NOGS a number of minor variations in habits and attitudes were uncovered. NOGS have slightly less confidence in successfully shopping online, were responsible for less of the household grocery shopping, were less willing to store credit/debit card information with online vendors, were more responsive to persuasive cues, less inclined to enjoy food shopping, more concerned about controlling product selection, slightly more willing to experiment and slightly less concerned about shopping alone (but still preferred to do so).

However, there were also two notable variations between the OGS and NOGS. One variation was in attitudes towards storing credit/debit card details with favourite online vendors. At first glance, this would seem to lend some support to those researchers who see trust as an primary factor in online consumer behaviour, were it not for the fact that a) the online supermarkets in the UK are operated by the major terrestrial chains, b) the NOGS engaged in other forms of online shopping and c) half the OGS didn't store their card details with their online supermarket. While the NOGS may be more suspicious about credit card usage online, this is not what keeps them from buying groceries online.

What may be of key importance is where the biggest difference between two groups lay – in their attitude towards being able to control *when* they shopped. This attitude, along with their concerns about lack of control, less opportunity to experiment and responses to the statement "If I had the time, I would prefer to buy my groceries in person rather than online" suggests that the online grocery shopper is indeed the "time-starved" consumer described by Bellman *et al* (1999) and consequently a somewhat unwilling one who would much rather do the grocery shopping in person but doesn't have the time.

7.10 Online Grocery Shopping and Online Christmas Shopping

Before ending this exploration of online grocery shopping, it is well worth comparing the results of this exploration with that of the online Christmas shopper depicted in the previous chapter to see what further insights can be gained.

Common patterns and aspects between the two case study groups included high levels of technical self-efficacy, a certain caution about credit/debit card usage online that made both groups circumspect in storing their data with online vendors but did not preclude them from online shopping, a propensity to do more domain-related shopping terrestrially than online and a tendency to shop at home and alone. Key differences between the two case study groups were in product knowledge/involvement, price comparison activity, reactions to persuasive media, degree of experimentation, feelings of control and levels of polychronic activity. These patterns and differences point to a number of considerations for the design of interactive shopping environments which will be discussed in Chapter 9 of this thesis

Ironically, one key issue that the two groups shared was an overall disinclination towards online grocery shopping regardless of whether they engaged in this activity or not – over half the Christmas respondents said they preferred not to buy groceries online, over half the grocery respondents did not buy groceries online and most of the grocery respondents who did buy online said they would rather buy terrestrially. This would tend to support the previous conclusion that one of the most telling characteristics of the online grocery shopper is that he/she is indeed a reluctant one.

7.11 Summary

This case study depicted the development of an e-CF based survey on online grocery shopping and the resultant pictures of UK online consumers who did and did not buy groceries online. Despite some of the limitations of this survey a picture emerged of a

consumer who was confident in their use of the Internet and engaged in other forms of online shopping, was knowledgeable about what they were buying, enjoyed grocery shopping and was consequently torn between wanting the experience of buying groceries in person and the convenience of buying them online. This picture supports the argument made in Chapter 2 of this thesis – online consumer behaviour is as complex, diverse and non-linear as its terrestrial counterpart and its interactive nature only serves to add to its complexity.

8 The e-CF in Action – Exploring Online Travel Shopping

> "I thought it [flight price comparison engine] was the greatest thing 4-5 months ago but realised that first of all it's not looking at all the discounted airfares."
>
> Online travel shopping participant TP3

In chapter 2 of this thesis the argument was made for a framework for exploring online consumer behaviour. Chapters 3 and 4 detailed the development of such a framework, the e-CF and Chapter 5 discussed several ways in which the e-CF could be used in studying various aspects of online consumer behaviour. Chapters 6 and 7 detailed two case studies in exploring online consumer behaviour through the use of e-CF based surveys. This chapter describes the third case study in exploring online consumer behaviour using the e-CF as the framework for exploration.

However, unlike the survey-based case studies described in Chapters 6 and 7, this case study will take a designer position and explore the designed artefacts used by online consumers. As argued by Carroll (2000) and Preece *et al* (2002), such an examination of the artefacts created by interaction designers can reveal vital information concerning the assumptions made by designers about the target audience and the space in which it is anticipated they will operate. For this case study the e-CF was therefore used to develop a set of questions to explore site designers' assumptions and perceptions of the online leisure travel consumer, producing profiles of the online consumer as perceived by the site designer. These profiles were then compared against existing literature as well as the data gathered during construction of the e-CF.

Online leisure travel shopping is very popular in the UK, accounting for a quarter of online shopping spend in 2006 (Palmer & Rigby, 2007). As Bloch and Segev pointed out (1997), the leisure travel shopper would quite naturally be attracted to a channel that offered convenient ways to access this information. However, this shopping domain often presents a particularly intricate set of challenges to the online consumer, who needs to consider a multitude of choices and decision criteria in making even the most basic purchase (Standing *et al*, 2004; Ricci & Del Missier, 2004). To understand how well this need is supported, the e-CF was used to explore three typical sites used by the UK online travel shopper – RyanAir, GNER and EasyHotel – and build profiles of the types of online consumers the developers of these sites anticipated as their typical users.

8.1 The Site Exploration Process

Chapter 5 detailed a set of general questions developed from the e-CF as a basis for exploring e-Commerce websites in order to build profiles of the consumer as perceived by the site designers. These questions were further refined to focus on leisure travel-related areas where appropriate (see table 8.1) and applied to three popular UK online travel websites representing three common travel services – flights, train tickets and accommodation. The examinations were done by the author of this thesis in February-May of 2007 on a Windows XP system using Fire Fox.

e-CF Theme	Site Questions
Self-Efficacies	What level of Internet experience/expertise is needed?
	What level of travel experience/expertise is needed?
	What level of familiarity with online travel shopping is needed?
Beliefs	What assurances about transactional security are provided?
	What assurances about the vendor or booking are provided?
	How does the site differentiate itself from competitor sites? How is consumer loyalty recognised and rewarded?
	How are new consumers encouraged to use the site?
	What newsletters are offered and how are consumers made aware of these?
	What banners, sponsored sites and other persuasive clues are presented?
Economics	How are prices displayed? How and when is the total cost (inclusive of tax, etc.) displayed?
	What price comparison facilities are offered? How are perceptions of price dispersion addressed?
Affects	What entertaining features are present? How is pleasure encouraged?
	What sorts of controls over display and site functionality are offered? What sorts of control over selection/composition is offered?
	How are new/special offerings conveyed?
Connections	Is the site part of or affiliated to a terrestrial entity? How is that affiliation manifested?

e-CF Theme	Site Questions
	Is the site part of or affiliated to other online sites? How is that affiliation manifested? What recognition of previous site visits is offered? How does the site compare to competitor sites?
Logistics	Does the site have a memorable URL? What is the search engine ranking?
	What search/selection facilities are available?
	How are search results displayed?
	Are there options to generate or import preferences? How flexible are search criteria?
	How is product information displayed? How are Terms & Conditions displayed?
	What payment facilities are offered?
	How is site registration handled?
	How are purchase confirmations displayed/sent?
	What ancillary services are offered and at what stages of the purchase?
Environments	What facilities exist to send information or results of searches to other people?
	Is the site fully operational 24/7? What site features could not reasonably be used from a workplace computer? From an Internet café?
	What assumptions are made about the user's lifestyle, cultures or values?
	Are there applications that conflict with use of the site? How and when is an inactive user timed out? What features or transitions require the user's full attention? What additional windows/tabs/pop-ups are generated?
	What particular applications/browsers are required? What particular hardware configurations are required?
	What features are offered to control site display?
	What personalisation features are offered?
	What multi-media is offered and why?

Table 8.1 – e-CF questions for exploring leisure travel sites

8.2 Exploring Ryan Air

Ryan Air was chosen for this exploration as representative of the discount short-haul carriers operating out of the UK. A sample of their homepage is shown in Figure 8.1.

Figure 8.1 – Ryan Air homepage

8.2.1 Self-Efficacies

The site does not rely on any particular level of technical expertise or any particular knowledge about travelling abroad. Information on destinations is offered and only a very basic familiarity with online shopping is assumed.

8.2.2 Beliefs

Assurances are offered throughout as to the reliability of the vendor and the transaction, ranging from SSL icons to pop-ups explaining basic issues about safety of cookies. The site offers a lowest fares guarantee but otherwise does not particularly distinguish itself from competitors. There are no loyalty schemes or special inducements for new visitors. There are a number of promotions offered throughout the site on flights and ancillary travel services. Users can register to receive regular email newsletters on special offers

or can download an application to get continuous live updates on offers to selected destinations.

8.2.3 Economics

Prices for promotions are displayed inclusive of all taxes and fees. However, during the booking process, only the basic ticket price is displayed until all selections have been completed. Prices can only be compared when there are multiple flights to the same destination on the same day, but a lowest fares guarantee is offered.

8.2.4 Affects

A number of casino and lottery-type games are offered on the site. A number of links are displayed to encourage visits to new and unusual destinations. There is no facility for constructing travel packages and some ancillary services, such as insurance, are added on by default and must be specifically deselected prior to purchase.

8.2.5 Connections

The site promotes a number of products and services from a variety of online and terrestrial vendors, some of which are not travel-related. Visitors can register to store their contact details but the site provides no other recognition of prior visits. The site is much busier and displays far more advertising than its competitors.

8.2.6 Logistics

The site has a memorable URL but will only have a high search engine ranking if the search is by company name. Searches for specific flights are done from the homepage and must include departure point, destination, dates and number of passengers. Once the departure point is selected the available destinations are updated automatically, but not vice versa. If any part of the search does not produce a match the user can increment the date one day at a time or start a new search. Results are displayed in chronological order and although the default price display is in Pound Sterling the user can select price display in a number of different European currencies. There is no destination browsing as such, but there is a limited timetable function. Payment is through debit/credit cards and registration is not required to make a purchase but provision of contact details, including email address, is required. Terms and conditions are displayed during the booking process and the user must check a box to confirm understanding. All booking confirmations are sent via email. There are number of additional services and products offered, all requiring separate purchase except for travel insurance and baggage fees.

8.2.7 Environments

There are no facilities for sending or sharing the results of a search. The site is available 24/7 and confirmations are generally sent within a few minutes of booking. The default language is English but other European languages (and currencies) are supported. The main site does not use any audio or video applications but some materials, such as Destination Guides, require an application that reads PDF files while others, such as the casino games, require Flash players. There is no obvious timeout feature, but an abandoned partial booking cannot be recovered. During the purchase process, users are warned that it may take up to 45 seconds to process their payment. All booking activity takes place within the same browser window but selection of other features will open a new browser window. No features are offered to control site display.

8.2.8 Profile of the Ryan Air Consumer

According to the above exploration, the profile of the online consumer assumed by the Ryan Air site designers is one who may be relatively inexperienced in using the Internet, online shopping or international travel in general. He/she wants reassurance that purchasing tickets through the site is safe, is always on the lookout for a bargain and responds positively to promotions and adverts. This consumer enjoys online contests, likes to experiment with new destinations and is willing to put up with a number of restrictions on travel times, departure or arrival points and ancillary services in order to obtain low-cost travel. He/she is from any number of European countries but is likely to speak English, may be using the site from any type of computer at any time of day, does not care about site appearance or layout and may move between different sites until starting the booking process.

8.3 Exploring GNER

GNER is a UK rail operating company that provides passenger services between London and Scotland, but also sells tickets for travel on any of the other UK-based rail companies. A sample of their homepage is shown in Figure 8.2.

Figure 8.2 – GNER.com homepage

8.3.1 Self-Efficacies

The site requires some basic familiarity with filling in simple online forms, but no other technical or online shopping expertise is assumed. Assistance is provided for first time users, as well as explanations of the various fares and packages. A precise destination must be specified, but assistance is provided for station names and spelling.

8.3.2 Beliefs

Security cues are displayed during the payment process (including an SSL icon) and links are provided for further information about privacy and related issues. No particular assurance about the company is provided, but it is assumed one is already familiar with who the company is. A loyalty scheme is offered, but this is based on amount of travel and a 10% discount on fares is offered for online purchase. The homepage offers guidance to first time users. There are a number of similar UK rail companies selling tickets and there is no particular differentiation between GNER and its competitors. Email newsletters with information about special offers and promotions provided by GNER and other travel service vendors are offered upon registration. There are a number of promotions offered from the homepage, ranging from discounts on GNER fares to accommodation and destination activities.

8.3.3 Economics

Prices are displayed in Pounds Sterling and are inclusive of all taxes. Single or return fares can be purchased and all possible discount packages are displayed as part of the search results regardless of availability. Prices are always displayed in ascending order and a discount is offered for online purchase.

8.3.4 Affects

Competitions are periodically offered on the site with chances to win prizes, including free rail travel. There is little opportunity for service customisation, however, there are various options for ticket delivery. Encouragement to try new destinations is offered through special offers and travel guides, but no packages are offered and only one journey can be purchased at a time.

8.3.5 Connections

The site's GNER ownership is made clear and ticket collection from GNER outlets is offered. Previous visits to the site are not explicitly recognised.

8.3.6 Logistics

The site has a memorable URL and can easily be found using search engines. Searching is done from the homepage and, at a minimum, requires specification of departure, destination, date and time of departure. There is an option for registered consumers to save "Favourite Journeys", but the ability to search based on these profiles is not available from the homepage. Results are displayed chronologically for up to the 5 closest matches regardless of availability and results for earlier/later times can be requested. Basic searches can be done without prior registration, but login is requested before prices are displayed and tickets cannot be purchased without registration. Prices are displayed in tabular form by ascending order for each departure time, with a greyed-out radio button for each one that is no longer available. Terms and conditions are displayed where appropriate and also available as separate links. Payment is via credit/debit card and card details can be stored at registration. Confirmation is provided via both display and email, but e-ticketing is not supported at this time. Options are given to have tickets delivered through a number of means, with additional charges for express delivery, or tickets can be collected at the station of choice. Travel insurance can also be purchased during the ticket transaction, but other services such as accommodation require a separate transaction. Refunds can be applied for online and the status of previously booked orders can be checked.

8.3.7 Environments

There are no facilities for sharing or sending search results with other people. The site is operational 24/7 but tickets purchased for travel within 24 hours must be collected in person. There are no special features or applications needed to use the site and no audio/video features are used. The site is available only in English and assumes some familiarity with the geography of the UK. Search results are opened in a separate browser window, as are competitions and other features, but booking takes place in the same browser window as the search. There is no explicit timeout but abandoned bookings are not recoverable. A brief waiting page is shown between search and payment activities. No site control features are offered.

8.3.8 Profile of the GNER Consumer

According to the above exploration, the profile of the online consumer anticipated by the developers of the GNER site is one who may not be particularly experienced in use of the Internet or online shopping, but does have some basic knowledge of UK geography. He/she does not have strong concerns about transactional security or the reputation of GNER, but wants some incentives for purchasing their tickets online. This consumer responds positively to persuasive media (especially for destination-related travel services), likes to know the various fare options regardless of availability and prefers to purchase the lowest price tickets possible. He/she is not adverse to entering contests, likes to occasionally try new destinations for travel, but prefers to put together their own travel packages. The anticipated GNER consumer knows where and when they want to travel, but has some flexibility on time of travel. They pay for their purchases by credit/debit card in Pound Sterling and, as there is no e-ticketing facility, they want choice in how they collect their tickets. They may be purchasing tickets several months in advance or for same day travel and use the site at any time of day and from any type of machine or location. This consumer speaks English and is not particularly concerned about site navigation or layout, makes limited use of registration or personalisation outside of payment and delivery address details and is likely to complete a booking once started or abandon it altogether.

8.4 Exploring easyHotel.com

easyHotel is a site providing information and reservations for both the hotel chain run by the UK-based easyGroup and another 20,000 hotels worldwide. A sample of their homepage is shown in Figure 8.3.

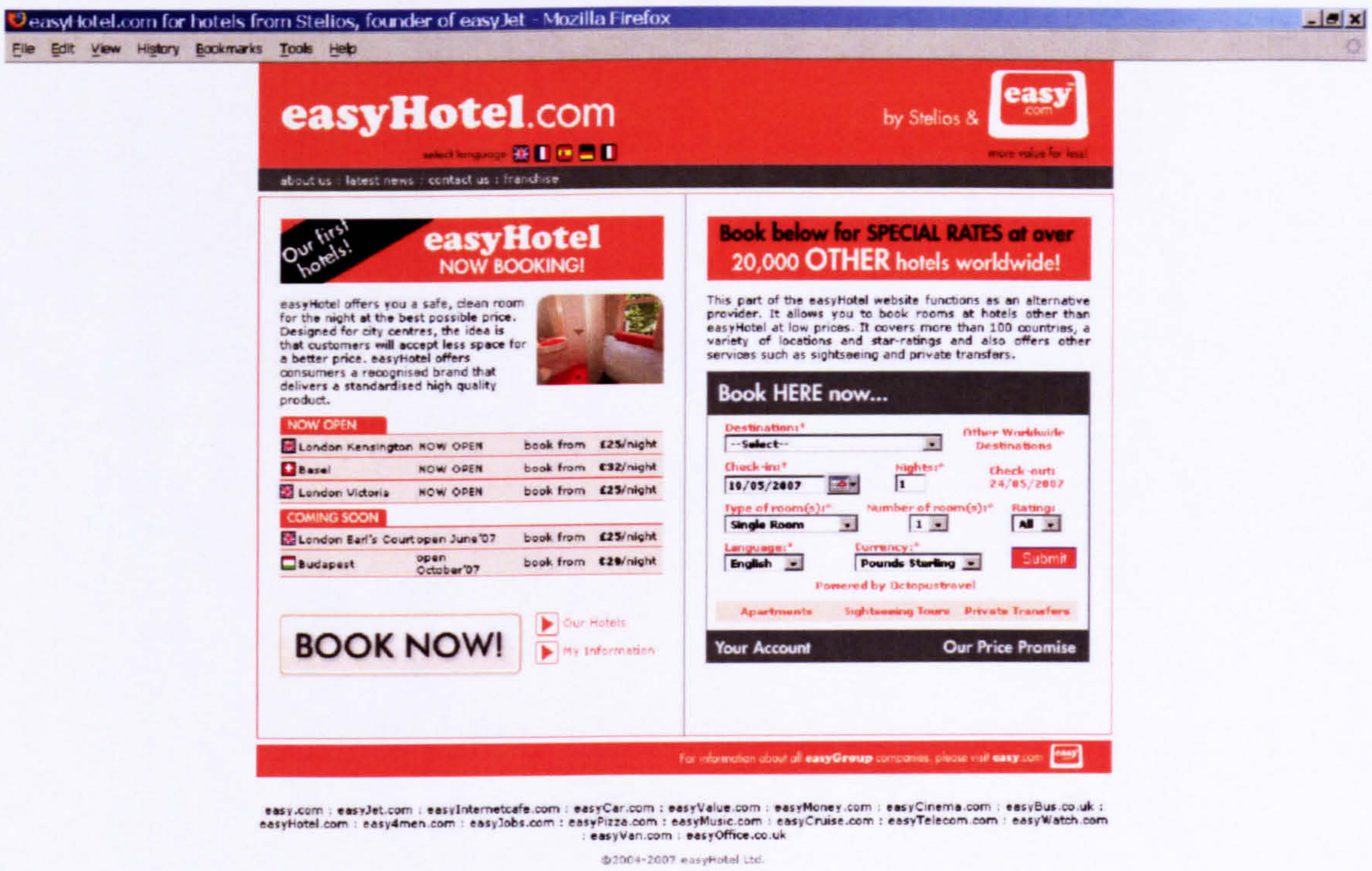

Figure 8.3 – easyHotel.com homepage

8.4.1 Self-Efficacies

The site opens multiple tabs/windows during the search and booking process, assumes that the user understands that an "*" designates a mandatory field on a form and uses hotel star rating systems and a variety of hotel facility symbols.

