LOYALTY AND STICKINESS IN A VIRTUAL ENVIRONMENT: PARAMETERS OF A WEBSITE'S HOMEPAGE AND CONSUMERS' RESPONSES TO DIFFERENT E-RETAILING STRATEGIES

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ABSTRACT

Loyalty and Stickiness in a Virtual Environment: Parameters of a Website's Homepage and Consumers' Responses to Different E-Retailing Strategies

Erica Horn

The goal of the present thesis is to suggest a means of objectively classifying and measuring the design parameters of a website's homepage and then to analyze the effects these parameters have on consumer stickiness and loyalty. In addition, the aim is to compare the objective parameters of a website's homepage and the browsing experiences of consumers between brick and mortar and virtual e-retailers. To date, marketing managers and website designers have had to rely on the trade literature on website design that is replete with checklists and 'how to' guides that lack scientific rigour. The limited academic research relies heavily on the subjective assessments of websites. Two distinct yet complementary studies were conducted. Study 1 uses the guiding principles of the grounded theory approach to develop an objective and systematic way of organizing and measuring the parameters of an e-retailer's homepage. The study identified three key categories of parameters: (1) usability; (2) brand and; (3) atmospheric parameters. Study 2 then uses this categorization in a web browsing field study to examine their relationship with web surfer level outcomes such as stickiness and loyalty. Study 2 identified several significant differences in the measures of stickiness and loyalty depending upon e-retailing strategy employed, existence or absence of prior contact with a website and level of brand knowledge. The findings from Study 2 suggest that some measures of stickiness and loyalty are affected by website level and individual level factors.

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When we finish reading or studying a book of the Bible we say,

"חזק חזק ונתחזק"

(Strength, strength and be strengthened)

as a sign, not only of our strength and dedication to have accomplished such a feat but also as testimony to the influence and inspiration of the words of the Bible. In this case, I have chosen these words to reflect the loyalty and stickiness of my family and friends. They ensured that my thesis was completed and that it was done to meet the perfectionist standards I have always set for myself. By no means is this an attempt to equate the words written herein with the words of the Bible.

To my mom, thank you for letting me live under your roof, for letting me eat your amazing cooking and most importantly, thank you for your advice, love and patience while I went back to school to get my Master's degree. Dad, thank you for being my toughest critic and editor. Your feedback and support have always been important to me. Thanks to my brother Rob for moving to New York City, which afforded me the opportunity to turn his bedroom into my office. Thanks to my brother Doug for his endless trips to Bureau en Gros to make sure I had enough printer paper and ink in my printer. Thank you also to my Bubby who always had a question or two about what I was doing and always made sure I was eating and sleeping enough. I would like to thank President Truman for sitting by my side on a daily basis and for giving me someone to talk to when the walls no longer wanted to listen to my singing.

I know that the receiving of my Master's degree would have made my Nana and Papa so proud. It is their wisdom of "work before play" that drives me to excel in any endeavour I undertake.

Thank you to all my friends for keeping me sane. To my friends in Montreal, thanks for hanging out with me when I needed a laugh, wanted to laugh, needed to cry or just wanted to get out. To my friends scattered across the continent, knowing that you were only a phone call away made falling off the face of the earth a lot more difficult. Your emails and instant messages were always welcomed distractions and they always put a smile on my face.

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Thank you to Dr. Le Bel for getting me involved with the Web Browsing Study and for encouraging a late-in-the-game thesis topic change. This is a far more marketable thesis than the one I was originally working on. Thank you.

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1. INTRODUCTION

Although research on online environments has yet to examine such issues, the expression "a first impression is a lasting impression" most likely applies to both online and offline shopping contexts. Just as window displays and storefronts help form a consumer's first impression of a store, a website's homepage (i.e., the first page a web surfer is exposed to when accessing a site) is likely to influence consumers' first impressions of the website and their desires to progress inward. A web surfer's first impression of a website is likely influenced by their experiences with the brand, offline or online, but also the result of the overall look of the homepage. Notwithstanding the growing trade literature on website design, the question remains, what specific features of a homepage encourage web surfers to linger on a website, browse and discover it, and return to the site in the future.