8.4.2 Beliefs

No particular information about transactional security is shown during a transaction. Affiliation with the parent organisation easyGroup and the Octopustravel system is made evident throughout the site but the FAQ tab must be specifically selected to receive specific information on reliability of service. The site differentiates itself from competition by exclusively offering bookings at the easyHotel chain. There are a number of promotional links on the homepage, search result pages and booking pages for special hotel offers, local tours, etc.

8.4.3 Economics

The site always displays full/final price and the user is reminded of this fact while searching. Prices can be displayed in a number of currencies, with Pound Sterling as the

default. Results can be displayed in price order and the vendor offers a "price promise" guaranteeing that prices displayed are the "lowest available on the Internet".

8.4.4 Affects

The site does not offer any entertainment features. The vendor claims that it offers a wide range of hotels in over 100 countries, but there is no facility for creating bespoke travel packages.

8.4.5 Connections

The site is affiliated with the easyGroup company and that affiliation is made evident throughout the site both directly and through use of corporate branding and the distinctive orange colour scheme. The site is also "powered by Octopustravel", an online hotel booking agency, but that affiliation is made less evident. There is a registration facility whereby the user can store address and payment details and look at previous bookings.

8.4.6 Logistics

The site has a memorable URL (www.easyhotel.com) and comes top of search engine searches for "easy hotel". Users can perform specific searches given destination, date, number of nights, room type, number of rooms, language and currency (all of which are mandatory). Search results can then be filtered by hotel ratings or price. There are occasional opportunities to browse hotels for specific cities depending on current promotions. There are no options to create preferences or profiles. Results are displayed 20 per page and a picture price, short description and facility icons are displayed for each result. Payment is through credit/debit card and users must log in (or register) to make a purchase, but not until they get to the payment part of the booking process. Terms and conditions are a separate pop-up link on the payment page. Confirmation of booking is sent via email and some types of late bookings require separate manual/offline confirmation with the hotel. Other services, such as tours, are offered both on the homepage and during booking but must be booked separately from the hotel booking.

8.4.7 Environments

There are no facilities for sending or sharing the results of a search. The site is available 24/7 although some manual hotel confirmations are not. The default language is English, but users can also select French, Spanish, German or Italian from the homepage. The site does not appear to use audio, video or any applications that would constrain its use in office or café environments, but does open a number of windows and pop-ups during the booking process. There is no integration with maps, tourist guides or other sites.

There is an interim page display before search results that reminds the user that all prices include tax but this page stays on the screen for only a few seconds. There does not appear to be a specific session timeout, but an abandoned partial booking cannot be recovered. There are no inherent features for controlling site display or layout and little personalisation beyond the account feature.

8.4.8 Profile of the easyHotel Consumer

According to the above exploration, the profile of the online consumer assumed by the easyHotel site designer is one who has a reasonable level of familiarity with using the Internet and with travel, particularly hotel standards and booking processes. He/she does not have particular issues about transactional or vendor trust but is probably already familiar with other easyGroup products and services and responds positively to persuasive media. The easyHotel consumer is very cost conscious, uses price as their primary selection criterion and wants to thoroughly compare prices before making any decisions. Range of choice, both in destinations covered and range of accommodation, is of vital importance but putting together any form of packaged travel arrangements is not. The easyHotel consumer has quite likely found the site by typing in the URL or using a search engine and already knows where and when he/she wants to travel. Personalisation is welcome to the extent that payment details do not have to be re-entered each time, but storing travel preferences or profiles is not needed. The easyHotel consumer is most likely to be in the UK, but can also be French, German, Spanish or Italian. He/She may be using the site from any type of computer at any time of day, is not particularly concerned about site appearance (but does want to see pictures of the hotels) and will generally stay on the site until booking is either complete or abandoned altogether.

8.5 Patterns and Issues

Although the three sites described above relate to three different leisure travel services – flights, rail and accommodation – there are several striking similarities in the resultant consumer profiles. The provision of search facilities on their homepage, the offers of ancillary travel services that generally must be purchased separately, the use of registration for optimisation of purchase and delivery rather than personalisation and the offers of online discounts and/or lowest price guarantees all point to the perception of the online leisure travel consumer as a highly pragmatic cost-conscious individual. However, the continual presence of promotional materials also suggests the perception of the online leisure travel consumer as one who either is unsure of their requirements or at least flexible in their requirements and can be persuaded to make more purchases than originally intended, especially if cost-savings are involved.

There are, of course, differences of note between the profiles derived from the three sites but these are often a result of the nature of the service offered. For example, while all three sites use email to provide confirmations, GNER does not (as of this writing) offer any form of e-ticket. GNER is also the only one of the three that assumes the consumer is British, or at least resides in Britain, but this is in keeping with the fact that it does not provide any services outside the country.

One of the most striking behavioural themes identified during the observations and interviews of the leisure travel participants, as detailed in Appendix C, was their concern with price and their perceptions of price dispersion. These participants would spend a considerable amount of time manually examining various permutations of search criteria across multiple online vendors and, even when they used price comparison engines, they were sceptical of the results and would examine individual vendor sites as well. Only after they had satisfied themselves as to the lowest possible price for a journey would they begin to consider how much they would pay to get a preferred date, time or departure point. Blythe states (1997) that consumers will generally undertake a degree of research to confirm to themselves that they are getting the best price for the product or service that meets their specifications. Supporting this activity is the concept of "internal reference prices" – the prices the consumer either recalls from memory, or bases on past experiences or other factors and uses as part of their research (Schiffman & Kanuk, 2004). Given the volatile nature of travel pricing with its seasonal and scheduling variations and the competitive nature of the travel market, consumers of online leisure travel need to do a great deal of research just to establish a basic internal reference price from which they can then make informed decisions about what they will pay for services suitable to their requirements. Considered in this light, the behaviour of the leisure travel participants becomes clearer and it is no surprise that the profiles of the expected users of Ryan Air, GNER and easyHotel reflect this need for price comparison activity above all.

8.6 Summary

This case study described e-CF based exploration of three sites used by online leisure travel consumers. These explorations were used to build profiles of the consumer as assumed by the designers of each site. These profiles and the data gathered during the construction of the e-CF depict an online consumer that is virtually obsessed with price and price comparison activity. Unlike the online Christmas and grocery shoppers described in Chapters 6 and 7 who operated from a number of e-CF themes simultaneously, the picture of the online leisure travel shopper described in this chapter

is one permeated by the e-CF theme of Economics, a finding reflected both in the consumers studied and the artefacts used.

9 Implications for Interaction Design

> "Ethnography provides insight into the organization of social settings, but its goal is not simply to save the reader a trip; rather, it provides models for thinking about those settings and the work that goes on there. The value of ethnography, then, is in the models it provides and the ways of thinking that it supports."
>
> (Dourish, 2006)

Chapter 2 of this thesis presented the argument that one of the key justifications for a framework for exploring online consumer behaviour was its potential contribution to interaction design of e-Commerce systems and Chapter 4 specified the demonstration of this contribution as one of the criteria for evaluating the validity of the e-CF. This chapter will examine some specific examples of how the e-CF can contribute to interaction design, looking first at the use of e-CF based explorations to identify approaches to design strategies and then the role of the e-CF in constructing design personas.

9.1 Identifying Design Strategies

The title of this chapter in many ways begs the question – to what extent should the results of an e-CF based exploration, or in fact any exploration, of online consumer behaviour produce "implications" for interaction design? To answer this question, one must first look at the role of ethnographies in interaction design. Ethnographic methodologies are often presented as a means for interaction designers to gain an understanding of the user and use context (Dix *et al*, 2004; Faulkner, 2000; Preece *et al*, 2002). However, Anderson (1994) argues that the most popular usage of ethnography in systems design is often as a device for "data collection" and that utilising ethnographies in this manner precludes the opportunities for the type of "analytical ethnography" that allows the researcher to "extract the patterns" and bring "novel and deep design possibilities to light". Building on from Anderson's work Dourish (2006) argues that the use of ethnographic-based inquiry in HCI to identify specific design issues is in effect treating qualitative data as empirical "facts" that can then be translated into specific action items for the designer. Such a perspective, argues Dourish, entrenches the position that the world of the user and the world of technology are separate and devalues

the role of ethnography in understanding how behaviour is both shaped by and shapes technology.

Aside from the fact that many of Anderson and Dourish's concerns are in keeping with the perspective of the online consumer as a postmodern one who shapes and is shaped by their shopping experiences (Firat & Venkatesh, 1995), the issues Anderson and Dourish raise about the role of ethnographies in interaction design have a direct relevance in thinking about how to operationalise the results of e-CF based explorations. Carroll (2000) points out that interaction designers generally start without a full understanding (let alone a precise specification) of the existing so-called "problem" to be solved and do not have a specific set of moves for developing that understanding to defining and achieving the desired design space. Instead, the interaction designer must develop a set of overall moves or strategies for approaching the design space that is flexible enough to adapt to their evolving understanding of the user and their experience. By building on an understanding of the online consumer's behaviour, an appreciation of the types of issues encountered by online consumers can be developed that connects understanding of behaviour and the design of the artefacts to support behaviour, a linkage that historically has been absent in systems design (Blomberg *et al*, 1993).

In looking at the role of ethnographies in developing design strategy, Dourish concludes that "Ethnography has a critical role to play in interactive system design, but this may be as much in shaping research (or corporate) strategy as in uncovering the constraints or opportunities faced in a particular design exercise." Like ethnographies, the e-CF based explorations described in Chapters 6-8 are intended to "capture, interpret and explain" (Robson, 2002) how online consumers make sense of their world and communicate that understanding. Like ethnographies, the insights derived from exploring online consumer behaviour in a particular domain are not intended to develop prescriptive lists of features that interaction designers should include/exclude/modify for a particular site, but rather to raise awareness of the behaviour of the consumer operating in the domain and what this may mean for overall design strategy. Three examples of how this awareness can impact overall approaches to design follow.

9.1.1 Designing for the Online Christmas Shopper

The discrepancies identified in Chapter 6's exploration of online Christmas shopping behaviour between the consumer's depiction of his/her self as an independent shopper and the need for assistance present particular challenges to the interaction designer of an e-Commerce system as well as other stakeholders. A vendor hoping to sell products online wants to maximise sales and would look to the design of their Internet site to encourage consumer activity just as they would expect the design of their terrestrial shop

to do so. This leaves the interaction designer with the task of understanding what types of design artefacts will achieve this goal and incorporating these artefacts into the e-Commerce site. But how can the interaction designer gain this understanding? Asking online Christmas shoppers, either through interviews or surveys, questions about their *perceived* behaviour can lead to conclusions about what artefacts will encourage sales that may not be reflected in actual performance. Alternatively, measuring reactions to simulated Christmas shopping transactions can lack ecological validity, especially given the predilection of online Christmas shoppers to engage in polychronic behaviour including shopping for different items simultaneously. An interaction designer could potentially spend time and effort in developing and lab testing a particular bit of persuasive media only to discover that the online Christmas shopper, who is moving back and forth between pages, applications, or even between their computer screen and other stimuli, hasn't paid any attention to the media, or has blocked it through use of conflicting applications.

9.1.2 Designing for the Online Grocery Shopper

The exploration of online grocery shopping behaviour detailed in Chapter 7 presented a reluctant consumer torn between wanting the experience of buying groceries in person and the time convenience of buying them online. Given the current limits of interaction technology there is currently little scope for providing the sensory aspects of the grocery shopping experience on the Internet and it can be argued that the best an interaction designer can aim for is to understand and address those factors that exacerbate consumer reluctance, particularly concerns about control and opportunities for experimentation. Fortunately some of these factors are relatively specific and concrete. For example, helping online grocery shoppers locate products through more intelligent search functionality and/or more intuitive taxonomies – a search for "rice pudding" should not produce the same results as "pudding rice" – can address concerns about control of grocery shopping. Other factors contributing to perceptions of control require more study, such as understanding the barriers to use of those site features that already provide additional consumer control – for example, online UK supermarkets provide the ability to provide specific product instructions to the vendor but take-up of this feature is low. Addressing the online grocery shopper's need to experiment is a more difficult challenge, especially as presenting the user with extra information or displays is quite likely to conflict with their desire to control their shopping experience. One possible way to address the user's desire both to experiment and to control their grocery shopping experience may eventually be through Virtual Reality interfaces that enhance product perception through Telepresence (Suh & Chang, 2006).

9.1.3 Designing for the Online Leisure Travel Shopper

The exploration of the online leisure travel shopper described in Chapter 8 was based on examining three typical UK travel sites, with all three sites reflecting a perception of this consumer as one who will do a considerable amount of price comparison activity before making any purchasing decisions. Given this perception of consumer behaviour, what does this say about strategies for designing such sites? If the design goal is to simply facilitate the consumer's activities, then the designer should concentrate on enhancing the ability to make price comparisons and include features such as the ability to search for flight departure points based on destination. If, however, the designer wishes to encourage the consumer to use their particular site instead of the competition, then the designer and other stakeholders need a clear understanding of where in the price comparison stage their site is likely to be accessed and what will encourage the consumer to either stop their search there, or come back to the site once their price search is complete. For example, the interaction designer of a new UK-based discount carrier may be well aware that their typical consumer will also look at EasyJet and Ryan Air, so the challenge in this case will be to either create a design intended to persuade the consumer that their offerings are the best value for money, or create a design that provided incentives and encouragement. This may go some way to explaining why the Ryan Air site currently includes a number of games and contests.

9.2 Constructing Personas via the e-CF

In addition to informing overall design strategies, depictions of user behaviour are also used to develop personas – "hypothetical archetypes of actual users" – at the early stages of interaction design (Cooper, 1999). These personas serve as descriptive models of the user and are used to build and communicate an understanding of user behaviour, motivations and goals (Cooper & Reimann, 2003; Dix *et al*, 2004). Using ethnographic user data supplemented by stakeholder-supplied data and previous research, personas can be built by identifying a manageable number of relevant and logically or causatively connected behavioural variables from the data and then mapping participants against these variables against a two-dimensional behavioural axis to produce a set of bullet points of user characteristics (Goodwin, 2002). Once this process is complete, a name is assigned to the persona and the bullet points turned into a narrative format in order to not only provide a more meaningful tool for communication but also to reinforce the "connection" to the persona (Cooper & Reimann, 2003).

A number of alternative techniques have been suggested for constructing more robust and complex personas, either through dramaturgical workshops (Kantola *et al*, 2007) or

cinematic or fictional writing techniques (Nielsen, 2002; Blythe & Wright, 2005). Other practitioners demonstrate the refinement of personas through identification of user roles (Hill & Bartek, 2007) or demographic criteria such as age (Antle, 2006). Pruitt and Grudin (2003) suggest use of a "foundation" document to set up a structured storehouse for data about each persona, as well as the development of anti-Personas to illustrate archetypical non-users of an interaction.

While personas can be a useful tool for conveying complex behaviours, using Goodwin's process of persona development to build personas for online consumers has distinct limitations that are not completely addressed by alternative techniques. The complexity of online consumer behaviour can lead to producing an unworkable number of observed behavioural variables with no obvious indication of their relevancy while critical variables can be missed altogether. For example, an observer may not even notice the extent of polychronic activity a user may perform while shopping online, let alone understand whether this is a relevant behavioural variable. In addition, it is not clear how polychronic activity could be usefully mapped along a two-dimensional axis as it may not be just an issue of how many concurrent tasks the online consumer performs but also what types of tasks.

The e-CF can address this problem by providing a structure for collection and analysis of data into appropriate behavioural variables of online consumers, facilitating construction of detailed and relevant pictures of individual participants. To build an e-CF based persona, a summary of the data gathered on a participant (or set of participants) is described using the e-CF categories as a template and then this summary is transformed into a narrative.

The example below depicts how a sample persona of an online grocery shopper was built from information gathered during the interviews and observations described in Appendix A. The first stage of this process was to summarise the ethnographic data from a specific participant, GP6, using the e-CF framework (Figure 9.1).

Summary of GP6
Self-Efficacies
Extremely low level of technical expertise, easily confused by browser options, error messages, relies on children to help. Does all the cooking for family, knowledgeable about products.
Beliefs
No concerns about online risk, sees storing of credit card details as a convenience. Has not tried other online grocers. Will examine Special Offers for familiar products.
Economics
Feels online grocery shopping allows her to take better advantage of sales and special offers as transport isn't an issue. Spends less when grocery shopping online due to lack of impulse buys, but suspects this may be offset by more frequent excursions to premium terrestrial shops.
Affects
Home delivery aspect of online shopping is a "treat", previous weekly visits to supermarket were considered unpleasant and time-consuming. Now finds visits to premium food shops "fun", feels she misses out on encountering new products online.
Connections
Used to go to terrestrial supermarket on weekly basis, now does top-ups at premium food shops. Does not visit terrestrial outlets of vendor anymore. Previous experience with online vendor has been good and she has been happy with their substitutions in past.
Logistics
Uses 'My Favourites' as basis of shopping list, plus memory. Examines Specials first, then My Favourites, then uses Search for other items. Views browsing categories as inconvenient. Usually books delivery for next day. Primary motivation for online shopping was convenience of time and transport as she does drive but often had to take children with her when shopping,
Environments
Online grocery shops weekly, usually mid-week but driven by inventory rather than cheaper delivery slots. No polychronic activity, but is often interrupted by children. Shops from old desktop in children's room. Aside from occasional Search problems, is happy with site interface but generally does not use most site features.

Figure 9.1 – e-CF Summary of GP6

This summary was then transformed into a narrative structure to construct a persona for GP6, renamed "Julia", as follows:

> Julia is a busy full-time homemaker with 4 young children. She is not computer literate, does not use the Internet and relies on others to show her how to use any form of technology. She is responsible for her family's food shopping and cooking, a task she generally enjoys and likes to concentrate on and she is very knowledgeable about meal planning and produce selection. Julia needs to buy groceries on a weekly basis, usually mid-week to ensure she has supplies for the weekend. She enjoys picking out produce and examining new items but does not like the amount of time and effort it takes to drive to/from a supermarket, do the shopping, queue for payment, load and unload groceries, etc., especially as she often has one or more of her children in tow. She was so attracted to the convenience offered by online grocery shopping that she was willing to seek assistance to overcome her lack of computer skills. She also feels online shopping could be cost effective as it would enable her to bulk purchase items and reduces her impulse buying, however she is concerned about missing out on the experience of encountering new products by shopping online. Julia now "treats" herself to visits to premium food shops, which allows her to experience the pleasurable aspects of food shopping, despite the concern that whatever cost savings she makes online may be offset by these visits. She likes to examine sales and special offers for those products she buys on a regular basis and she normally does not make a written list before shopping.