Extensive research has been conducted on consumer behaviour in traditional retail environments. In the electronic marketplace, however, there are unique factors in relation to online retailing (e-retailing) that have not been studied previously. Researchers are only beginning to investigate the behaviours of consumers as they surf the internet and as they make more purchases online. Because online shopping is becoming increasingly popular, it is incumbent upon firms to understand what aspects of their websites elicit different attitudinal and behavioural responses from consumers. Attitudinal responses can include having a favourable attitude towards a brand (Ha, 1998; Srinivasan, Anderson and Ponnavolu, 2002) or an individual's overall attachment to a website (Hallowell, 1996). Behavioural responses can include increasing the amount of

money consumers spend online, telling their friends about a website, maintaining consumers' attention while they are on a site (commonly referred to as stickiness) or returning to a site in the future.

Traditional retail (hereafter "brick and mortar") environmental stimuli such as in-store lighting and music have been proven to affect consumers' emotional states and in turn, their behavioural responses (Eroglu, Machleit and Davis, 2001). The design of the online shopping experience such as the colour scheme, music and ease of use of the website should therefore also affect consumers' emotional states and their behavioural responses; thus, the design of the online shopping experience should be as thoroughly deliberated, as are brick and mortar environmental stimuli or atmospherics.

The design of the online shopping experience is becoming increasingly important because the number of consumers buying online and the amount of money being spent by online purchasers is on the rise (Swinyard and Smith, 2003). According to the U.S. Census Bureau's *Monthly Retail Trade Survey*, internet retail sales in 2000 were $25.8 billion, 49% higher than 1999 sales of $17.3 billion (Srinivasan et al., 2002). In addition, the United States Commerce Department recently released a report indicating that online commerce totalled $12.5 billion, or 1.5% of all sales from April to June, the second quarter of 2003. That compares to 1.2% in the second quarter of last year (2002) and is the second largest share of sales since their survey began in 1999 (New York Times, August 25, 2003, p.C6).

E-retailing boasts many advantages over shopping in brick and mortar stores such as greater flexibility, higher market outreach (wide domestic and international reach), lower cost structures, faster transactions, broader product lines, greater convenience

(temporal and spatial) and customization (Eroglu et al., 2001; Srinivasan et al., 2002). E-retailing also has its disadvantages. On the internet, the competition lurks only a few mouse clicks away and as a result, consumers are able to compare and contrast prices and products with ease (Clarke, 2001; Van Riel, Liljander and Jurriëns, 2001; Srinivasan et al., 2002). The result is fierce price competition, unpredictable consumer responses to marketing stimuli and dwindling loyalty (Srinivasan et al., 2002). Clarke (2001) nonetheless suggests that there is no reason to believe that e-retailers cannot generate the same degree of consumer loyalty as traditional brick and mortar stores. This thesis will attempt to show that loyalty does exist on the internet and will show which parameters of a website's homepage are, amongst other things, contributors to consumer loyalty.

To date, insufficient empirical work has been conducted on the major implications of the internet for consumer behaviour in the context of a consumer's web browsing experiences. There is, however, a vast literature on the influence of in-store atmospherics on consumers' responses, yet little is known about the effect of homepage design on consumers' responses. Because we have seen that consumer behaviour in a brick and mortar environment can be influenced by atmospheric variables (Eroglu et al., 2001), the design of websites are likely to be equally as influential. The scientific literature is silent on the subject and Peterson, Balasubramanian and Bronnenberg (1997), Novak, Hoffman and Yung (2000), Eroglu et al. (2001) and Katerattanakul (2002) concur that most of what is known about the potential impact of the internet is based on anecdotes, experiential evidence and ad hoc qualitative studies. Swinyard and Smith (2003) contend that the scientific literature on e-retailing "has not reached mature development" (p.3).