This persona gives a picture of an online consumer that allows the reader to fully appreciate a type of online grocery shopper who has transcended her lack of computer knowledge to buy groceries online, while continuing to use terrestrial channels. This picture captures several key aspects of GP6's behaviour, including her low level of computer expertise, her enjoyment of the online experience, her desire for new experiences and the conviction that this desire can only be realised in person.

The next example of an e-CF persona construction demonstrates polychronic behaviour captured and conveyed within a persona. In this case, the first step was to again summarise the interviews and observations from a participant, XP8, using the e-CF framework (Figure 9.2).

Summary of XP8
Self-Efficacies
9+ years Internet. Little product knowledge. 5+ years shopping online.
Beliefs
Has some concerns over using credit cards online, but is more concerned about whether items can be sent back if unsatisfactory and security of office versus home network and delivery. Does not trust manufacturer's own information when researching unfamiliar items and will not use their sites. Prefers to use known core set of 5-10 vendors, but will allow price considerations to override concerns about unknown vendors. Also relies on certain core vendor to increase his confidence in unfamiliar products – if that vendor carries a particular item he will make positive assumptions about product even if he purchases it elsewhere. Claims to ignore recommendations, sales, promotional banners or emails.
Economics
Price conscious, will stray from core vendors for better deals. Sees online as generally offering better prices for certain items such as DVDs and will comparison shop amongst online vendors for these items. Other items, such as jewellery, are seen as having little or no price dispersion. Prefers cheapest rather than quickest delivery options where available.
Affects
Feels online shopping offers more choice and more control of purchasing and shopping environment. Dislikes being in terrestrial shops and dislikes terrestrial Christmas shopping atmosphere. Does not normally find shopping pleasurable, but can enjoy researching prospective purchases online.
Connections
Feels pressured in terrestrial shops and difficult to find items. Exceptionally good experiences with one specific core vendor predispose him to other products carried by that vendor, even if eventually bought elsewhere. Prefers to purchase terrestrially when he perceives need to examine product, such as jewellery, even if research is previously done online. Expects to do some terrestrial Christmas shopping.
Logistics
Works from written shopping list, compiled from family suggestions and his own ideas. During session shopped for motorcycle gloves and blood pressure gauge. Starts with search engine keyword search, then browses likely categories within results, then reverts back to search engine with refined keywords. Searches multiple vendors using browser tabs, switching between them while waiting for next page to load. Uses various credit cards and/or PayPal for gift purchases, delivered to home.

Summary of XP8
Environments
Does gift research during the day in office, orders late in the evening from home once family has gone to bed. High level of polychronic activity, including work applications and shopping for multiple gifts simultaneously. Prefers sites that allow sorting of search results and include pictures of items. Dislikes sites with too much white space, pages extending over multiple screens and assumes sites designed for lower resolution display are not current. However, design preferences can be overridden by price.

Figure 9.2 – e-CF Summary of XP8

Transformed into a narrative structure, XP8's e-CF based persona read as follows:

Jerry is a 23 year old researcher, married with one small child. He is very computer literate and frequently shops online for both familiar and unfamiliar products. He has some concerns about the safety of online shopping, but more about vendor/product reliability rather than transactional security. He is generally loyal to a core set of vendors for his day-to-day shopping and will use one vendor in particular to allay concerns about unfamiliar products/brands, reasoning that if this vendor carries an item then the item must be credible. He sees himself as someone who ignores online promotions, recommendations and other persuasive clues, but Jerry is also extremely price conscious and will let himself be swayed by vendors promising better prices on an item, even if vendor reliability is less certain. Jerry thinks online shopping is more cost-effective for certain types of products and often comparison shops. He also enjoys the choice and control offered by online shopping, especially control of his environment. Jerry generally dislikes shopping, but does enjoy researching unfamiliar products online. Jerry has prepared a handwritten list for his Christmas shopping, with at least several products he is not familiar with. Despite his strong dislike of going into shops, especially at Christmas time, he expects he will need to do some terrestrial shopping this year as his list includes jewellery, which he feels he needs to examine in person before purchasing. Jerry does most of his online shopping research during the day from his office and is usually performing several tasks at the same time, including researching multiple purchases simultaneously. Jerry perceives a connection between the quality of a vendor's site design and their reliability, but will abandon these concerns if the price is right.

The next example of persona building demonstrated how the e-CF was used to build a two-person persona. The e-CF summary of the interviews and observations of couple GP2 (individually described as GP2f and GP2m) is shown in Figure 9.3.

Summary of GP2
Self-Efficacies
Experienced Internet and online shopping users. Both cook, but GP2f does most of the cooking. GP2m is knowledgeable about wines.
Beliefs
Generally don't store credit card details online, but are less concerned about storing passwords and registration information. Vendors service and products considered reliable. Use a variety of online supermarkets, depending on product availability and/or discount vouchers or coupons. In supermarkets, GP2f will carefully check the till receipt for errors before leaving. Choice of supermarket will vary according to prices/discounts and product availability. GP2f rarely examines special offers online, but in supermarket will peruse every promotional display, even products she doesn't generally buy.
Economics
Extremely cost conscious, make bulk purchases, schedule online shopping to take advantage of cheaper delivery times and carefully check unit prices and 2-for-1 specials while shopping.
Affects
Always decline substitutions as they feel they are careful to specify exactly what they want. Perceive online shopping as offering more choice. Will try different vendors out of desire to experiment as well as for economic reasons. In a supermarket, GP2f is extremely annoyed if a product she wants is unavailable. Once they complete list, they will spend a considerable amount of time wandering through the supermarket looking for something a special treat.
Connections
First encounter with online grocery shopping was very positive. Will try different vendors out of desire to experiment, but feels only difference between most vendors is price. Continue to use terrestrial supermarket on weekly basis.
Logistics
Prepare list before shopping. All product selection done via Search box, using various permutations of brand and product name if problems finding item. If item cannot be found, put on list for next terrestrial visit. Never uses My Favourites or Last Order. Primary motivation for buying groceries online was convenience and ability to bulk-buy, as no car and no supermarket within walking distance. In supermarket, product selection dictated by what can be carried back on foot. Three complete circuits of supermarket made, first one to fill most items on list and subsequent ones to look for treats and examine other items.

Summary of GP2
Environments
Online grocery shopping done together bi-monthly, on home computer, in evening. GP2f is primary decision maker. No polychronic activity, prefer to "concentrate" when grocery shopping. Use dial-up connection so site is perceived as very slow. Rarely examine online items in detail, except for unit price. GP2m operates the computer, GP2f maintains shopping list and checks stocks on hand where required. Supermarket visits are done together on Saturday afternoons, usually in one of the supermarkets within walking distance of house. GP2m pushes the cart, GP2f is primary decision maker. Items are closely examined before adding to cart.

Figure 9.3 – e-CF Summary of GP2

A persona was then built by transforming this summary into a narrative structure which also allows one to treat GP2, renamed John and Mary, as a single persona.

> John and Mary are a young married couple with no children, living on a tight budget. They are both comfortable with using the Internet and shopping online. While they both cook and they do their grocery shopping together, Mary is the primary cook and decision maker for grocery purchases. They do not own a car so trips to the supermarket are constrained by what they can carry. They are keenly cost-conscious, check unit prices and sales on a regular basis and have little brand or vendor loyalty. Before shopping, they prepare a list and rarely deviate from the list, though are more prone to buy extra treats when in the supermarket. Grocery shopping is viewed by them as an activity requiring concentration and focus, with extended discussions of each purchase. When shopping, John is in charge of logistics (pushing the trolley or running the computer) while Mary manages the list and selects the products, often in consultation with John. They are primarily attracted to the logistical conveniences of online grocery shopping, especially as this allows them to make bulk purchases, which they feel offsets the delivery charges. Consequently they shop online on a bi-monthly basis from whatever vendor they have discount coupons for and top-up their supplies on a weekly basis from their nearest supermarket. They value being in control of their product selection, will rarely accept substitutes and become annoyed if they cannot locate a product, especially in a supermarket.

The next example demonstrated development of a persona using multiple shopping channels. Once again, the interviews and observations from a participant, XP5, were summarised using the e-CF framework (Figure 9.4).

Summary of XP5
Self-Efficacies
10+ years Internet user, 2 years shopping online. Some product knowledge, but prefers to purchase unfamiliar items for Christmas presents.
Beliefs
Unsure if she stores details with core vendors, but isn't concerned as counts on her review of credit card bills to spot problems. Has core set of sites, but likes to experiment. Self-described "sucker" for discount offers. (e.g. offering free delivery on next purchase). Will look at recommendations, especially Amazon. Doesn't like email ads, unless a money-off offer.
Economics
Says she saves money shopping online, but this is minor consideration. Feels she gets equivalent value for money from online as terrestrial, but gets better deals for books online. Batches items to get free/cheaper delivery. Would rather get new/strange items for Christmas gifts, even if more expensive. Attracted to free delivery offers. Doesn't use price comparison sites.
Affects
Catalogue and online identified as providing more control over space/place, timing. More choice online. Will not buy groceries online as wants to control substitutions. Overall, feels shopping is less entertaining than it used to be, depending on her mood. Portability of catalogues makes them more entertaining than online shopping. Used to enjoy spending time going through Amazon, filling basket but not buying – felt she was getting 'shopping experience' at time when she had little funds. Enjoys wrapping gifts. Enjoys buying toys for adults and kids and giving new/unusual items as gifts. Overall, feels online shopping has made Xmas shopping less stressful rather than more fun. Tends to stick with same set of vendors, but will also experiment.
Connections
Uses catalogues frequently, optimal mix is browsing in catalogue and placing order online. If catalogue vendor has shop, will visit as well to more closely examine items. Some gift shopping will be terrestrial, particularly for last minute items. If possible, will order online rather than in shop if can be shipped in time. Attitude against online groceries makes her predisposed against online supermarkets, even for non-food items. First online Christmas and is buying more items overall than last year.
Logistics
Christmas list is things she has thought of rather than requests from recipient. Often uses catalogues to decide what to buy. Sometimes buys item and then decides who to give it to. Browses paper catalogue, searches online. Will browse entire site online if needed. Perceives paper browsing as quicker and easier. Uses credit card. Will save login details in browser. Deliveries to her office.

Summary of XP5
Environments
Shops alone, dislikes crowds and likes to feel free to "potter about" regardless of channel. Shuns eBay as "addictive". Shops from her office in evenings, after work. Preferred to browse paper catalogue because felt site made browsing difficult – catalogue combined with online direct order entry was considered easier. Doesn't usually bookmark sites. Particularly likes sites advising her that an item is already in cart.

Figure 9.4 – e-CF Summary of XP5

Transformed into a narrative, XP5's e-CF based persona reads as follows.

> Paula is a 45-year old single academic who likes to buy unusual/unfamiliar items for Christmas presents. She is an experienced user of the Internet but has only started shopping online in the past two years. She has a core set of online vendors, but also likes to experiment with new ones and is not particularly concerned with issues of trust or security. She is responsive to recommendations and other persuasive site clues, especially discount offers. She is less cost-conscious about Christmas purchases than other shopping, but still influenced by free delivery offers and other promotional items. She has been a frequent user of paper catalogues in the past, both for Christmas and other types of shopping and still values paper catalogues as being more portable and more enjoyable and easier to browse through. However, she now prefers to select items from the paper catalogues and then order the items online as she feels this offers the optimal mix of control, choice and convenience. She enjoys browsing, whether through shops, catalogues, or websites. She dislikes crowds but expects she will need to do some last-minute Christmas shopping terrestrially. She is particularly concerned about control when shopping and will not use online supermarkets for this reason – in fact, her bias against online grocery shopping causes her to shun online supermarkets even for non-food items. Her overall enjoyment of shopping has decreased over time, but she still enjoys selecting and wrapping Christmas gifts and will often buy an item and then decide who to give it to.

9.3 Summary

In this chapter the case was made that the contribution of the e-CF to interaction design was not in the provision of specific recommendations for inclusion/exclusion of design features, but rather that the understanding of online consumer behaviour developed

through use of the e-CF assisted the interaction designer in developing design strategies. A review of the case studies discussed in Chapters 6-8 revealed that issues of polychronic behaviour, product control and perceptions of price dispersion uncovered during these e-CF based explorations held a number of implications for domain-specific design strategies. The limitations of developing design personas via generation of an undefined number and type of behavioural variables were discussed and a process for transforming ethnographic data into design personas using the e-CF was shown. This demonstrated how e-CF derived personas could help identify and capture relevant behavioural variables.

10 Conclusions

"We shall not cease from exploration
and the end of all our exploring
will be to arrive where we started
and know the place for the first time."
T.S. Eliot (1944)

Having examined the rationale, development and use of the e-CF, this final chapter will look at how the e-CF has addressed the original challenge described in Chapter 2, namely that of providing a framework for understanding online consumer behaviour that recognises online consumers as complex and diverse entities who shape and are shaped by their interaction. The e-CF will be evaluated against the criteria detailed in Chapter 3 and this evaluation will be followed by reflections on the process of developing the e-CF and the case studies detailed in Chapters 6-8.

10.1 Evaluating the e-CF

Section 4.7 of this thesis listed the criteria for evaluating the validity of the e-CF and its success in fulfilling the need for a framework for understanding online consumer behaviour. This section will now look at each criterion in turn and how the e-CF performed against each criterion.

10.1.1 Recognition of the Consumer as Both Consumer and User

The first criterion for evaluating the e-CF was, "Does the framework recognise the online consumer as both a consumer and a user of interactive technology?" The description of the development of the e-CF, as detailed in Chapters 3 and 4, documents an approach that incorporates data from both participant use of interactive technologies and shopping activities in the construction of the e-CF. This approach was also evident in the development of the theoretical categories such as Self-Efficacies, which incorporates both technical and shopping skills, Environments, which incorporates both the physical and virtual context in which the online consumer operates and Connections, which incorporates the online consumers' previous terrestrial and online experiences.

10.1.2 Comprehension of Complexity and Diversity

The second criterion for evaluating the e-CF was, "Does the framework facilitate comprehension of the complexity and diversity of online consumer behaviour?" This was demonstrated through the case studies described in Chapters 6-8 of this thesis,

which used the e-CF to explore online consumer behaviour in three different shopping domains, showing how behaviour differed in each domain and giving insight into issues such as the polychronic behaviour of online Christmas shoppers, the reluctance of online grocery shoppers towards their task and the focus on price dispersion of online leisure travel shoppers.

10.1.3 Identification of Behaviour Themes

The third criterion for evaluating the e-CF was, "Does the framework identify the common interdependent themes of online consumer behaviour?" Chapter 4 of this thesis described seven themes that were identified as common to behaviour amongst a variety of participant profiles and shopping domains. The pervasiveness of these themes were reinforced by the case studies detailed in Chapters 6-8. Examples such as the influence of the Economics theme on virtually all other themes in online leisure travel demonstrated the interdependencies of these themes.

10.1.4 Providing a Structure for Further Study

The fourth criterion for evaluating the e-CF was, "Does the framework provide a structure for further qualitative and quantitative study?" Chapter 5 of this thesis provided a structure for generating questions that could be used in ethnographic studies as well as surveys and questionnaires. Chapters 6 and 7 of this thesis detailed the use of e-CF generated surveys in studying online consumer behaviour, while Chapter 8 detailed a study of the assumptions made by designers through e-CF based questions about site design.

10.1.5 Providing a Structure for Comparing Behaviour

The fifth criterion for evaluating the e-CF was, " Does the framework provide a structure for comparing behaviours between domains?" The online grocery shopping case study detailed in Chapter 7 uses the e-CF to draw several comparisons between behaviour in that domain and the online Christmas shopping domain. Several differences of note were identified, particularly in levels of polychronic activity suggesting that online grocery shoppers were more focused on their activity. However, one of the key similarities between the two cohorts was in their disinclination to engage in online grocery shopping, which supported the conclusion that those who did shop for groceries online were often reluctant to do so.

10.1.6 Contribution to Interaction Design

The sixth and final criterion for evaluating the e-CF was, "Does the framework contribute to interaction design methodologies?" Chapter 9 of this thesis discussed the relevance of developing an understanding of online consumer to devising strategies for

interaction design and gave examples of how the understanding derived from e-CF based explorations of behaviour contributed to these design strategies. For example, use of the e-CF depicted the polychronic nature of the online Christmas shopper and the potential gaps between perceived and actual behaviour. This information would be of relevance in developing usability testing for online Christmas shopping studies, as it suggests that lab-based testing could lack ecological validity. Chapter 9 of this thesis also examined utilisation of the e-CF as part of a common interaction design methodology – that of persona development, which relies on the identification and mapping of a manageable number of relevant behaviour variables into a list of user characteristics. In Chapter 9 the e-CF was used as a structure for collection and analysis of data into appropriate and relevant behavioural variables to produce viable and comprehensive personas for a variety of online consumers, including development of a single persona for a pair who shopped together for groceries.

10.2 Reflections on Developing the e-CF

In reflecting on the development of the e-CF, three particular issues come to mind – the implications of research across disciplines, the documentation of the e-CF development and the limitations of the e-CF developmental process.

10.2.1 Cross-Disciplinary Research

The introduction to this thesis described several challenges to approaching research at the intersection of two separate disciplines, Consumer Behaviour and HCI. The primary challenge was to understand the type of theory that needed to come out of the research and from that determine an approach, compatible with both disciplines, that matched both the phenomena to be studied and the goals of the study.

The actual experience of developing the e-CF demonstrated that not only was the research approach compatible across the two disciplines, but an understanding and experience of the concepts and issues of **both** disciplines was necessary and beneficial in moving between data and theory. For example, previous experience in observing multi-tasking in computer users led to the initial decision to include several types of simultaneous activities as Open Codes during the coding of the Grocery Participants. The prevalence and variety of these simultaneous activities led to examination of previous research into similar behaviour by consumers, which in turn led to the identification of multi-shopping activity in Christmas and Travel participants as a separate Open code and the subsequent development of these codes into the Axial code of polychronic behaviour. In addition, any temptation to develop site design as a

separate theoretical category was tempered by the understanding of shop design issues in consumer behaviour, while an understanding of HCI ensured that technical experience and self-confidence were not ignored in developing the Self-Efficacy category. In effect, the cross-disciplinary experience helped to minimise temptations to "force" data into categories.

10.2.2 Documenting the e-CF

The iterative and interconnected nature of the process presented a particular challenge in documenting the development of the e-CF. As Charmaz (2006) observed about documenting the results of Grounded Theory research, "Published writers often act as if they proceeded on a single path with a clear destination from choosing their topics to writing their conclusions. More likely, the path is not single, or the destination clear." Robson (2002) compared presentation of quantitative research, where data gathering and analysis are discrete sequential processes, with the presentation of qualitative research where, particularly in the case of Grounded Theory, data gathering and analysis are "intimately interconnected".

The development of the e-CF was not a linear progression, but rather an iterative process of analysis and refinement of codes into theoretical categories. If the description offered in Chapters 3 and 4 of the e-CF development presents the process as a sequential one, this was in order to present a clear and coherent depiction of the e-CF and its derivation. Strauss and Corbin (1998) noted that the complexity of the data and the data gathering force the Grounded Theory researcher to be clear on what the "main analytical message" will be and from there decide on what is the appropriate amount of detail needed to convey this message, which was the approach taken in Chapters 3 and 4 of this thesis. As Alan Perlis noted, "You can't communicate complexity, only an awareness of it" (Perlis, 1982).

10.2.3 Limitations of the e-CF and Future Research

Construction of the e-CF used 24 participants in three shopping domains, with each domain selected to represent a particular set of shopping habits and attitudes. The case was made in Chapter 4 that saturation was achieved when the leisure travel participant data was processed. However, expansion of the e-CF development to include data from other domains, such as personal purchases of music, would be useful in further testing the degree of saturation achieved.

While every attempt was made to recruit participants from as wide a pool as possible in order to avoid some of the demographic biases of previous studies, logistical considerations meant that the majority of the participants in the e-CF development were

UK nationals and all resided in the UK. In addition, while participant recruitment was successful in going beyond the pool of students that typifies much of the academic research into e-Commerce, most if not all participants were from similar socioeconomic groups. Consequently there may still be a number of psychographic biases in the data used to construct the e-CF and it would be useful to expand development of the e-CF to include data from other socioeconomic groups and nationalities.

10.3 Reflections on the Case Studies

Before reflecting on the case studies, it is worth recapping the results of each study. The online Christmas shopper depicted in Chapter 6 was a consumer confident in their use of the Internet and online shopping, a multi-tasker who valued choice, with a hint of discrepancy between their perception of themselves as independent and cautious consumers and their need for assistance and value for money. The online grocery shopper depicted in Chapter 7 was one confident in their use of the Internet and knowledgeable about their household grocery needs, a time conscious shopper who was worried about losing control of product selection and opportunities for experimentation. The online leisure travel shopper depicted in Chapter 8 was a consumer virtually obsessed with price and price comparison activity, whose need to establish a basic reference price of a prospective journey before deciding on a purchase was the theme around which all other behaviour centred.

10.3.1 Limitations of the Case Studies and Future Research

There were a number of limitations uncovered in the case studies that suggest areas for future research. All three of the case studies were conducted in the UK and therefore reflect the experiences and attitudes of UK online consumers. This geographic limitation will naturally introduce a number of biases. Domains based on religious or cultural activities such as Christmas shopping would not exist (or at least would manifest themselves differently) in other countries. The UK online grocery shopping industry is markedly different from the US one, where operations cannot be realistically be run on a national basis and attitudes towards food shopping in the UK are likely to be different from those of countries such as France or Italy. The nature of leisure travel shopping may also be different in countries such as the US, where domestic travel is likely to be more of an issue than international travel. Consequently, it must be stressed again that this thesis is a study of UK online consumers and consideration should be given to repeating the case study surveys and site explorations (with local adaptations where relevant) to understand online consumer behaviour in other countries.

Another limitation of the grocery and Christmas case studies in particular is that they were all administered online. This would of course introduce bias as those respondents who may have shopped online but did little else on the Internet (such as participant GP6), would not be included in the results. Administration of the survey in person or on paper would not only provide a bigger and possibly more representative pool of respondents, but would also provide scope for gathering information on consumers who choose not to shop online.

The grocery shopping survey, which was designed to gather information on both online and non-online grocery shoppers, suffered from some inconsistencies in questions between the two groups. This had a particular impact in trying to explore the relationship between the e-CF themes of Beliefs and Connections, specifically what, if any, loyalty to supermarket chains existed and whether than loyalty transferred from the terrestrial to the online environment (and vice versa). Consideration should be given to revising this survey to ensure that questions that might affect choice of terrestrial supermarket, such as location, are included in the next iteration.

Finally, as with the development of the e-CF, the research in this thesis was limited to three domains. There are a number of other shopping domains that are worthy of exploration, particularly those related to personal shopping, which would give the research more insight into how online consumers behave when shopping to satisfy their own needs and desires rather than those of their household, family or friends.

10.3.2 The Online Consumer and Power

Schiffman and Kanuk (2004) describe the need for power, particularly "an individual's desire to control his or her environment", as a key component of consumer motivation. This need for power over the shopping environment and the concerns about losing this power are themes that unite the three case studies detailed in this thesis. The Christmas shoppers saw the product selection available online as empowering ("The world's your oyster"), valued being able to decide when and where to shop ("I just move over, in my office and shop") and may have been more susceptible to persuasive media then they would have liked to admit. The grocery shoppers keenly felt a loss of control over product selection and experimentation in shopping online, but also valued the control over time that online grocery shopping gave them. The online leisure travel shopper needed to find the lowest possible price for a journey in order to establish control over their decision making process, even though they rarely purchased the cheapest travel option.

This need for empowerment is also a hallmark of the postmodern consumer, who needs to feel that he/she is an "equal participant" in the production of not just his/her shopping experiences but also of his/her self (Firat & Venkatesh, 1995). However, the experience of the online grocery shopper also demonstrates that while the Internet is a key tool of the postmodern consumer (Szmigin, 2003), increased interactivity does not always lead to increased control.

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Appendix A – Open Coding of Grocery Shopping Participants

Open Codes	Examples
Degree of experience using computers	Expressed in years, applications used, hardware used. (all participants)
Degree of experience using the Internet	Expressed in years, types of Internet-activities used (all participants)
Levels of confidence in use of computers and/or Internet	"I know nothing about computers" (GP6) "Really good" (GP8)
Levels of self-sufficiency in using computers or the Internet	Description of self as preferring to try new things on the Internet without assistance. (GP5) Other claims to be "self-taught" on using Internet (GP2, GP5)

Open Codes	Examples
Previous levels of product service knowledge	"I like having the food and knowing what I'm getting and preparing it" (GP7) Previous employment in related industries(GP1) "I've always liked food" (GP4) "I just like food…I enjoy cooking" (GP7)
Willingness to allow the vendor to control product selection	"No substitutions" (GP2) "I'm fussy about what I get" (GP4) "I don't generally order fruit online…I want to look at it and buy it that way" (GP5)
Willingness to purchase unfamiliar products/services online	Actual purchases of unfamiliar products/services online: Convenience tuna snack – GP4
Degree of experience in online shopping within the domain or other domains	Expressed in years, amount of online shopping done, variety of domains used (all participants)

Open Codes	Examples
Levels of confidence in ability to successfully find and purchase products or services online	"[online shopping is] too complicated" (GP3) Reduction of online shopping due to problems with a previous book purchase. (GP5)
Types of products/services/domains used in past	"Just about everything" (GP8) "All sorts of shopping" (GP7) Travel, food, theatre tickets (GP3) CDs, DVDs (GP2) Only groceries (GP6) CDs, Books, DVDs (GP8)
Attitudes towards risks of online shopping	"I would never buy something important, I don't think, on the Internet" (GP3)
Selection criteria for vendor	TV Advert (GP7) Recommendations from friends (GP1, GP4)

Open Codes	Examples
Storing of login/financial details online	Stored details (GP5, GP6) Did not store details (GP1, GP7)
Confidence in vendor performance	"Generally, everything I want that is fairly ordinary they will have in stock" (GP4) "The system works well for me, the online shopping works well for me." (GP3)
Attitudes towards using familiar vendors versus new ones.	No interest in trying alternative vendors (GP5, GP6, GP7, GP1) "I'm one of these people that changes supermarkets…I get attached to a supermarket for a few months and then I get bored and I try another one." (GP8)
Expressions of vendor/brand loyalty	Consistent use of particular vendor (GP3, GP5, GP4, GP6, GP7) "The system works well for me, the online shopping works well for me. The things that irritate me more about them [grocery vendor] are the products that I don't like" (GP3) Claims vendor has best selection (GP4) "Well, they [grocery vendor[were the only people that delivered in Suffolk" (GP8)

Open Codes	Examples
Attitudes to banners, pop-ups, vendor or customer recommendations	Doesn't look at promotions because "...generally they don't apply to me" (GP5)
Responses to cues during shopping sessions	Specific refusal to examine products based on cues (GP3) Examination of product based on cue (GP8) Purchase of product based on cue (GP7)
Concerns about obtaining value for money	"I used to go shopping once a month and I spent 100 on the grocery shopping for a month and it was quite a challenge and I was very price conscious very...deal conscious...that sort of thing." (GP8) Use of discount offers, e-coupons, etc. (GP2, GP6)
Perceptions of cost-effectiveness of online shopping	"The Web does save money...because you don't buy all the extras" (GP8) "We only get what we need [when shopping online]" (GP7)
Use of online shopping to lower costs	Bulk purchases or other quantity/packaging adjustments (GP2, GP5) Schedules for discounted delivery (GP2, GP5)

Open Codes	Examples
Searches for products with more than one vendor to compare prices	GP2
Perceptions of price competitiveness between vendors or channels	"Probably would be more economical to get our food more regularly from Tesco" (GP5) "I enjoy that [comparison shopping]. I get a buzz out of finding what I think is the best deal" (GP4) "In fact, Morrison's has stopped me shopping 100% online, because they're so well priced...If Morrisons offered an online service I would go to Morrisons all the time. And if ASDA offered an online service in this area I would probably use them." (GP8)
Others present when shopping online	Shopped with someone present (GP1, GP2) Shopped alone (GP3-8) Contact with others during shopping (GP6, GP7)

Open Codes	Examples
Impact of household on selection, shopping lists, etc.	List assembled alone (GP4, GP7) Lists based on input from others (GP1, GP2, GP5, GP6, GP8) "...It's a very good thing for people who have children to get into because you can even share the list with your kids and say 'look guys, this is what we had last week, what would you like next week?' without putting it in front of them so they can grab it off the shelf. They can't grab the picture off the Internet" (GP8)
Location of observations	Home (GP1, GP2, GP6) Office (GP3, GP4, GP5, GP7)
Attitudes towards locations	"And I don't have to have interaction with anybody. I don't have to go to the supermarket, I don't have to do my hair, I can be sitting in my pyjamas. I don't have to make the effort of getting up, ready, getting my shoes on and out the door, all that stuff" (GP8)

Open Codes	Examples
Site graphics or pictures	"The [online] supermarkets that have little pictures are helpful." (GP8) "The pictures don't tell you very much" (GP4) Turned pictures/graphics off (GP3, GP7) Specifically examined picture/graphics (GP2, GP4)
Layout/Navigation	Difficulty navigating to/through site (GP3, GP6) Easily navigated to/through site (GP1, GP4)
Bookmarks	Doesn't use bookmarks for shopping (GP6, GP7)
Culture	GP2 – Scandinavian GP7 – North American GP1, 3-6, GP8 -- British

Open Codes	Examples
Values	Fair Trade purchases (GP4) Organic purchases (GP4) Environmental concerns (GP2)
Lifestyle	"There are more interesting things to do than wander around a supermarket" (GP3) Health-related purchasing (GP4)
Day/time patterns/preferences	Set time of day (GP2, GP3) Set day of week (GP3, GP5, GP6) Set frequency (GP3,GP6, GP7)
Delivery scheduling	Set day of week (GP3, GP5, GP2, GP7) As soon as possible (GP6) Dependant on schedule (GP4)

Open Codes	Examples
Concentration on task at hand	"When I do the shopping, I have to concentrate" (GP2) "I don't faff around with it" (GP6)
Other applications running	GP4, GP7, GP8
Phone calls, email, IM, visitors	GP7
Preparation & use of shopping lists	GP1, GP2, GP5, GP7
Use of 'Last Order/My Favourites'	My Favourites – GP3, GP4, GP6, GP8 Last Order – GP7 Neither – "We always want to see what else is on offer" (GP2)

Open Codes	Examples
Decision criteria for non-list purchases	Defer to partner for decision (GP2, GP5) Brand name (GP2, GP5, GP7) Product description (GP2, GP5, GP7) Picture (GP2) Price (GP1, GP2, GP6) Continual basket review to check budget or variety (GP1, GP4)
Browsing within a site	GP1, GP4 "I'll dip in and out" of categories (GP4)
Searching within a site	GP1, GP2, GP3, GP4, GP5, GP6, GP7
Payment	Credit card -- All (required by site)
Site registration	All (required by site)

Open Codes	Examples
Delivery destinations	Home (all) Provides specific additional location instructions (GP3)
Previous experience with terrestrial channels	Past use of terrestrial supermarkets (all participants) Past use of specialty shops, farmers markets, etc. (GP2, GP3, GP7) Past employment with supermarket (GP1)
Current use of terrestrial channels	Regular use of supermarkets (GP2, GP7) Irregular use of supermarket (GP1, GP4, GP6, GP8) Regular use of specialty shops, farmers markets, etc. (GP3)

Open Codes	Examples
Previous positive or negative terrestrial experiences	Problems with journey time (GP7) Problems with total time (GP6, GP8) Problems with crowds, queues (GP4) Problems with transporting purchases (GP1, GP2, GP6, GP8) Problems with children (GP7, GP8) Problems with out of stocks (GP2) Enjoyment of product selection (GP1, GP2, GP3, GP4, GP6, GP7, GP8)
Preferences and decisions based on past terrestrial experience	"I've always preferred individual shops" (GP3) "…when I do it online it's made me stricter, as in I spend less. I'll spend 65 quid if I do it online but go into the shop I'll spend 120" (GP8)

Open Codes	Examples
Previous positive or negative online experiences	Problems finding items (GP2, GP4, GP6, GP7) "…annoying because you know they have it. It's just hidden somewhere." (GP2) Out of stock items (GP4) Incorrect items delivered (GP4, GP6) Poor quality of items (GP1, GP3) "Occasionally I'm sure I ordered something but it doesn't show up and is not on the list" (GP4) Long time to place order at first (GP7) "You get the same things every time. You have a hard time finding new things." (GP5) On-time delivery (GP3) "The system works well for me" (GP3)

Open Codes	Examples
Preferences and decisions based on past online experience	Decision to purchase item terrestrially due to expectation it cannot be found online (GP2 & Pudding Rice, GP4 & Chestnuts, GP7 & Capers) Decision to purchase item terrestrially due to expectation it will be out of stock online (GP4 & beans) Decision to purchase item terrestrially due to delivery of incorrect item (GP4 & courgettes) Decision to issue selection instructions due to problems with previous substitutions (GP4 & lasagne) Decision to not issue selection instructions due to satisfaction with previous substitutions (GP6) Conscious decision to not use online vendor's terrestrial branch for variety (GP6) Decision to use particular vendor based on selection (GP4)
Online shopping offers more/less control	Views suggested products as "manipulation" (GP3) "I'm fussy about what I get and I like to have choice" (GP4) "I like having the food and knowing what I'm getting and preparing it" (GP7) "When I do it [grocery shopping] online it's made me stricter" (GP8)

Open Codes	Examples
Delegation of product selection to vendor	Use of Notes to specify no substituions (GP2) Use of Notes to give instructions on individual items (GP4 – all fruit items, GP7 – bananas) "I don't generally order fruit online…I want to look at it and buy it that way" (GP5)
Pleasure/Entertainment	"I get a buzz out of finding what I think is the best deal" (GP4) Positive reactions to first encounter: "Thrilled" and "wonderful" (GP3) "We will do this forever!" (GP2) "I like having the food and knowing what I'm getting and preparing it" (GP7)
Purchase of new/unfamiliar items	"You get the same things every time. You have a hard time finding new things [online]" (GP5) "I like to go and look [in a supermarket], rather than when you're online and you kind of have to know what you want…" (GP8) Actual purchase of new/unfamiliar item (GP4 – yellow beans)

Appendix B – Open Coding of Christmas Shopping Participants

Open Codes	Examples
Degree of experience using computers	Expressed in years, applications used, hardware used. (all)
Degree of experience using the Internet	Expressed in years, types of Internet-activities used (all)
Levels of confidence in use of computers and/or Internet	"I didn't feel very versatile on the Internet until maybe '98 or '99" (XP6)
Levels of self-sufficiency in using computers or the Internet	"I pretty much taught myself" (XP6) Other claims to be "self-taught" on using Internet (XP1, TP3)
Previous levels of product service knowledge	Descriptions of level of knowledge about products on Christmas list (all participants)

Open Codes	Examples
Willingness to purchase unfamiliar products/services online	Actual purchases of unfamiliar products/services online: CD of classical music – XP1, Theatrical Lighting equipment – XP2 Digital Camera – XP4, Novelty Items – XP5 CD of folk songs – XP7 Expressed intentions to purchase unfamiliar products online at later date Ski gloves, Blood pressure gauge – XP8, Antique book – XP9 Expressed intention to go to terrestrial shop for unfamiliar item at later date Computer Games – XP3, Socks (for parent) – XP1 "If I've got a number of items to buy, I'll generally have a look online, do my research online and if I can come across something and buy it cheaply then I'll do so" (XP4) "I would generally buy something I'm familiar with online, I think" (XP6) "I buy things [online that] I know how they work and what they are like" (XP6)

Open Codes	Examples
Degree of experience in online shopping within the domain or other domains	Expressed in years, amount of online shopping done, variety of domains used (all participants)
Levels of confidence in ability to successfully find and purchase products or services online	"[online shopping is] generally more my style, which is randomly rummaging around" (XP4) "The world opened up to me" (XP6)
Types of products/services/domains used in past	"All sorts of shopping" (XP4, XP9)

Open Codes	Examples
Attitudes towards risks of online shopping	"I think a few years ago my inclination towards shopping online would have been lessened considerably because…my perception was that there were less retail establishments and less reputable companies that were selling stuff online that I'd be wanting to buy. The fact that everyone's joined the 'Information Age'…encourages me to be more trusting towards shopping online." (XP4) "…for reasons that don't have any basis in fact I'm uncomfortable with having loads of other windows open if I'm going to be sticking my card details online a website" (XP4) Lack of knowledge or concern about SSL or related areas (XP2) "[3 years ago] I wasn't sure it was safe" (XP5) "I'm not bothered either way, because I check my credit card statements religiously and ruthlessly so I count on that as my check" (XP5) "At first I was nervous about giving them credit card information but now it's 'who cares'?...doesn't bother me at all now" (XP6) "I'm more assured of my [shopping] security at home than I am here [at office]" (XP8) "...if I see on my credit card that I was charged something different I have that piece of paper [email confirmation of purchase]…that's why they tell you to print it out so that you can come back and say 'that's not what it costed"

Open Codes	Examples
Selection criteria for vendor	"Professional" look to website (XP2) Sticks to "core set" of online shops (XP2, XP5) Recommendations from friends or reviews (XP4) Existence of vendor's telephone number (XP4) Previous knowledge of vendor (XP2) Previous use of vendor's terrestrial channels (XP5) Vendor's country (XP7) "I tend to stick to the fairly mainstream shops" (XP9) "I don't trust it [eBay]" (XP9)