The trade literature, however, is replete with checklists and 'how to' guides for website design but few have been objectively or systematically tested. For example, Carroll and Broadhead (1999), in their book, *Selling Online*, provide readers with a variety of checklists, including sixteen different ways to promote your online store and ten tried-and-tested techniques to bring customers back to an online store. Timacheff and Rand (2001), in their book, *From Bricks to Clicks*, offer their own checklist of what helps to strengthen an online brand. There is a plethora of similar 'how to' lists in the multitude of books appearing on the shelves of bookstores and libraries. Upon careful examination, there is considerable overlap between the many checklists and they contain many common underpinnings. However, the most common element in each of these 'how to' guides is that their checklists all lack systematic categorization, consistency and organization. For example, each author can have a different name for the same concept or can rationalize a different set of priorities for budding e-retailers. This lack of consistency between authors and checklists forces a reliance on subjective measures to guide the design decisions required to build a successful e-retailing website. Subjective decisions are based on instinct rather than on empirical reasoning or proven techniques. The subjectivity that currently underlies the decision-making in the website design arena is of little benefit to marketers because they have no scientific and objective proof of the parameters that lead to the design of a successful e-retailing website. Marketers, therefore, are forced to rely on their hunches and intuition.

It is vital for academic research to take the next step by beginning to examine the parameters of websites more objectively. Objective analysis of website parameters is the first step towards understanding the implications of design decisions and the

repercussions they may have for consumer behaviour. This understanding will allow marketers and web designers to make more educated decisions about the different design features of their websites and they will no longer have to rely on gut feeling and instinct. This thesis makes one of the first attempts at suggesting an objective and categorical organization and measurement of the multitude of website parameters that are so frequently mentioned in the trade literature.

E-retailers are pining for the attention of consumers. Designing a site that will engage consumers is daunting because consumers shop online to achieve different goals such as for entertainment, to pass the time or to search for specific information or products (Wolfinbarger and Gilly, 2001). Because web surfers' goals are different, so are their expectations of and consequently their responses to the website. It is therefore crucial for firms to understand the relationship between the objective parameters of a website and the behavioural responses of consumers. The more they know about which design parameters contribute to particular behavioural responses, the more they will be able to tailor their websites to derive the desired consumer responses.

The saying, "a first impression is a lasting impression" applies in both brick and mortar and virtual retail environments. An e-retailer's homepage can be likened to a window display in a brick and mortar store; it is ultimately what lures consumers in (Carroll and Broadhead, 1999). A website's homepage is the front page of a website and a web surfer's initial interaction with a website. A homepage sets the tone for and can give consumers an idea of what to expect from the rest of the website. A web surfer's experience with and impression of a website's homepage make him/her decide if s/he would like to proceed to experience the rest of the site or not. It is therefore extremely

important for homepages to be properly designed in terms of atmospheric qualities, conveying brand image, providing relevant and meaningful information, and facilitating an easy transition to the rest of the website. A homepage's ultimate goal is to encourage consumers to peruse beyond the homepage and to discover the remainder of the website. The look of the e-retail store is vital when operating in a competitive environment such as the internet. Web surfers will often make a decision about whether to enter an e-retail store based on how it looks on the front page.

There are three primary objectives of this thesis. The first is to investigate and propose an objective categorization and measurement scheme for the parameters of a website's homepage. The second is to examine what objective design parameters of a website's homepage contribute to consumer stickiness and loyalty. The third objective is to see if there are any differences between the objective parameters employed by virtual e-retailers and brick and mortar e-retailers. The research proposition is two-fold: (1) e-retailers can influence consumer stickiness and loyalty and; (2) consumer stickiness and loyalty will be impacted by a consumer's experience with the website.

This thesis attempts to contribute both practically and conceptually to an emerging area of research whose focus is on understanding how consumers behave in a computer-mediated environment and more specifically, how they behave on the internet. Practically, the findings should help to guide managerial decisions on the design of homepages to elicit specific behavioural responses from consumers. The design of a website's homepage is entirely under the control of the website designer and thus can be manipulated accordingly. In addition, this study also contributes the beginning of a systematic investigation into the objective parameters of a website's homepage. From a

conceptual perspective, this study adds to our understanding of online consumer behaviour and how consumers are likely to respond to different website parameters.

The literature review will focus on online consumer behaviour and website design parameters. The literature review will also draw insight from the areas of psychology, design and electronic commerce. Next, two distinct yet complementary studies will be described. Study 1 uses the guiding principles of a grounded theory and qualitative approach to suggest a means of categorizing and measuring the parameters of homepages. Study 2 then uses this categorization in a web browsing field study to examine the relationship between the parameters and the web surfer level outcomes of stickiness and loyalty. Finally, the conclusions drawn from these studies are put forth, as well as their limitations, directions for future research and marketing implications.

2. LITERATURE REVIEW

The internet and the World Wide Web became more prevalent over a decade ago and they have irreversibly transformed the ways in which we communicate, acquire information, spend our leisure time and even shop. The World Wide Web was not originally designed for a specific set of services. Many of the currently available services such as direct real-time interaction had not even been conceived when the World Wide Web was designed. The World Wide Web is an efficient medium for accessing, categorizing and relaying information. One researcher predicted that it "would ultimately become the medium by which we keep in contact with our families, watch television, dash off a note to a friend, check the traffic, read the newspaper, prepare a report for work, make a phone call, buy a book" (Peterson et al., 1997, p.331). Berthon, Pitt and Watson (1996) portrayed the World Wide Web as a combination of an electronic trade show and a community flea market:

> "As an electronic trade show, it resembles a giant international exhibition hall where potential buyers can enter at will and visit prospective sellers. They may do this passively by simply wandering around, enjoying the sights and sounds, pausing to pick up a pamphlet or brochure here and there...They can talk to fellow attendees, actively seek the booths of particular exhibitors, carefully examine products and services, solicit richer information, and even engage in sales transactions...As a flea market, the Web possesses the fundamental characteristics of openness, informality, and interactivity – a combination of a community and a marketplace" (p.25).

Web surfers expect that the internet offers a variety of activities and will allow them to achieve a multitude of goals. Each web browsing experience can be strikingly different from each other. Thus, it is important to begin to understand how the various functions

of the World Wide Web can potentially influence how consumers behave while they web surf.

The World Wide Web is frequently likened to a global firm since consumers worldwide can access it, there are no time constraints and time zones have no meaning. Due to these features, it is especially suited for reaching niche markets where buyers and sellers are small and geographically dispersed and the products or services are specialized or unique (Peterson et al., 1997).

Peterson et al. (1997) offer a list of characteristics of the World Wide Web that are shared with other marketing channels and others that are unique. They are shown in Table 1.

Table 1: A list of characteristics of the World Wide Web that are unique and shared with other marketing channels. Source: Peterson et al. (1997).

Unique Characteristics	Shared Characteristics
The availability of powerful and inexpensive means of searching, organizing and disseminating vast amounts of information	The ability to serve as a transaction medium
Interactivity and the ability to provide information on demand	The ability to serve as a physical distribution medium
The ability to provide perceptual experiences that are far superior to a printed catalogue, although not as rich as personal inspection	
Relatively low entry and establishment costs	

The unique characteristics mentioned in Table 1 require some consideration. Firstly, the ability of the World Wide Web to store vast amounts of information can have both positive and negative effects from the perspective of consumers. Consumers on the internet desire access to an abundance of information. Conversely, if the information is

not properly organized or hard to find, the vast amounts of information can be extremely overwhelming for consumers and may deter them from remaining on the website or from visiting the site again in the future (Northwestern University Researchers, 2002).

Secondly, the relatively low entry and establishment costs associated with bringing a brand online require a caveat. Firms must fight the urge to throw their websites and their brands online. Firms must develop an internet strategy before they decide to bring their brands online. Carroll and Broadhead (1999) assert, "With the massive sensationalism that surrounds e-commerce and online shopping, there are many companies rushing to peddle their wares over the Internet. Yet many of these companies don't have sound business plans, nor have they done any market research..." (p.7). Brick and mortar e-retailers should develop a strategy that properly complements the brick and mortar version of their brands and virtual e-retailers must convey a cohesive brand image and ensure a well thought out internet strategy (Breakenridge, 2001). There are many e-retailing success stories; however, there are also many e-retailing ventures that were unsuccessful (Carroll and Broadhead, 1999). Toys R Us is the classic example of a firm that rushed its brand into the virtual environment and ultimately bombed. Thus, although the internet possesses unique characteristics that differentiate it from other marketing mediums, these unique features should not be automatically viewed as beneficial, but should be considered with caution.

Thirdly, the perceptual experiences that Peterson et al. (1997) mention as the third unique characteristic of the World Wide Web are particularly relevant to this thesis because they are created by many of the website design parameters that are going to be discussed in detail. For example, the interactivity, navigability, atmospherics and brand-

related parameters of a website's homepage together create an impression in the minds of consumers. This impression subsequently influences their perception of what they are seeing on their computer screens and of what they are experiencing as they interact with the internet and with a website.