Open Codes	Examples
Storing of login/financial details online	Stored details (XP1, XP2, XP6, XP7) "I figure if there's one stupid thing that happens then I'll never do it [store credit card details online] again" (XP6) "I get really irritated having to put my card details in over and over again" (XP9) Did not store details (XP3, XP4) Insistence on off-line payment of online purchases over £100 (XP7)
Confidence in vendor performance	Examination of customer reviews (XP4) Preference for German vendors due to T&Cs (XP7) "I know [vendor]...so if they're selling a product then I would trust to buy from them" (XP8)
Attitudes towards using familiar vendors versus new ones.	Preference for using same shops, but will experiment (XP3, XP5, XP7) "I have a pretty definitive knowledge of which websites will give me the best deal" (XP8)
Expressions of vendor/brand loyalty	"I know [vendor]...so if they're selling a product then I would trust to buy from them" (XP8) "I often go to Amazon...that's easiest" (XP6)

Open Codes	Examples
Attitudes to banners, pop-ups, vendor or customer recommendations	Generally "doesn't take much interest" in recommendations (XP1) "I'm more likely to look at the reviews if I'm unsure of the thing I'm buying. If I'm pretty certain of what I want then I disregard the reviews" "...might be something that I thought about before, forgot about, wasn't planning to buy but then I...come across it and think 'oh, this is a chance to get it'" (XP2) "I don't take much notice of them" (XP3, XP4) "It just pops up and annoys me" (XP6)
Responses to cues during shopping sessions	Examination of product based on cue (XP1, XP3, XP9) Purchase of product based on cue (XP1)
Responses to newsletters or other email from vendor	Subscriptions to newsletters (XP1) Opting our of newsletters (XP3) Use of newsletters to start product search/selection (XP5)

Open Codes	Examples
Concerns about obtaining value for money	"I'll weigh so many variables – the price, the size…versus it's on sale versus she [daughter] really likes it or I do." (XP6) Use of discount offers, e-coupons, etc. (XP5, XP6)
Perceptions of cost-effectiveness of online shopping	"Maybe I buy more stuff because it can be so easy on something like Amazon" (XP2) " The [terrestrial] store can be a dangerous thing…you get impulse buying…and by the 24th of December I've got 10-15 different items I didn't want, if I've gone into a store, or that I didn't plan to get." (XP6)
Use of online shopping to lower costs	Bulk purchases or other quantity/packaging adjustments (XP5) Schedules for discounted delivery (XP2, XP4)
Use of price comparison engines	XP4, XP8 Price comparison engines are "confusing" (XP2)
Searches for products with more than one vendor to compare prices	XP1, XP3, XP4, XP8

Open Codes	Examples
Perceptions of price competitiveness between vendors or channels	[comparison shopping is] "well worth doing" (XP3) "If it is a book I can get here for 7 or here for 8 pounds but it takes me an hour to find the other one, it's not worth the pound difference" (XP7)
Others present when shopping online	Shopped alone (all Christmas) Contact with others during shopping (XP5, XP7, XP9)
Impact of household on selection, shopping lists, etc.	Lists based on input from others (All Christmas participants)
Location of observations	Home (XP3, XP6, XP7, XP9) Office (XP2, XP5, XP8) Computer Lab (XP1, XP4)

Open Codes	Examples
Attitudes towards locations	"This is comfortable, I just move over, in my office and shop" (XP5) "I think it's also laziness. It's warm and cosy in my office and in my home. And of course you can take a break from it, if you need to go to the toilet, if you want to have a pizza, whatever, you can just get up and walk away" "You don't need to move yourself" (XP8)
Site graphics or pictures	"If I wanted a [product] picture I could just Google for a picture" (XP1) "If I couldn't get a picture from this website I think I'd be looking at the model and trying to get a picture from another website" (XP4) "If I want to click on a picture and see a larger detail I really want to see it, because all you're dealing with is a 2-dimensional depiction and if it's tiny, that does nothing for me" (XP1) "I make a connection when I see the picture" (XP7) Specifically examined picture/graphics (XP1, XP3, XP4, XP7, XP8)

Open Codes	Examples
Layout/Navigation	Easily navigated to/through site (XP1, XP7) "I just go there for the content rather than the design" (XP1) "I don't like very cluttered displays" (XP2) "If it's a badly designed website I'm going to feel that it's going to take me longer to find something" (XP8) "If it's clunky and hard to get around the site I find that annoying" (XP6)
Bookmarks	Used bookmarks during session (XP9) Doesn't use bookmarks for shopping (XP3, XP4, XP7, XP8, TP3) "I keep nearly all web addresses in mind. It's not difficult" (XP7) "…with a bookmark it's just the web link. That means nothing to me when I come back to look at it" (XP4)
Culture	XP6 – North American XP7 -- German Country of origin affected choice of site (XP7)
Lifestyle	"I prefer buying for myself than buying for other people" (XP1)

Open Codes	Examples
Day/time patterns/preferences	Set time of day (XP5, XP7)
Delivery scheduling	Dependant on schedule (XP4, XP8)
Concentration on task at hand	"I'm not a great multi-tasker, so usually I just concentrate on the thing at a time" (XP3)
Other applications running	XP1, XP7, XP9
Phone calls, email, IM, visitors	XP2, XP1, XP7, XP8, XP9
Multiple browser windows or tabs	XP7, XP8, XP9
Multi-shopping	XP8, XP9
Preparation & use of shopping lists	Written list (XP2, XP3, XP6, XP8, XP9) Less than 5 people (XP1, XP7, XP8) 6-15 (XP2, XP6, XP9) Over 15 people (XP3, XP4, XP5)

Open Codes	Examples
Decision criteria for non-list purchases	Description (XP1) Picture (XP4, XP6, XP7) Price (XP1, XP4, XP7, XP8) Brand (XP1) Customer Reviews (XP1, XP4) Check with recipient (XP3) Ask partner/family (XP4, XP7, XP9)
Browsing within a site	XP3, XP9 "I don't enjoy browsing for things online particularly" (XP2) "If I know what I'm after I don't ping around the site" (XP8)

Open Codes	Examples
Search engines	Price comparison engine (XP4) Google (XP1, XP4, XP8) AllTheWeb (XP3) "I improve upon my search terms as I learn more" (XP8)
Searching within a site	XP1, XP4, XP5, XP6, XP7
Payment	Credit/Debit cards (XP1, XP2, XP3, XP4, XP5, XP6, XP8, XP9) PayPal (XP1,XP4, XP7) Cheque (XP9) Bank transfer (XP7)
Site registration	Registered with site (XP1, XP5, XP6, XP7, XP9) "I get really irritated having to put my card details in over and over again" (XP9)

Open Codes	Examples
Delivery destinations	Home (XP2, XP3, XP4, XP7, XP8, XP9) Workplace (XP5) Other – where holidays will be spent (XP1, XP2, XP6, XP7) Recipient (XP2, XP3)
Delivery methods	Post (all) "I don't want to have a $1000 digital camera sent through the mail" (XP4) "I don't have to haul it home, it's done, it's more convenient" (XP6)
Customer support	Selects gift wrap options (XP3) Emails vendor for support (XP2, XP9) Phones vendor for support (XP3, XP4) "I don't like things where people just get a parcel by Amazon" (XP7)

Open Codes	Examples
Previous experience with terrestrial channels	"I just don't like shopping in shops…I just get this feeling of 'gotta get in gotta get out' so I have no chance to look and it's because everything's not ordered neatly and I can't search for things in a high street shop. I usually just go straight over to someone, ask them where this item is, look at it and go. I think there is more of a pressure to sell when you're in a store, either directly or indirectly." (XP8) "Oh, I love catalogues. They're great. You can see the picture of the thing, you don't have to go to the store" (XP6) Used terrestrial to get ideas for gifts (XP1, XP2, XP4)
Current use of terrestrial channels	"I like seeing things in the shop that trigger ideas" (XP2) "If I'm looking for ideas I'll probably do that in town" (XP2) "I quite like having a catalogue to look through first and then going online to do the actual shopping" (XP5) Expects some terrestrial usage (XP1, XP2, XP3, XP5, XP6, XP7, XP9)

Open Codes	Examples
Previous positive or negative terrestrial experiences	Dislike of seasonal crowds (XP2) "I do enjoy the lights…more ambivalent about the music but yeah, I like the festive atmosphere" (XP2) "I like to go and see what's new every year and have a look round at all the pretty things that they try and put on for Christmas" (XP3) "the thing with catalogues is that you can do it in your own time, when you're ready to, you can have a look, you can have a think about it, you can go back to it." (XP5) "I don't like catalogue shopping. I don't know why" (XP7)

Open Codes	Examples
Preferences and decisions based on past terrestrial experience	Will use terrestrial to get ideas for gifts (XP2, XP6, XP7) Will use terrestrial to inspect item before purchase (XP7, XP8) Will use terrestrial for the atmosphere (XP3) Will use catalogues because easier to find/browse (XP3, XP5) Will use website of favourite catalogue company (XP5) Will use terrestrial for last-minute purchases (XP5, XP9) "…it's difficult to go out with a clear notion of what I'm going to buy for whom…so I go out with an open mind" (XP4)
Previous positive or negative online experiences	"It's much easier to browse the catalogue that it is to browse their online site, because of the way they set it up" (XP5) "I think shopping online has made it [Christmas shopping] less stressful, rather than more fun" (XP5) Positive experiences with delivery/service (XP5, XP6 Negative experiences with delivery/service (XP6)

Open Codes	Examples
Preferences and decisions based on past online experience	Decision to shop online due to more experience in online shopping overall (XP2, XP3, XP5) Decision to shop online due to experience with cost-savings online (XP4) Decision to use particular vendor due to past non-Christmas experiences (XP5, XP8) Decision to use particular vendor due to past Christmas experiences (XP1 "If I've got a number of items to buy, I'll generally have a look online, do my research online and if I can come across something and buy it cheaply then I'll do so. But I wouldn't normally decide, right this year I'm doing x% of Christmas or birthday or whatever shopping online." (XP4)

Open Codes	Examples
Online shopping offers more/less control	"You could find pretty much anything you wanted [online], which you might not be able to do in a bookshop" (XP2) "Sometimes it's useful to be able to see clothes. Seeing them online is not really the same as seeing them in your hands." (XP3) "The world's your oyster as far as Internet shopping. Everything is available" (XP3) Online shopping is…"generally more my style, which is randomly rummaging around, doing some research" (XP4) "The thing with catalogues is that you can do it in your own time, when you're ready to, you can have a look, you can have a think about it, you can go back to it. And online is very similar." (XP5) "…the benefit of ordering online is that you've got access to their whole stock whereas if you go to the shop you just have whatever they happen to have in that shop" (XP5) "I won't be sidetracked into…an impulse purchase [online]" (XP6) "And of course, you can take a break from it [online shopping], if you need to go to the toilet, if you want to have a pizza, whatever, you can just get up and walk away" (XP8)

Open Codes	Examples
Delegation of product selection to vendor	"I like to choose my vegetables…the problem that I have with the very idea of doing it online is I don't want someone else doing the substitutions for me" (XP5) "It's a strange feeling to buy food online. I enjoy going to shops, seeing the food and not buying it somewhere? Maybe you get old food…I don't like it." (XP7)
Pleasure/Entertainment	"…I think I'm probably addicted to e-Bay" (XP1) "I don't enjoy browsing for things online particularly" (XP2) "I'm not a great fan of retail shopping" (XP4) "I just loved looking at the books [on Amazon] and I would fill up my basket with loads of books and every so often would buy some of them…they way you could just spend ages just looking for books and linking to other books…I just enjoyed being there. And because I didn't really have money to buy books or records or anything I would shop online 'virtually' but not actually buy them so it was kind of getting the shopping experience without having to spend the money." (XP5) "I think shopping online has made it [Christmas shopping] less stressful rather than more fun" (XP5) "In general, just the [Christmas] shopping, the waste of it, is annoying me. Just to go out and buy items to give

Open Codes	Examples
	people items and they give you items. It's just not that much fun anymore" (XP6) "[Online shopping] is entertaining somehow, because you see new things, even if you're not looking for them, you see them and even if you're not interested in them now they give you some creative experience to combine other things…" (XP7) "You just sit here typing the web page, you look for the item you want…You can just do it online. You don't need to move yourself. That's the fun with that. " (XP7) "I do like my shopping" (XP9)

Open Codes	Examples
Purchase of new/unfamiliar items	"I like to go and see them first, feel them, get a sense of their proportions and weight, which is something you can't really do on the Internet" (XP1) "…on the plus side the Internet sometimes throws up new ideas." (XP3) "I buy things [online] I know how they work and what they are like, not things I need to try." (XP7) "[online shopping] is entertaining somehow, because see you new things, even if you're not looking for them, you see them and even if you're not interested in them now they give you some creative expereience, to combine other things…or maybe you come back to it later." (XP7) Search/purchase for new/unfamiliar item online (XP4 – digital camera, XP5 – various toys, XP8 – ski gloves, blood pressure gauges)
Use of new/unfamiliar vendors	First time Christmas shopping online (XP3) "I tend to stick to the fairly mainstream shops" (XP9) Use of new/unfamiliar vendors (XP3 – various gardening equipment sites, XP4 – digital camera vendors, XP8 – ski gloves, blood pressure gauges)

Appendix C – Open Coding of Leisure Travel Shopping Participants

Open Codes	Examples
Degree of experience using computers	Expressed in years, applications used, hardware used. (all participants)
Degree of experience using the Internet	Expressed in years, types of Internet-activities used (all participants)
Levels of confidence in use of computers and/or Internet	"Comfortable" (TP4) "I think if you gave me a box and the bits I could build you one" (TP1)
Levels of self-sufficiency in using computers or the Internet	Other claims to be "self-taught" on using Internet (TP3)
Previous levels of product service knowledge	Experience in international travel, expressed in number of years or trips (all Travel participants)

Open Codes	Examples
Willingness to purchase unfamiliar products/services online	Expressed intentions to purchase unfamiliar products online at later date Tickets to Stockholm (TP4) Tickets to Australia (TP1) Holiday in Italy (TP2) "If you do your shopping online then you have to know exactly what you want" (TP5)
Degree of experience in online shopping within the domain or other domains	Expressed in years, amount of online shopping done, variety of domains used (all participants) "I wouldn't say I browse the Internet looking for things to purchase, because I don't" (TP1)
Types of products/services/domains used in past	Books, groceries, travel, electronics (TP4)

Open Codes	Examples
Attitudes towards risks of online shopping	"There will always be a risk. There's a risk going out into the street and using your card in an ATM, there's a risk going into the bank and being seen carrying a lot of cash…life is a risk and you just have to do whatever…" (TP1) "...if I see on my credit card that I was charged something different I have that piece of paper [email confirmation of purchase]…that's why they tell you to print it out so that you can come back and say 'that's not what it costed" (TP2) "Well, I've done it [used a credit card online] once and once you've done it the information's out there in the ether so I sort of reckon it's not very high risk to do so again" (TP5)
Selection criteria for vendor	Looks for industry certification mark (TP1) "You try to stick to sites that are recommended or look quite official, which you've heard of…things you see advertised on television and through periodicals. I wouldn't go to some unknown unheard of website and start purchasing things" (TP2)
Attitudes towards using familiar vendors versus new ones.	"I'll get it [any item] from a new vendor if that's going to be the best deal and that's the item I want" (TP1)
Expressions of vendor/brand loyalty	"I'll get it [any item] from a new vendor if that's going to be the best deal and that's the item I want" (TP1) "I hate them [airlines] all actually." (TP5)

Open Codes	Examples
Attitudes to banners, pop-ups, vendor or customer recommendations	"I never buy anything, whether I'm in a shop or on the Internet, unless I actually want it" (TP1) "I wouldn't buy something that's just been released because somebody said it's good" (TP1)
Responses to cues during shopping sessions	Examination of product based on cue (TP1, TP3)
Responses to newsletters or other email from vendor	Subscriptions to newsletters (TP2, TP3, TP4) Opting our of newsletters (TP1, TP5) Use of newsletters to start product search/selection (TP2)
Concerns about obtaining value for money	"Number 1 criteria would be price, number 2 criteria would be timing. If I can't find something that goes at the right time then I'm not going to buy a cheap fare just because I can." (TP4) "Obviously you'd like to know what the price right here, when I see it, which is this per person, insurance, VAT, total price." (TP3) "I don't necessarily want the cheapest." (TP5)

Open Codes	Examples
Perceptions of cost-effectiveness of online shopping	Selected online channel due to perceived price differential (all Travel shoppers)
Use of online shopping to lower costs	Selected online channel due to perceived price differential (all Travel shoppers)
Use of price comparison engines	TP2 "I thought it [flight price comparison engine] was the greatest thing 4-5 months ago but realised that first of all it's not looking at <u>all</u> the discounted airfares. It's looking at quite a large subset but not all of them" (TP3) "I'll look at the ones I know, the sort of cheap ones, but then I'll also look at…Cheapflights, which will look at all different airlines" (TP5) "[Cheapflights is]…a little bit tedious, because it comes up with various options and then it tells you the website to go to so you get directed to another websites and then…you've got to start again with <u>them</u> and then you find that what they're offering actually isn't what Cheapflights have declared…it's a little bit artificial I think" (TP5)
Searches for products with more than one vendor to compare prices	All Travel participants

Open Codes	Examples
Perceptions of price competitiveness between vendors or channels	"Farmers never accept the prices that are written down. They will always barter and you can't do that via the Internet" (TP1) Selected online channel due to perceived price differential (all Travel participants)
Others present when shopping online	Shopped alone (TP1, 2, 4) Contact with others during shopping (TP3)
Impact of household on selection, shopping lists, etc.	List assembled alone (TP4) Lists based on input from others (TP1-3)
Location of observations	Home (TP1, TP3) Office (TP2, TP4)
Attitudes towards locations	"...if you're sitting home quietly with a cup of tea and you can walk in and out of the room and think...you can spend hours [deciding]" (TP1)

Open Codes	Examples
Site graphics or pictures	"I'm not too concerned about the travel website's pictures. If I want to find out about that stuff I'll go to...Rome websites, Rome books..." (TP2) Specifically examined picture/graphics (TP2)
Layout/Navigation	Difficulty navigating to/through site (TP3, TP4) "...a lot of the [Cyprus tourism] websites I found were really really difficult to follow" (TP4)
Bookmarks	Doesn't use bookmarks for shopping (TP3) "If...I know the URL then I find it just easier to type it in" (TP3) "If there's something that I've used a lot, but can never remember what the...like Oanda.com...I mean hell, how am I supposed to remember 'Oanda'? It doesn't have any meaning to me whatsoever." (TP4)
Values	Environmental concerns (TP1) "I just don't like O'Leary's [CEO of Ryan Air] attitude to people, life in general" (TP3)

Open Codes	Examples
Culture	TP4 – New Zealand TP2 – North American "I'm also your typical American who doesn't want to wait in line, doesn't want to wait for anything and people are a nuisance sometimes." (TP2)
Lifestyle	"I find it quite isolating I suppose being [online]…I know people find it convenient…but I would just find that very constraining." (TP5)
Day/time patterns/preferences	Set time of day (TP3) After 6pm (TP5)
Concentration on task at hand	"If you've just found a real bargain and you want to book it right then…no, I wouldn't answer anything else" (TP4)
Other applications running	TP1-4 "I just have this feeling that it [running other applications] will make it go even slower. I don't even wiggle the mouse" (TP5)
Phone calls, email, IM, visitors	TP1-4