Peterson et al. (1997) and Novak et al. (2000) assert that to date no other marketing channel possesses all of the characteristics mentioned in Table 1. This poses a challenge to marketers because new features of a new marketing medium mean that consumers are likely to behave in new ways and possibly quite differently than they have in the past. In order to predict consumer behaviour, marketers must first understand it and what drives it. In addition, knowing what the new medium has the ability to do enables website designers and marketing managers to tailor their websites to meet the evolving needs of consumers in an up-to-date and relevant manner. They can maximize the power of the internet as a marketing channel if they fully understand what it has the capability of doing. Once the internet's capabilities are clearer, it will then be possible to examine how the internet influences a consumer's web browsing experiences. There is currently a gap in the existing literature on consumer behaviour on the internet. Little research has been conducted to analyze what features of the internet may impact a consumer's web browsing experiences. This thesis proposes to examine the effects of website parameters on consumers' experiences as they sit in front of their computer screens perusing e-retailing websites.

Who are online shoppers?

Not only is it important to understand the characteristics of the internet to better understand online consumer behaviour, it is also important to know the characteristics of online shoppers. Knowing the characteristics and habits of online shoppers will allow marketing managers and website designers to develop websites that effectively meet the needs of the consumers visiting their sites.

Research has shown that many consumers view a brick and mortar shopping experience as a source of enjoyment and an opportunity for social interaction (Peterson et al., 1997). For these consumers, the shopping experience adds value to the goods and services they buy and variety to their lives. It is unlikely that these consumers will ever use the World Wide Web for shopping. Other people may decide not to use the World Wide Web for shopping due to lack of access, technophobia or inertia. Still other consumers will use the resources of the World Wide Web for making purchases while retaining conventional retailers for other things (Peterson et al., 1997).

Profiles of online shoppers are beginning to emerge in the academic literature. One study of 790 respondents revealed that age, income, innovativeness, risk aversion, impulsiveness, variety-seeking propensity, attitude towards direct marketing and attitude towards advertising are significant predictors of online shopping behaviour (Galan and Gonzalez, 2001). They found that on average, online shoppers are older and earn more money than the World Wide Web users who do not make purchases online. They are also more impulsive and in search of variety (Galan and Gonzalez, 2001). Wolfinbarger and Gilly (2001) specifically asked online buyers if they are more impulsive while shopping online or offline and an overwhelming number of respondents indicated that

they were more impulsive shoppers offline. The lack of impulsiveness online is accounted for by the inability to take immediate possession of the goods, the ease of returning at a later point in time to make the purchase and the trouble of having to mail back any unwanted items (Wolfinbarger and Gilly, 2001). A more recent study conducted by Swinyard and Smith (2003) found that as compared to online non-shoppers, online shoppers are younger, wealthier, better educated, have higher computer literacy, spend more time on their computer, spend more time on the internet, find online shopping to be easier and more entertaining, and are less fearful of financial loss from online shopping. Further academic research is required to broaden and to build upon our understanding of the profiles of online shoppers.

Brick and Mortar E-Retailers versus Virtual E-Retailers

Brick and mortar stores contend with competition that extends beyond the traditional online and offline competition – virtual e-retailers such as Amazon, CDNow and Monster are pervasively invading the World Wide Web. Brick and mortar e-retailers are traditional retailers that have decided to expand their market reach by adding an online component to their marketing channel and sales strategies. Virtual e-retailers, on the other hand, are those that exist solely in a virtual environment and do not have a physically accessible retail outlet to complement their online existence. The distinctions between the two types of e-retailers are important because the present study investigates the different use of website design parameters by the two types of e-retailers and attempts to discover if consumers behave differently with brick and mortar e-retailers than they do with virtual e-retailers.