Open Codes	Examples
Multiple browser windows or tabs	TP1-4
Multi-shopping	TP4, TP3, TP2
Decision criteria for purchases	Price (all) Destination (all) Timing (TP1, TP4) Departure point (TP1, TP3) Location of accommodation (TP2) Picture (TP2)
Search engines	Google (TP1, TP4)
Searching within a site	All
Payment	Debit/Credit card (all) Credit Card via phone (TP4)

Open Codes	Examples
Site registration	Ryan Air – TP3
Previous experience with terrestrial channels	Prior use of travel agents (TP1, TP3, TP4, TP5) "we weren't 100% sure where we wanted to go. We knew we wanted to go to Cyprus but we didn't know which town, which airport...I'd done a search previously on the Internet but there were too many questions and I just wanted to talk to a person" (TP4)
Current use of terrestrial channels	"I couldn't be bothered to go and find a travel agent" (TP1) Uses travel agent for multi-stop travel (TP3) Recent purchase of tour through newspaper advert (TP2) "Every single flight, airline ticket I ever had was online" (TP2)
Previous positive or negative terrestrial experiences	Previous local travel agents were "good" (TP1)

Open Codes	Examples
Preferences and decisions based on past terrestrial experience	Choice of online travel agent site based on previous terrestrial encounters (TP2) Choice of site based on hope of standby-travel deals (TP1) Decision to book local excursions at destination (TP4)
Previous positive or negative online experiences	Problems with non-UK credit card authorisation (TP4) Problems with location of destinations in previous bookings (TP3) Found it "just as easy" to go directly to sites as use Price Comparison engine (TP4) "It's taken me 3 months and 6 emails and 3 letters to get [the claim on travel insurance purchased online] which is perhaps a little inefficient" (TP5) "[Cheapflights is]...a little bit tedious, because it comes up with various options and then it tells you the website to go to so you get directed to another websites and then...you've got to start again with them and then you find that what they're offering actually isn't what Cheapflights have declared...it's a little bit artificial I think" (TP5)

Open Codes	Examples
Preferences and decisions based on past online experience	Books via telephone because of problems with non-UK credit card (TP4) Defers luggage booking based on past experience (TP3) Expects Lastminute.com site to be slow based on previous encounters (TP1)
Online shopping offers more/less control	"I never buy anything, whether I'm in a shop or on the Internet, unless I actually want it" (TP1) "[online shopping gives]…far less control, because you can't talk face to face with somebody and explain what particular things you want" (TP1) "You know, for spamming in emails you have to opt in? There ought to be something like that for these things, for insurance. Which is really quite annoying." (TP3) "I'm not impressed by that. It's really annoying actually." (TP3 on seeing distance of airport to destination city) "That's annoying as well, because it doesn't give you the final figure until you're right at the end, does it? So that changes the maths on what you're doing with other airlines" (TP3) "[would like] abundant search patterns, not just from here to here, it has all the options like how many people, what time of day…easy access to upgrades." (TP2) Number one reason for online travel shopping is "to be in control" (TP5)

Open Codes	Examples
Delegation of product selection to vendor	"I'm not a huge fan of…[package holidays]" (TP3) "I don't buy package holidays" (TP5) Refusal to buy car hire online due to desire to negotiate (TP1) Refusal to buy insurance online due to desire to negotiate (TP2)
Purchase of new/unfamiliar items	"I wouldn't say I browse the Internet looking for things to purchase, because I don't." (TP1) Searching for new/unfamiliar destination (TP1 – Australian, TP2 – Rome, TP3 – Barcelona) Purchase of travel to new/unfamiliar destination (TP4 – Stockholm)
Use of new/unfamiliar vendors	Swedish Railways -- TP4

Appendix D – Christmas Shopping Survey Results

	Freq.	Valid %	Cum. %
Age:			
Under 18	?	?	?
18-24	26	14.2	14.2
25-34	57	31.1	45.4
35-44	49	26.8	72.2
45-60	48	26.2	98.4
60+	3	1.6	100
How many years have you been using the Internet?			
Less than 1 year	0	0	0
1-2 years	1	.6	.6
3-5 years	22	12.2	12.7
6-10 years	76	42.0	54.7
Over 10 years	82	45.3	100
When did you first start Christmas shopping on the Internet?			
2006	13	7.1	7.1
2005	30	16.4	23.5
2004	47	25.7	49.2
2001-2003	62	33.9	83.1
2000 or before	31	16.9	100
How many people were on your Christmas list in 2006?			
1	3	1.6	1.7
2-3	15	8.2	8.3
4-6	36	19.7	19.9
7-10	60	32.8	33.1
11+	67	36.6	37.0

	Freq.	Valid %
Gender		
Male	77	42.1
Female	106	57.9

	Freq.	Valid %
Which of the following statements most closely describes your Christmas shopping in 2006?		
I did most or all of my Christmas shopping on the Internet	50	27.3
I did about half of my Christmas shopping on the Internet	64	35.0
I did some Christmas shopping on the Internet, but most of my Christmas shopping was/will be done in person	69	37.7
Where did/will you buy most of your Christmas presents in 2006?		
On the Internet	85	46.4
On the High Street	62	33.9
Shopping Centre or Mall	21	11.5
Mail Order Catalogues	2	1.1
Craft or other markets	2	1.1
Supermarkets	2	1.1
Speciality Shops	5	2.7
Other	4	2.2
Where did you used to do most of your Christmas shopping in the years before you started shopping on the Internet?		
On the High Street	114	62.3
Shopping Centre or Mall	43	23.5
Mail Order Catalogues	4	2.2
Craft or other markets	5	2.7
Supermarkets	2	1.1
Speciality Shops	11	6.0
Other	4	2.2
What is your primary occupation?		
In full-time employment or self-employed	133	73.5
Student	40	22.1
Retired	2	1.1
Other	6	3.3

	Freq.	Valid %
Did you use the Internet to buy any of the following types of Christmas gifts in 2006? (Select all that apply)		
Books	136	74.3
Music/Films	112	61.2
Perfume/Beauty Products	21	11.5
Electronics	83	45.4
House/Garden	24	13.1
Clothing	49	26.8
Toys/Gifts	76	41.5
Computer Hardware/Software	55	30.1
Food/Drink	36	19.7
Jewellery	17	9.3
Gift Certificates/Vouchers	17	9.3
Other	21	11.5
What part of the world do you originally come from?		
UK/Ireland	137	74.9
Continental Europe	14	7.7
North America	14	7.7
Central/South America	1	.5
Africa	2	1.1
Middle-East	1	.5
Asia	9	4.9
Australia/New Zealand	3	1.6
Other	2	1.1

	Freq.	Valid %	Cum. %
Christmas shopping is easier to do when I'm on my own			
Strongly Disagree	0	0	0
Disagree	17	9.3	9.3
Neutral	16	8.7	18.0
Agree	74	40.4	58.5
Strongly Agree	76	41.5	100

	Freq.	Valid %	Cum. %
I am comfortable using my computer to access the Internet			
Strongly Disagree	0	0	0
Disagree	1	.5	.5
Neutral	5	2.7	3.3
Agree	30	16.4	19.7
Strongly Agree	147	80.3	100
When considering where to buy a gift, price is my first consideration			
Strongly Disagree	5	2.7	2.7
Disagree	37	20.2	23.0
Neutral	45	24.6	47.5
Agree	73	39.9	87.4
Strongly Agree	23	12.6	100
Shopping from catalogues is cheaper than going into a shop			
Strongly Disagree	7	3.8	3.8
Disagree	54	28.6	32.4
Neutral	101	55.5	87.9
Agree	21	11.5	99.5
Strongly Agree	1	.5	100
I like shopping at sites I've used before because that way I don't have to re-enter all my payment and address details			
Strongly Disagree	3	1.6	1.6
Disagree	24	13.1	14.8
Neutral	41	22.4	37.2
Agree	86	47.0	84.2
Strongly Agree	29	15.8	100
I like to browse the various categories on a site when doing my Christmas shopping			
Strongly Disagree	5	2.7	2.7
Disagree	25	13.7	16.5
Neutral	47	25.8	42.3
Agree	97	53.3	95.6
Strongly Agree	8	4.4	100

	Freq.	Valid %	Cum. %
If someone has told me exactly what they want for Christmas, I'm happy to buy the item without doing any product research			
Strongly Disagree	8	2.7	2.7
Disagree	39	13.7	16.5
Neutral	22	25.8	42.3
Agree	86	53.3	95.6
Strongly Agree	27	4.4	100
I prefer to go to a website by typing in its address rather than using bookmarks or favourites			
Strongly Disagree	14	7.7	7.7
Disagree	61	33.3	41.0
Neutral	57	31.1	72.1
Agree	44	24.0	96.2
Strongly Agree	7	3.8	100
I prefer to have someone along with me when I go Christmas shopping			
Strongly Disagree	38	21.1	21.1
Disagree	74	41.1	62.2
Neutral	41	22.8	85.0
Agree	22	12.2	97.2
Strongly Agree	5	2.8	100
I like to thoroughly compare prices before I decide where to purchase any particular Christmas gift			
Strongly Disagree	4	2.2	2.2
Disagree	37	20.2	22.4
Neutral	40	21.9	44.3
Agree	85	46.4	90.7
Strongly Agree	17	9.3	100
I love using online auction sites such as eBay			
Strongly Disagree	32	17.5	17.5
Disagree	60	32.8	50.3
Neutral	41	22.4	72.7
Agree	31	16.9	89.6
Strongly Agree	19	10.4	100

	Freq.	Valid %	Cum. %
I rely on my debit/credit card provider to guarantee the security of my online shopping			
Strongly Disagree	10	5.5	5.5
Disagree	36	19.7	25.1
Neutral	32	17.5	42.6
Agree	82	44.8	87.4
Strongly Agree	23	12.6	100
I would not buy something from a website that didn't have a picture of the product			
Strongly Disagree	1	.5	.5
Disagree	25	13.7	14.2
Neutral	26	14.2	28.4
Agree	80	43.7	72.1
Strongly Agree	51	27.9	100
I would never buy a product on the Internet that I wasn't already familiar with			
Strongly Disagree	10	5.5	5.5
Disagree	92	50.3	55.7
Neutral	45	24.6	80.3
Agree	32	17.5	97.8
Strongly Agree	4	2.2	100
I feel more comfortable buying from a vendor I've never used before if I like the appearance of their website			
Strongly Disagree	4	2.2	2.2
Disagree	35	19.1	21.3
Neutral	47	25.7	47.0
Agree	87	47.5	94.5
Strongly Agree	10	5.5	100
I'm more comfortable buying from an online vendor that also has a shop or other terrestrial presence			
Strongly Disagree	8	4.4	4.4
Disagree	42	23.0	27.3
Neutral	40	21.9	49.2
Agree	70	38.3	87.4
Strongly Agree	23	12.6	100

	Freq.	Valid %	Cum. %
If a site offers the product I want at the price I want, then I don't care what their website looks like			
Strongly Disagree	5	2.8	2.8
Disagree	62	34.3	37.0
Neutral	48	26.5	63.5
Agree	61	33.7	97.2
Strongly Agree	5	2.8	100
Customer reviews on a vendor's site are a good way to determine if the vendor is reliable			
Strongly Disagree	3	1.7	1.7
Disagree	29	16.0	17.7
Neutral	48	26.5	44.2
Agree	87	48.1	92.3
Strongly Agree	14	7.7	100
Shopping on the Internet saves me money over going to the shops			
Strongly Disagree	0	0	0
Disagree	13	7.2	7.2
Neutral	41	22.8	30.0
Agree	91	50.6	80.6
Strongly Agree	35	19.4	100
Buying something over the phone with a debit or credit card is safer than on the Internet			
Strongly Disagree	20	11.0	11.0
Disagree	92	50.5	61.5
Neutral	56	30.8	92.3
Agree	13	7.1	99.5
Strongly Agree	1	.5	100
When searching for something to buy, I like to examine several search results even if the first one is exactly what I want			
Strongly Disagree	3	1.7	1.7
Disagree	21	11.6	13.3
Neutral	25	13.8	27.1
Agree	117	64.6	91.7
Strongly Agree	15	8.3	100

	Freq.	Valid %	Cum. %
Christmas shopping on the Internet is not as much fun as doing it in person			
Strongly Disagree	29	15.9	15.9
Disagree	76	41.8	57.7
Neutral	39	21.4	79.1
Agree	32	17.6	96.7
Strongly Agree	6	3.3	100
I prefer to get ideas for Christmas presents by looking in catalogues or shops rather than on the Internet			
Strongly Disagree	17	9.4	9.4
Disagree	73	40.6	50.0
Neutral	48	26.7	76.7
Agree	38	21.1	97.8
Strongly Agree	4	2.2	100
I won't buy a CD or music download for someone as a Christmas present online unless I can listen to a sample first			
Strongly Disagree	26	14.3	14.3
Disagree	84	46.2	60.4
Neutral	40	22.0	82.4
Agree	28	15.4	97.8
Strongly Agree	4	2.2	100
If I already know what to get someone, I don't care whether the site has a picture of the product or not			
Strongly Disagree	9	5.0	5.0
Disagree	86	47.5	52.5
Neutral	24	13.3	65.7
Agree	51	28.2	93.9
Strongly Agree	11	6.1	100
Doing my Christmas shopping on the Internet gives me more choice			
Strongly Disagree	1	.5	.5
Disagree	13	7.1	7.7
Neutral	39	21.4	29.1
Agree	99	54.4	83.5
Strongly Agree	30	16.5	100

	Freq.	Valid %	Cum. %
Even if they have exactly what I want at the price I want, I won't do business with a site if I don't like the vendor			
Strongly Disagree	1	.5	.5
Disagree	21	11.1	12.1
Neutral	42	23.1	35.2
Agree	95	52.2	87.4
Strongly Agree	23	12.6	100
Being able to Christmas shop at any time of day is important to me			
Strongly Disagree	0	0	0
Disagree	12	6.6	6.6
Neutral	18	9.9	16.5
Agree	98	53.8	70.3
Strongly Agree	54	29.7	100
I like to try new things out on the computer myself, rather than ask someone to help me			
Strongly Disagree	0	0	0
Disagree	17	9.3	9.3
Neutral	35	19.2	28.6
Agree	87	47.8	76.4
Strongly Agree	43	23.6	100
I like to try new or unusual sites when Christmas shopping on the Internet			
Strongly Disagree	3	1.7	1.7
Disagree	40	22.1	23.8
Neutral	83	45.9	69.6
Agree	52	28.7	98.3
Strongly Agree	3	1.7	100
I like the Christmas shopping atmosphere on the high street			
Strongly Disagree	33	18.1	18.1
Disagree	47	25.8	44.0
Neutral	35	19.2	63.2
Agree	56	30.8	94.0
Strongly Agree	11	6.0	100

	Freq.	Valid %	Cum. %
I tend to give people the same types of Christmas gifts each year			
Strongly Disagree	11	6.0	6.0
Disagree	76	41.8	47.8
Neutral	35	19.2	67.0
Agree	60	33.0	67.0
Strongly Agree	0	0	100
I'm less concerned about sticking to a budget during Christmas than I normally would			
Strongly Disagree	7	3.8	3.8
Disagree	55	30.2	34.1
Neutral	26	14.3	48.4
Agree	90	49.5	97.8
Strongly Agree	4	2.2	100
When shopping on the Internet, pictures of the product are important when deciding whether it would be a suitable gift for someone			
Strongly Disagree	0	0	0
Disagree	9	5.0	5.0
Neutral	19	10.5	15.5
Agree	125	69.1	84.5
Strongly Agree	28	15.5	100
Finding the perfect gift for someone in my family is more important than sticking to my budget			
Strongly Disagree	2	1.1	1.1
Disagree	27	14.8	15.9
Neutral	47	25.8	41.8
Agree	91	50.0	91.8
Strongly Agree	15	8.2	100
I am comfortable doing several things at the same time, including online shopping			
Strongly Disagree	0	0	0
Disagree	18	9.9	9.9
Neutral	10	5.5	15.4
Agree	119	65.4	80.8
Strongly Agree	35	19.2	100

	Freq.	Valid %	Cum. %
I feel more in control of my Christmas shopping when I do it online			
Strongly Disagree	3	1.6	1.6
Disagree	31	17.0	18.7
Neutral	65	35.7	54.4
Agree	70	38.5	92.9
Strongly Agree	13	7.1	100
Buying Christmas presents online hasn't affected the types of things I buy			
Strongly Disagree	2	1.1	1.1
Disagree	48	26.4	27.5
Neutral	27	14.8	42.3
Agree	93	51.1	93.4
Strongly Agree	12	6.6	100
If I'd had the time, I would have preferred to do all my Christmas shopping in person rather than online			
Strongly Disagree	36	19.8	19.8
Disagree	90	49.5	69.2
Neutral	32	17.6	86.8
Agree	21	11.5	98.4
Strongly Agree	3	1.6	100
If it wasn't for the crowds, I would have preferred to do all my Christmas shopping in person rather than online			
Strongly Disagree	20	11.1	11.1
Disagree	81	45.0	56.1
Neutral	40	22.2	78.3
Agree	33	18.3	96.7
Strongly Agree	6	3.3	100
I prefer not to be distracted when Christmas shopping online, as I need to concentrate on what I'm doing			
Strongly Disagree	3	1.6	1.6
Disagree	65	35.7	37.4
Neutral	64	35.2	72.5
Agree	48	26.4	98.9
Strongly Agree	2	1.1	100

	Freq.	Valid %	Cum. %
Next year I expect to do as much of my Christmas shopping on the Internet as possible			
Strongly Disagree	2	1.1	1.1
Disagree	32	17.6	18.7
Neutral	45	24.7	43.4
Agree	71	39.0	82.4
Strongly Agree	32	17.6	100

	Freq.	Valid %	Cum. %
How often did you do your Christmas shopping from your home computer?			
Never	9	5.0	5.0
Rarely	15	8.3	13.3
Sometimes	54	29.8	43.1
Frequently	65	35.9	79.0
Almost Always	38	21.0	100
How often did you have problems finding what you were looking for?			
Never	15	8.3	8.3
Rarely	78	43.1	51.4
Sometimes	75	41.4	92.8
Frequently	11	6.1	98.9
Almost Always	2	1.1	100
How often did you use a site's "Gift Suggestions" to get ideas for your Christmas shopping?			
Never	89	49.4	49.4
Rarely	55	30.6	80
Sometimes	31	17.2	97.2
Frequently	5	2.8	100
Almost Always	0	0	

	Freq.	Valid %	Cum. %
How often did you use the lowest cost delivery option instead of the fastest one?			
Never	3	1.7	1.7
Rarely	14	7.7	9.4
Sometimes	30	16.6	26.0
Frequently	62	34.3	60.2
Almost Always	72	39.8	100
How often did you use a price comparison engine such as Pricerunner, Kelkoo, etc.?			
Never	55	30.4	30.4
Rarely	38	21.0	51.4
Sometimes	50	27.6	79.0
Frequently	31	17.1	96.1
Almost Always	7	3.9	100
Do you store your credit/debit card details at your favourite online shopping sites?			
Never	26	14.4	14.4
Rarely	30	16.6	30.9
Sometimes	64	35.4	66.3
Frequently	36	19.9	86.2
Almost Always	25	13.8	100
Do you ever find online shopping confusing?			
Never	23	12.7	12.7
Rarely	74	40.9	53.6
Sometimes	73	40.3	93.9
Frequently	11	6.1	100
Almost Always	0	0	100
How often do you find yourself adjusting the font size, window size or overall appearance of an online shopping web page?			
Never	78	43.1	43.1
Rarely	64	35.4	78.5
Sometimes	28	15.5	93.9
Frequently	10	5.5	99.4
Almost Always	1	.6	100

	Freq.	Valid %	Cum. %
How often do you add shopping sites to your Favourites or Bookmarks?			
Never	18	9.9	9.9
Rarely	47	26.0	35.9
Sometimes	76	42.0	77.9
Frequently	38	21.0	98.9
Almost Always	2	1.1	100

	Freq.	Valid %
Did you make a list before starting your Christmas shopping?		
Yes	92	50.3
No	89	48.6
Don't Remember	2	1.1
Do you use multiple browser windows or tabs when shopping online?		
Yes	133	72.7
No	44	24.0
Don't Remember	6	3.3
When shopping online, do you ever search for more than one item at the same time?		
Yes	108	59.0
No	73	39.9
Don't Remember	2	1.1

	Freq.	Valid %
Which browser do you use most often when shopping on the Internet?		
Internet Explorer	87	47.5
FireFox	72	39.3
Safari	18	9.8
Opera	2	1.1
Other	4	2.2

	Freq.	Valid %
Which of the following do you normally use when shopping online (select all that apply)?		
Google	177	96.7
Yahoo	13	7.1
Ask Jeeves	7	3.8
AlltheWeb	1	.5
Other	8	4.4
Did you receive newsletters or other promotional e-mail from online vendors offering Christmas shopping suggestions?		
No	24	13.1
Yes, but I always delete these without reading them	39	21.3
Yes, and I sometimes glanced at them	93	50.8
Yes, and I carefully read some while deleting the rest	22	12.0
Yes, and I read them all	3	1.6
Other	2	1.1
How many of the sites you used for Christmas shopping were ones you were already registered with?		
None	14	7.7
A few	46	25.1
About half	44	24.0
Most or all of them	78	42.6
Don't remember	1	.5
I paid for most of my online Christmas shopping by...		
Credit Card	102	55.7
Debit Card	74	40.4
PayPal	7	3.8
What time of day did you do most of your online Christmas shopping?		
Morning	4	2.2
During lunch	16	8.7
Whenever I wanted a break from work	23	12.6
In the evenings	74	40.4
At night	18	9.8
No particular time of day	48	26.2

	Freq.	Valid %
When you receive emails confirming a purchase, when do you delete the message from your Inbox?		
Never	44	24.0
After I've printed the message	8	4.4
After I know the item's been delivered	79	43.2
After I file the message	35	19.1
Other	17	9.3
During your 2006 Christmas shopping, what did you do if you weren't sure whether an item you found on the Internet would be suitable for an intended recipient (click all that apply)?		
Searched customer reviews for feedback	72	39.3
Asked the intended recipient if that was the item they wanted	25	13.7
Asked other people for feedback	29	15.8
Went to a shop to examine the item in person	35	19.1
Bought it anyway and hoped for the best	39	21.3
Never encountered this problem as you knew exactly what to buy	50	27.3
Other	8	4.4
Which of the following products would you prefer to buy person rather than on the Internet (Select all that apply)?		
Books	17	9.3
Music/Films	6	3.3
Travel	11	6.0
Electronics	29	15.8
House/Garden	51	27.9
Clothing	134	73.2
Toys/Gifts	24	13.1
Computer Hardware/Software	11	6.0
Groceries	97	53.0
None- I prefer to buy everything on the Internet if possible	25	13.7

Appendix E – Grocery Shopping Survey Results

	Frequency		Valid %		Cumulative %	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
Gender						
Male	23	19	50	33.3		
Female	23	38	50	66.7	100	100
Age:						
Under 24	2	3	4.3	5.3	4.3	5.3
25-34	24	19	52.2	33.3	56.5	38.6
35-44	13	19	28.3	33.3	84.8	71.9
45-60	6	15	13	26.3	97.8	98.2
60+	1	1	2.2	1.8	100	100
Occupation:						
Working Full-time	37	43	80.4	75.4	80.4	75.4
Student	4	11	8.7	19.3	89.1	94.7
Retired	1	1	2.2	1.8	91.3	96.5
Homemaker	0	1	0	1.8	91.3	98.2
Other	4	1	8.7	1.8	100	100
Household Size						
1	8	12	17.4	21.1	17.4	21.1
2	22	24	47.8	42.1	65.2	63.2
3	6	14	13	24.6	78.3	87.7
4	8	4	17.4	7.0	95.7	94.7
5+	2	3	4.3	4.3	100	100

The following are the responses to questions asked of all survey participants, broken down by those who did not buy groceries online (NOGS) versus those who bought groceries online (OGS).

	Frequency		Valid %	
	OGS	**NOGS**	**OGS**	**NOGS**
Which of the following statements most closely describes your current level of grocery shopping?				
I do most of the grocery shopping for my household	32	28	69.6	49.1
I share grocery shopping duties with other members of my household	11	23	23.9	40.4
I occasionally go grocery shopping	3	6	6.5	10.5
Are there particular religious, ethical or health considerations that affect your grocery shopping?				
Yes	17	23	37	40.4
No	29	34	63	59.6
Where do you do most of your non-Internet food shopping?				
Tesco	15	15	32.6	26.3
Sainsburys	7	21	15.2	36.8
Asda	3	9	6.5	15.8
Iceland	2	0	4.3	0.0
Morrisons	4	3	8.7	5.3
Waitrose	4	1	8.7	1.8
Netto/Aldi/Lidl	1	1	2.2	1.8
Other	10	7	21.7	12.3

	Frequency		Valid %		Cumulative%	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
On average, how often do you buy your groceries from a supermarket, grocer or any place other than the Internet?						
Less than once a month	3	1	6.5	1.8	6.5	1.8
Once a month	5	4	10.9	7.0	17.4	8.8
Once every 2 weeks	6	9	13.0	15.8	30.4	24.6
Once a week	24	26	52.2	45.6	82.6	70.2
2 or more times a week	8	17	17.4	29.8	100	100

	Frequency		Valid %	
	OGS	**NOGS**	**OGS**	**NOGS**
Aside from groceries, have you ever bought any of the following types of products online?				
Books	43	50	93.5	87.7
Music/Films	40	49	87.0	86.0
Travel	36	49	78.3	86.0
Electronics	31	33	67.4	57.9
House/Garden	22	23	47.8	40.4
Clothing	28	33	60.9	57.9
Toys/Gifts	32	35	69.5	61.4
Computer Hardware/Software	31	33	67.4	57.9
I have never bought anything online	0	2	0.0	3.5

Concerning your overall online shopping habits...	**Frequency**		**Valid %**		**Cumulative%**	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
Do you store your credit/debit card details at your favourite online shopping sites?						
Never	15	21	32.6	38.2	32.6	38.2
Rarely	4	9	8.7	16.4	41.3	54.5
Sometimes	11	14	23.9	25.5	65.2	80.0
Frequently	1	7	2.2	12.7	67.4	92.7
Almost Always	15	4	32.6	7.3	100	100
Do you every find online shopping confusing?						
Never	4	5	8.7	9.1	8.7	9.1
Rarely	23	23	50.0	41.8	58.7	50.9
Sometimes	18	23	39.1	41.8	97.8	92.7
Frequently	0	4	0	7.3	97.8	100
Almost Always	1	0	2.2	0	100	100

	Frequency		Valid %		Cumulative%	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
How often do you cook means from scratch?						
Never	1	0	2.2	0.0	2.2	0.0
Rarely	1	4	2.2	7.1	4.3	7.1
Sometimes	8	4	17.4	7.1	21.7	14.3
Frequently	24	23	52.2	41.1	73.9	55.4
Almost Always	12	25	26.1	44.6	100	100

When buying groceries from a terrestrial outlet...	Frequency		Valid %		Cumulative%	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
How often do you make a list before shopping?						
Never	4	6	8.9	10.5	8.9	10.5
Rarely	8	5	17.8	8.8	26.7	19.3
Sometimes	8	17	17.8	29.8	44.4	49.1
Frequently	13	9	28.9	15.8	73.3	64.9
Almost Always	12	20	26.7	35.1	100	100
How often do you try new products or brands?						
Never	0	0	0.0	0.0	0.0	0.0
Rarely	5	6	11.1	10.5	11.1	10.5
Sometimes	30	35	66.7	61.4	77.8	71.9
Frequently	9	16	20.0	28.1	97.8	100
Almost Always	1	0	2.2	0.0	100	100
How often do you buy something on impulse?						
Never	0	1	0.0	1.8	0.0	1.8
Rarely	7	6	15.6	10.5	15.6	12.3
Sometimes	21	27	46.7	47.4	62.2	59.6
Frequently	17	20	37.8	35.1	100	94.7
Almost Always	0	3	0.0	5.3	100	100

When buying groceries from a terrestrial outlet...	Frequency		Valid %		Cumulative%	
	OGS	NOGS	OGS	NOGS	OGS	NOGS
How often do you do your grocery shopping alone?						
Never	1	3	2.2	5.3	2.2	5.3
Rarely	4	8	8.9	14.0	11.1	19.3
Sometimes	9	14	20.0	24.6	31.1	43.9
Frequently	15	14	33.3	24.6	64.4	68.4
Almost Always	16	18	35.6	31.6	100	100
Do you tend to buy the same brands or types of groceries over and over?						
Never	0	0	0.0	0.0	0.0	0.0
Rarely	0	0	0.0	0.0	0.0	0.0
Sometimes	7	16	15.6	28.1	15.6	28.1
Frequently	24	30	53.3	52.6	68.9	80.7
Almost Always	14	11	31.1	19.3	100	100
How often do you compare prices before deciding where to buy your groceries?						
Never	5	16	10.9	28.1	10.9	28.1
Rarely	19	18	41.3	31.6	52.2	59.6
Sometimes	11	15	23.9	26.3	76.1	86.0
Frequently	7	3	15.2	5.3	91.3	91.2
Almost Always	4	5	8.7	8.8	100	100
How often do you study the label on a new item before purchasing?						
Never	0	0	0.0	0.0	0.0	0.0
Rarely	8	10	17.4	17.5	17.4	17.5
Sometimes	11	10	23.9	17.5	41.3	35.1
Frequently	16	19	34.8	33.3	76.1	68.4
Almost Always	11	18	23.9	31.6	100	100

	Frequency		Valid %		Cumulative%	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
I am comfortable using my computer to access the Internet						
Strongly Agree	41	42	89.1	75.0	89.1	75.0
Agree	4	11	8.7	19.6	97.8	94.6
Neutral	0	1	0	1.8	97.8	96.4
Disagree	0	1	0	1.8	97.8	98.2
Strongly Disagree	1	1	2.2	1.8	100	100
I like to try new things out on the computer myself, rather than ask someone to help me						
Strongly Agree	11	11	24.4	19.3	24.4	19.3
Agree	22	28	48.9	49.1	73.3	68.4
Neutral	10	12	22.2	21.1	95.6	89.5
Disagree	2	5	4.4	8.8	100	98.2
Strongly Disagree	0	1	0.0	1.8	100	100
Being able to grocery shop at any time of day is important to me						
Strongly Agree	20	5	43.5	8.8	43.5	8.8
Agree	14	24	30.4	42.1	73.9	50.9
Neutral	9	14	19.6	24.6	93.5	75.4
Disagree	2	11	4.3	19.3	97.8	94.7
Strongly Disagree	1	3	2.2	5.3	100	100
Buying organic or Fair Trade products is important to me						
Strongly Agree	10	11	22.2	19.3	22.2	19.3
Agree	13	15	28.9	26.3	51.1	45.6
Neutral	14	25	31.1	43.9	82.2	89.5
Disagree	5	5	11.1	8.8	93.3	98.2
Strongly Disagree	3	1	6.7	1.8	100	100
Food shopping is boring						
Strongly Agree	3	6	6.5	10.5	6.5	10.5
Agree	9	10	19.6	17.5	26.1	28.1
Neutral	15	16	32.6	28.1	58.7	56.1
Disagree	14	17	30.4	29.8	89.1	86.0
Strongly Disagree	5	8	10.9	14.0	100	100

	Frequency		Valid %		Cumulative%	
	OGS	**NOGS**	**OGS**	**NOGS**	**OGS**	**NOGS**
I enjoy cooking for my family and friends						
Strongly Agree	15	23	32.6	40.4	32.6	40.4
Agree	21	21	45.7	36.8	78.3	77.2
Neutral	6	10	13.0	17.5	91.3	94.7
Disagree	2	3	4.3	5.3	95.7	100
Strongly Disagree	2	0	4.3	0.0	100	100
Grocery shopping is easier to do if I'm on my own						
Strongly Agree	18	15	39.1	26.3	39.1	26.3
Agree	14	19	30.4	33.3	69.6	59.6
Neutral	9	15	19.6	26.3	89.1	86.0
Disagree	4	7	8.7	12.3	97.8	98.2
Strongly Disagree	1	1	2.2	1.8	100	100
I don't like someone else picking out my groceries for me						
Strongly Agree	3	15	6.5	26.3	6.5	26.3
Agree	20	19	43.5	33.3	50.0	59.6
Neutral	15	17	32.6	29.8	82.6	89.5
Disagree	7	6	15.2	10.5	97.8	100
Strongly Disagree	1	0	2.2	0.0	100	100
I enjoy food shopping						
Strongly Agree	12	7	26.1	12.3	26.1	12.3
Agree	15	21	32.6	36.8	58.7	49.1
Neutral	16	17	34.8	29.8	93.5	78.9
Disagree	3	7	6.5	12.3	100	91.2
Strongly Disagree	0	5	0.0	8.8	100	100
I like to try different places to buy my groceries						
Strongly Agree	1	3	2.2	5.3	2.2	5.3
Agree	13	15	28.3	26.3	30.4	31.6
Neutral	16	22	34.8	38.6	65.2	70.2
Disagree	14	12	30.4	21.1	95.7	91.2
Strongly Disagree	2	5	4.3	8.8	100	100

Questions asked of online grocery shoppers only:

	Freq.	Valid %
Where do you do most of your online grocery shopping?		
Tesco.com	32	69.6
Sainsburys To You	6	13.0
Asda.com	1	2.2
Ocado/Waitrose	4	8.7
Other	3	6.5
Overall, where do you buy most of your groceries?		
Online	18	40.0
From a Supermarket	24	53.3
From a Grocer or other local shop	1	2.2
Other	2	4.4
On average, how often do you buy your groceries online?		
Less than once a month	16	35.6
Once a month	11	24.4
Once every 2 weeks	11	24.4
Once a week	7	15.6
2 or more times a week	0	0.0

	Freq.	Valid %	Cum. %
If you need to go to a supermarket, do you go to the same vendor that provides your online grocery shopping?			
Never	2	4.5	4.5
Rarely	7	15.9	20.5
Sometimes	17	38.6	59.1
Frequently	8	18.2	77.3
Almost Always	10	22.7	100
How often do you check out Special offers or items on sale?			
Never	4	8.9	8.9
Rarely	8	17.8	26.7
Sometimes	13	28.9	55.6
Frequently	11	24.4	80.0
Almost Always	9	20.0	100

	Freq.	Valid %	Cum. %
How often do you do your online grocery shopping from your home computer?			
Never	0	0.0	0.0
Rarely	5	11.1	11.1
Sometimes	9	20.0	31.1
Frequently	9	20.0	51.1
Almost Always	22	48.9	100
How often do you time your online grocery shopping to take advantage of cheaper delivery charges?			
Never	7	15.6	15.6
Rarely	9	20.0	35.6
Sometimes	7	15.6	51.1
Frequently	11	24.4	75.6
Almost Always	11	24.4	100
How often do you use the Search box to find an item?			
Never	4	8.9	8.9
Rarely	5	11.1	20.0
Sometimes	20	44.4	64.4
Frequently	10	22.2	86.7
Almost Always	6	13.3	100
How often do you scan or browse categories to find an item?			
Never	1	2.2	2.2
Rarely	7	15.6	17.8
Sometimes	17	37.8	55.6
Frequently	17	37.8	93.3
Almost Always	3	6.7	100
How often do you use the "Notes" or "Instructions" feature?			
Never	15	34.1	34.1
Rarely	17	38.6	72.7
Sometimes	6	13.6	86.4
Frequently	4	9.1	95.5
Almost Always	2	4.5	100

	Freq.	Valid %	Cum. %
How often do you use the "My Favourites" or "Last Order" feature?			
Never	5	11.4	11.4
Rarely	4	9.1	20.5
Sometimes	7	15.9	36.4
Frequently	15	34.1	70.5
Almost Always	13	29.5	100
How often do you have problems finding items?			
Never	0	0.0	0.0
Rarely	13	28.9	28.9
Sometimes	24	53.3	82.2
Frequently	7	15.6	97.8
Almost Always	1	2.2	100
How often do you make a list before starting?			
Never	11	24.4	24.4
Rarely	9	20.0	44.4
Sometimes	9	20.0	64.4
Frequently	8	17.8	82.2
Almost Always	8	17.8	100
How often do you try new products or brands?			
Never	1	2.2	2.2
Rarely	11	24.4	26.7
Sometimes	24	53.3	80.0
Frequently	9	20.0	100
Almost Always	0	0.0	100
How often do you buy something on impulse?			
Never	2	4.5	4.5
Rarely	17	38.6	43.2
Sometimes	19	43.2	86.4
Frequently	6	13.6	100
Almost Always	0	0.0	100

	Freq.	Valid %	Cum. %
How often do you do your online grocery shopping alone?			
Never	3	6.8	6.8
Rarely	1	2.3	9.1
Sometimes	4	9.1	18.2
Frequently	12	27.3	45.5
Almost Always	24	54.5	100
Buying Groceries online saves me money			
Strongly Agree	6	13.6	13.6
Agree	12	27.3	40.9
Neutral	13	29.5	70.5
Disagree	10	22.7	93.2
Strongly Disagree	3	6.8	100
I don't like being interrupted with grocery shopping online			
Strongly Agree	2	4.5	4.5
Agree	21	47.7	52.3
Neutral	17	38.6	90.9
Disagree	4	9.1	100
Strongly Disagree	0	0.0	100
I feel more in control of my grocery shopping when I do it online			
Strongly Agree	3	7.1	7.1
Agree	7	16.7	23.8
Neutral	16	38.1	61.9
Disagree	12	28.6	90.5
Strongly Disagree	4	9.5	100
I don't mind talking to people while doing my online grocery shopping			
Strongly Agree	1	2.3	2.3
Agree	14	32.6	34.9
Neutral	15	34.9	69.8
Disagree	11	25.6	95.3
Strongly Disagree	2	4.7	100

	Freq.	Valid %	Cum. %
Buy groceries online hasn't affected the types of things I buy			
Strongly Agree	4	9.3	9.3
Agree	24	55.8	65.1
Neutral	6	14.0	79.1
Disagree	9	20.9	100
Strongly Disagree	0	0.0	100
My favourite online grocery site is easy to use			
Strongly Agree	4	9.3	9.3
Agree	30	69.8	79.1
Neutral	8	18.6	97.7
Disagree	1	2.3	100
Strongly Disagree	0	0.0	100
I'm more likely to buy something new if I see it in a supermarket or shop than online			
Strongly Agree	12	28.6	28.6
Agree	19	45.2	73.8
Neutral	6	14.3	88.1
Disagree	5	11.9	100
Strongly Disagree	0	0.0	100
The best thing about buying groceries online is that I spend less money than I would in a supermarket			
Strongly Agree	3	7.1	7.1
Agree	15	35.7	42.9
Neutral	16	38.1	81.0
Disagree	6	14.3	95.2
Strongly Disagree	2	4.8	100
I miss being able to pick out my own produce when shopping online			
Strongly Agree	11	26.2	26.2
Agree	19	45.2	71.4
Neutral	9	21.4	92.9
Disagree	3	7.1	100
Strongly Disagree	0	0.0	100

	Freq.	Valid %	Cum. %
If I had the time, I would prefer to buy my groceries in person rather than online			
Strongly Agree	8	19.0	19.0
Agree	16	38.1	57.1
Neutral	9	21.4	78.6
Disagree	9	21.4	100
Strongly Disagree	0	0.0	100
I prefer not to be distracted when online grocery shopping, as I need to concentrate on what I'm doing			
Strongly Agree	2	4.8	4.8
Agree	11	26.2	31.0
Neutral	18	42.9	73.8
Disagree	11	26.2	100
Strongly Disagree	0	0.0	100

Thinking about the last time you bought groceries online, please rate the vendor on…	Freq.	Valid %	Cum. %
Ease of use			
Excellent	2	4.8	4.8
Good	24	57.1	61.9
Acceptable	15	35.7	97.6
Below Average	1	2.4	100
Poor	0	0.0	100
Quality of Products			
Excellent	4	9.5	9.5
Good	22	52.4	61.9
Acceptable	12	28.6	90.5
Below Average	4	9.5	100
Poor	0	0.0	100
Product Selection			
Excellent	4	9.5	9.5
Good	26	61.9	71.4
Acceptable	12	28.6	100
Below Average	0	0.0	100
Poor	0	0.0	100

Thinking about the last time you bought groceries online, please rate the vendor on...	**Freq.**	**Valid %**	**Cum. %**
Quality of Service			
Excellent	9	21.4	21.4
Good	22	52.4	73.8
Acceptable	10	23.8	97.6
Below Average	1	2.4	100
Poor	0	0.0	100
Web Site appearance			
Excellent	8	19.0	19.0
Good	22	52.4	71.4
Acceptable	12	28.6	100
Below Average	0	0.0	100
Poor	0	0.0	100
Price			
Excellent	7	16.7	16.7
Good	26	61.9	78.6
Acceptable	9	21.4	100
Below Average	0	0.0	100
Poor	0	0.0	100

Thinking about the last time you bought groceries online...	**Freq.**	**Valid %**
Do you store your credit/debit card details on that site?		
Yes	22	50.0
No	20	45.5
Don't know	2	4.5
Do you store your login details for that site?		
Yes	29	65.9
No	14	31.8
Don't know	1	2.3
Do you have the web address of the site stored in Bookmarks or Favourites?		
Yes	21	47.7
No	21	47.7
Don't know	2	4.5

Questions asked of non-online grocery shoppers only

	Freq.	Valid %	Cum. %
How often do you use credit or debit cards to pay for your food shopping?			
Never	2	3.6	3.6
Rarely	2	3.6	7.3
Sometimes	2	3.6	10.9
Frequently	9	16.4	27.3
Almost Always	40	72.7	100
How often do you check out Special offers or items on sale?			
Never	0	0.0	0.0
Rarely	4	7.0	7.0
Sometimes	14	24.6	31.6
Frequently	25	43.9	75.4
Almost Always	14	24.6	100
How often do you use the supermarket nearest your home?			
Never	0	0.0	0.0
Rarely	9	16.1	16.1
Sometimes	9	16.1	32.1
Frequently	15	26.8	58.9
Almost Always	23	41.1	100
Do you try to do your grocery shopping at a particular time of day?			
Never	9	15.8	15.8
Rarely	14	24.6	40.4
Sometimes	17	29.8	70.2
Frequently	7	12.3	82.5
Almost Always	10	17.5	100
Do you try to do your grocery shopping on a particular day of the week?			
Never	15	26.3	26.3
Rarely	18	31.6	57.9
Sometimes	9	15.8	73.7
Frequently	3	5.3	78.9
Almost Always	12	21.1	100

	Freq.	Valid %
Have you ever tried to buy your groceries online?		
Yes	18	31.6
No	39	68.4

Appendix F – Examples of Open Coding

Sample coding of excerpts from interview (GP8)

Excerpt	**Open Code(s)**
[Why did you try online?] "I thought it was an excellent idea because it meant that I wouldn't have to take the children to the supermarket, and obviously wanted to see what would happen, and how it all worked. I knew there was a charge for delivery, but that was worth it because getting the shopping delivered to your door. I think somebody actually told me that it was a good experience. A friend of mine said "Oh, if you've got children you've got to do it online 'cause it's so much easier". I looked into it, the web site was easy to understand, how it happened, plus Tesco had stored all of my favourites and the first time I went online, activate the card, and it told me what I bought in the last two years."	Delivery destinations Use of 'Last Order/My Favourites' Site Registration Delivery Destinations Previous positive or negative terrestrial experiences
[Why did you try Tesco's first?] "Well, they were the only people that delivered in Suffolk. I think there was another place as well but that was my preferred option. And I'd been shopping there for years because it was the only big supermarket there. And my friend said Tesco's is really good, you can do it and that was the 'advert' to me, from my friend."	Selection criteria for vendor Expressions of vendor/brand loyalty Previous positive or negative terrestrial experiences
[Your IT Knowledge at the time was good?] "Yeah, yeah. Cause I was working in it."	Levels of confidence in use of computers and/or internet

Excerpt	**Open Code(s)**
[Did anyone have to show your around the site?] **"No, no."**	Levels of self-sufficiency in using computers or the internet
[What was the first time like?] **"I thought it was quite cool. Tesco's don't have pictures, so that's a bit weird. If I hadn't had the Favourites I don't think I'd have done it because the Favourites were there so I knew that I was getting what I would get if I went to the shop 'cause it had the "you buy bagels" and I could check the box and in fact my shopping took me about 2 minutes instead of 2 hours. So it's a big time-saver."**	Day/time patterns/preferences Site graphics or pictures Use of 'Last Order/My Favourites' Preferences & decisions based on past experience
[It used to take you 2 hours to shop?] **"Yeah, to get there and to do it. Not necessarily 2 hours but a good amount of time. The Web does save money, save money and because you don't buy all the extras, and also time."**	Previous positive or negative terrestrial experiences Perceptions of cost-effectiveness of online shopping
[Positive experience the 1st time?] **"Yeah. Tesco's I noticed, and it's happened with Waitrose as well, the first time they deliver to you they seem to make sure that they're there at 7 as opposed to the 9 o'clock, you know they do the delivery and you seem more prioritised 'cause it seemed a bit strange that Waitrose did it as well. And they seem to be extremely...I think they're told to be ever so nice the first time it's done. I don't know, but that's how it sort of felt."**	Delivery Scheduling Previous positive or negative online experiences Pleasure/Entertainment
[Nowadays, mostly online or at supermarket?] **"Online"**	Current use of terrestrial channels

Excerpt	**Open Code(s)**
[Where?] "Well as I work from home it depends on which PC I'm using at the time. If I'm using my work PC I can log in and I can do my shopping. If I'm at home of an evening and think oh sugar I forgot I can use the home computer. It doesn't matter which one I use."	Location Attitude towards locations Day/time patterns preferences
[So you use either computer?] "Yeah. Whichever." [And here in the conservatory?] "That's because I'm plugged in. I don't have wireless LAN." [So you're restrained by where your Broadband connect is?] "Yeah." [Tried from anywhere else?] "Yeah, when I work in Leavsden and I would…same computer…I've never gone to a cybercafe and done it." [But you've done it from work?] "Yeah"	Location Attitude towards locations

Excerpt	Open Code(s)
[Site used nowadays?] "Toss-up between Waitrose and Tesco. Although however I have been lured to Morrison's but they don't do online shopping. And I'm lured to Morrison's because they are cheap. In fact, Morrison's has stopped me shopping 100% online. Because they're so so well-priced. The bill in Morrison's is half of what it is in Waitrose."	Degree of experience in online shopping within the domain Selection criteria for vendor Expressions of vendor/brand loyalty Concerns about obtaining value for money Perceptions of price competitiveness between vendors or channels
[Tesco's vs Waitrose usage?] "About 50-50." [Why Waitrose?] "Because they sell a product that I can't get in Tesco." [Just that one product?] "One product." [So when you need that one product you do the shopping at Waitrose?] "Yeah"	Expressions of vendor/brand loyalty Selection criteria for vendor

Excerpt	**Open Code(s)**
[How often?] "Once a fortnight, probably. So I'll probably go to Morrisons because...I will go to Morrisons after Xmas because I spent too much money...when I'm feeling tight and I want to stick to the budget and my bank balance is low...[break]...Morrison's had a impact when it changed from Safeway because of the value and it's good quality."	Selection criteria for vendor Concerns about obtaining value for money Perceptions of price competitiveness between vendors or channels Expressions of vendor/brand loyalty
[Do you shop online from a list?] "Yeah, because I got my weekly list saved. I use the save list because...obviously...and then I'll add what perhaps isn't in my saved list but I'm quite good I go back to last week's or whatever."	Preparation & use of shopping lists Use of 'Last Order/My Favourites'
[What do you like about online grocery shopping?] "Convenience. It's so, so convenient. I don't have to get up out of my chair. And I don't have to have any interaction with anybody. I don't have to go to the supermarket, I don't have to do my hair, I can be sitting in my pyjamas, I don't have to make the effort of getting up, ready, getting my shoes on and out the door, all that stuff."	Others present when shopping online Locations Attitude towards locations

Excerpt	**Open Code(s)**
[What do you dislike about online grocery shopping?] "the fact that there isn't the same experience as there is in the shop. You can't be...sort of 'I want red wine' so in the shop I could go browsing around all these shelves. I could do it on the Web but it takes ages and you got to click thru and everything and there's usually hundreds and hundreds of wines and there's offers there...yes they [online] have offers but I think it's harder to browse for what you want if you don't know what you want on the web than it is in the shop. Because in the shop you can go and you can walk and it takes you 2 minutes but on the Web you got to do 'next page'. And you might put in...bread, and there's hundreds and hundreds of breads...and I've got a fast connection but a lot of people don't. It might come up with, for example...Waitrose do it in blocks of 30 and it will say 400 million items and 'next page, next page' and you got to read thru...and then sometimes the browser is not extremely reliable it can crash or whatever."	Levels of confidence in ability to successfully find and purchase products or services online Layout/navigation Browsing within a site Searching within a site Previous positive or negative online experiences Online shopping offers more/less control

Excerpt	**Open Code(s)**
[Do you prefer online at Waitrose or Tesco, aside from product issue?] "I think an amalgamation of the two would be good, 'cause Waitrose have pictures and their site interface is good, not got any complaints with that, you can save the list...Waitrose don't have something that Tesco do. Tesco have got this Clubcard so when you've been to the shop it will update your information, you can reclaim your points on the web, you can use e-vouchers and all that sort of thing. And I think they've [Tesco] got the edge because of that. Because if you happen to have gone to the supermarket you can then say ' oh, I bought some groceries the other week and it's got my things on'. So what keeps me with Waitrose is the one product and also their food is good...they're more expensive so that keeps me away...but the web interface...I think Tesco's got it slightly better but they got no pictures. So the ideal would be Tesco with pictures."	Selection criteria for vendor Expressions of vendor/brand loyalty Concerns about obtaining value for money Perceptions of cost-effectiveness of online shopping Use of online shopping to lower costs Perceptions of price competitiveness between vendors or channels Site graphics or pictures Layout/Navigation Use of 'Last Order/My Favourites' Preferences and decisions based on past online experience
[How has online shopping changed the way you shop?] "...when I do it online it's made me stricter. As in I spend less. I'll spend 65 quid if I do it online but go into the shop I'll spend 120."	Perceptions of cost-effectiveness of online shopping Use of online shopping to lower costs

Sample coding of excerpts from a shopping observation (GP4)

Excerpt	**Open Code(s)**
Has e-mail (work & Yahoo) also open. She shows me bookmarks file, with many sites bookmarked, many folders within folders, etc. dozens in each category, including a Shopping folder.	Degree of experience in online shopping within the domain or other domains Bookmarks Other applications running
At main page of Tesco. Logs in (doesn't store but rather uses Autofill for username).	Storing of login/financial details online Layout/Navigation
At main page. Top menu bar, My Favourites.	Layout/Navigation Use of 'Last Order/My Favourites'
Goes directly to Delivery Slot booking. Books date/time for next day, 8-10pm, to make sure she's home in time.	Day/time patterns/preferences Delivery scheduling Delivery destinations
Now to My Favourites. Goes thru My Favourites in order, extremely quickly.	Degree of experience in online shopping within the domain or other domains Use of 'Last Order/My Favourites'

Excerpt	**Open Code(s)**
Fruit. Looks at apples, both total price and unit price. Bananas, very particular about Fair Trade ones (for "ethical reasons"). Notices twofer on strawberries. Many of her fruit My Favourites have notes attached specifying pick instructions or substitution preferences. "I'm fussy".	Previous levels of product/service knowledge Willingnes to allow the vendor to control product selection Concerns about obtaining value for money Values Delegation of product selection to vendor
Vegetables. Picks Value Onions.. Picks organic lettuce. Sees baby avocados, puts note to ensure she doesn't get normal ones as substitute, relates experience of ordering 4 baby aubergines and getting 4 normal-sized ones instead. Comments that her shopping is an "odd mixture of Value and fancy-dancy" stuff. Picks broccoli. Examines price of loose courgettes versus pre-pack, using unit price. Sees baby broad beans, but says they almost never have them in stock when she orders so doesn't bother to pick. Picks Mushrooms. Picks Swede.	Previous levels of product/service knowledge Willingnes to allow the vendor to control product selection Previous positive or negative online experiences Preferences and decisions based on past online experience Delegation of product selection to vendor
Dairy/eggs/cheese. Examines Quark. Says she's lactose-intolerant so must be careful about dairy intake and use soya substitutes. Sees soya milk, but unsure it's fresh or UHT so clicks product for popup, and makes determination from enlarged picture that it's fresh, picks. Sees Weight Watchers cake, opens popup to look at nutritional info, declines due to additives.	Site graphics or pictures Lifestyle

Excerpt	**Open Code(s)**
Ready Meals. picks chicken lasagne but adds note advising that particular brand (Healthy Eating) of beef lasagne is preferred substitute rather than another brand of chicken lasagne.	Site graphics or pictures Lifestyle Delegation of product selection to vendor
Biscuits/Snack/Sweets. French Toast. Chewing gum. Breakfast Cereal. Shredded wheat. Cooking Ingredients. (Looks at her paper list for the first time).	Preparation & use of shopping lists
Tins/Packets/Jars. Thai dipping sauce. UHT soya milk. Pasta. Pesto. Mint. Balsamic vinegar. Marmalade. Notes that as experiment she bought jar of anchovy spread but did not like it. Chicken lunch packets. Notes a tuna packet on special, picks, but comments she would have bought that regardless. Sees squid chunks, but recalls it's very oily. Sees jar of anchovies, doesn't remember if she has in stock so picks. Tinned tomatoes. Passata.	Preferences and decisions based on past online experience Purchase of new/unfamiliar items
Frozen Desserts/Ice Cream. Comments on Ben & Jerry's flavour she tried last time (based on what she saw online) but wasn't "impressed enough" to repeat.	Preferences and decisions based on past online experience Purchase of new/unfamiliar items
Toiletries. Checks list. Picks deodorant (which was not on list). Bypasses tint as she prefers to get that from Boots, online or not.	Preparation & use of shopping lists Current use of terrestrial channels

Excerpt	**Open Code(s)**
Household. Picks Pre-wash spray which she thought she ordered last time but wasn't in stock. "Occasionally I'm sure I ordered something but it doesn't show up and is not on the list".	Preparation & use of shopping lists Previous positive or negative online experiences
Electrical/Car care. Needs batteries, adds but then takes out due to price, but then notices that's for 12 rather than 6, so thinks for a minute and puts back in.	Concerns about obtaining value for money
Gardening. Doesn't need rose food because of substitution last time she ordered.	Previous positive or negative online experiences Preferences and decisions based on past online experience
End of My Favourites. Now typing into Search box, and consulting list for any remaining items. Types 'Spring Onions'. Got hits, but also spring water. Picks onions.	Preparation & use of shopping lists Searching within a site
Types in 'French Mustard', lots of hits (including mustard sauces). Scans quickly thru several screens, goes back to first screen of hits to take closer look. "Looking for something that's interesting rather than a particular one...the pictures don't tell you very much". Picks Tesco Finest.	Site graphics or pictures Pleasure/entertainment
Types in 'Milk'. Wants small one and isn't sure about sizes from pictures or descriptions, decides instead to pick this up next time she's at CostCutter.	Site graphics or pictures Current use of terrestrial channels

Excerpt	**Open Code(s)**
Now looks at Special Offers (from pull-down menu), quickly scans, doesn't find anything she wants. Goes to Fruit/Vegetable offers (left hand menu). Looks at twofer prices to make sure prices will still be valid for her delivery date. Doesn't find anything new to add. Goes to Dairy/Cheese offers (left hand menu). Scans, no picks. Goes to Meat/Fish/Poultry offers. No picks. Then to Bakery Offers. No picks, but decides to look for crumpets via Search box. Notices Haddock in Crumbs in hits, giggles. Looks for cheese ones, which she can get at CostCutter but not Tesco. Picks.	Decision criteria for non-list purchases Browsing within a site Searching within a site Pleasure/entertainment
Back to Offers/Ideas, looks at subcategories. Examines potted herbs under Best of Italy. Decides to browse for these in main left-hand categories of Fresh herbs instead Doesn't find anything she wants. "I'll dip in and out of categories"	Browsing within a site
Types 'Green beans' into search box. Finds mainly tinned/frozen ones. Tries 'beans,' but too many different ones. So browses to vegetables, others, beans. Notices yellow beans, decides to "experiment" and get some. Ditto runner beans.	Browsing within a site Searching within a site Purchase of new/unfamiliar items
"I always check my basket to make sure I didn't put in anything I didn't really want." Removes oranges from basket. Types grapefruit into search box. "I'm very much into buying things on impulse", examines but doesn't pick. Back to basket, decides she "dont feel like swede" so removes. Removes fresh soy milk and anchovies	Decision criteria for non-list purchases Searching within a site

Excerpt	**Open Code(s)**
[Have you had problems finding items in past?] "Generally, everything I want that's fairly ordinary they will have in stock."	Expressions of vendor/brand loyalty Confidence in vendor performance
Notices food club banner, clicks and enrols.	Attitudes to banners, pop-ups, vendor or customer recommendations Responses to cues during shopping sessions