There are significant differences between a brick and mortar e-retailer and a virtual e-retailer. Firstly, virtual e-retailers are entirely dependent upon the World Wide Web in terms of their existence while brick and mortar e-retailers are not. Secondly, for brick and mortar e-retailers the internet is a "powerful brand-building tool to strengthen their total marketing clout" (Breakenridge, 2001, p.50). Many brick and mortar e-retailers rely on the internet more for relationship marketing and less as a retail channel through which they can sell their product, even though they do also make sales through their websites. On the other hand, virtual e-retailers are entirely reliant on the internet for their existence and they are slightly more restricted in the number of elements from the traditional marketing mix they can use to build their business. According to Breakenridge (2001), "[virtual e-retailers] are, in a funny way, more fragile than offline brands. They can't be protected from competition by a patent or a unique, a secret formula, or some proprietary piece of technology" (p.50). Virtual e-retailers must also pay closer attention to brand identity components because once their website changes so does the brand and the consumer's perceptions of the brand (Breakenridge, 2001).

Beyond the differences between brick and mortar e-retailers and virtual ones, there are many advantages to having a well-known traditional brick and mortar brand. Marketers realize that as brands fulfill the promises they have made to consumers, the more satisfied consumers will be and therefore the more loyal (Breakenridge, 2001). The online counterpart to an offline brand must be properly strategized. The e-brand must be familiar to consumers and must offer a new interactive façade to the brand. For example, Disney online engages millions of consumers by coupling their existing brand power with visual interaction (Breakenridge, 2001). Another advantage to a well-known brick and

mortar brand is that consumers who are familiar with it will take the time online to experience it and to explore it. Breakenridge (2001) asserts, "If consumers are willing to travel to a brick-and-mortar location, then the Internet is pure convenience" (p.60). A popular example of a brick and mortar e-retailer that was rushed into the virtual environment and ultimately failed is Toys R Us. When Toys R Us launched their website, consumers had high expectations that Toys R Us would be able to fulfill their holiday shopping needs. A poorly planned holiday season ruined the brand and sent consumers flocking to other e-toy websites (Breakenridge, 2001). Carroll and Broadhead (1999) insist that prospective e-retailers should not rush to create an online store and should spend some time doing their "homework" (p.9).

Another school of thought contends that virtual e-retailers have a distinct advantage over brick and mortar e-retailers for two reasons. Firstly, virtual e-retailers are by definition more exclusively associated with the web in the minds of consumers (Le Bel, Vakratsas, Mukherjee, Sears and Dubé, 2003). Secondly, the trade press suggests that virtual e-retailers are generally better able to leverage new technologies in service of their brands than are brick and mortar e-retailers. The speed and versatility of virtual e-retailers in implementing new technologies can be perceived as an advantage over brick and mortar e-retailers (Timacheff and Rand, 2001).

This thesis will attempt to take a closer look at distinctions in online consumer behaviour that may exist as a function of the type of e-retailing strategy employed – either brick and mortar or virtual e-retailer.

Website Parameters

The objective parameters of a homepage refer to the site design elements of a homepage that can be manipulated by managers so that they can maintain a brand's image and better predict consumer responses. The internet is constantly evolving. Websites that are online today can disappear tomorrow. Websites that look one way today can look entirely different tomorrow. Thus, establishing a list of objective parameters of a website might appear comprehensive today but by tomorrow many new parameters might be available for implementation. Nonetheless, it is important to begin to delineate more objective parameters of a website that will allow for more critical evaluation of a website's effectiveness in terms of eliciting desired consumer behavioural responses.

Website design is a significant predictor of a consumer's satisfaction with a website (Szymanski and Hise, 2000). Website parameters including personalization, interactivity, convenience and well-organized information have been proven to affect consumer response to websites (Wolfinbarger and Gilly, 2001; Srinivasan et al., 2002). However, most of the existing academic research linking these website parameters and consumers' responses has been conducted using ad hoc categorization and subjective perceptual measurement of the website parameters. For example, Srinivasan et al. (2002) found that consumer's perceptions of a website's interactivity were a predictor of online loyalty. They defined interactivity as "the availability and effectiveness of customer support tools on a website, and the degree to which two-way communication with its customers is facilitated" (p.42). The authors measured interactivity by asking respondents to offer ratings of some of the following statements, "I feel that this is a very

engaging website" or "I believe that this website is not a very dynamic one" (p.48). However, each person's definition of "engaging" and "dynamic" is different and thus, the feedback is of little use to marketing managers. The subjectivity of asking a web surfer if a particular website is "engaging" to them without offering a universal understanding of and conceptualization of the word "engaging" allows for excessive interpretation.

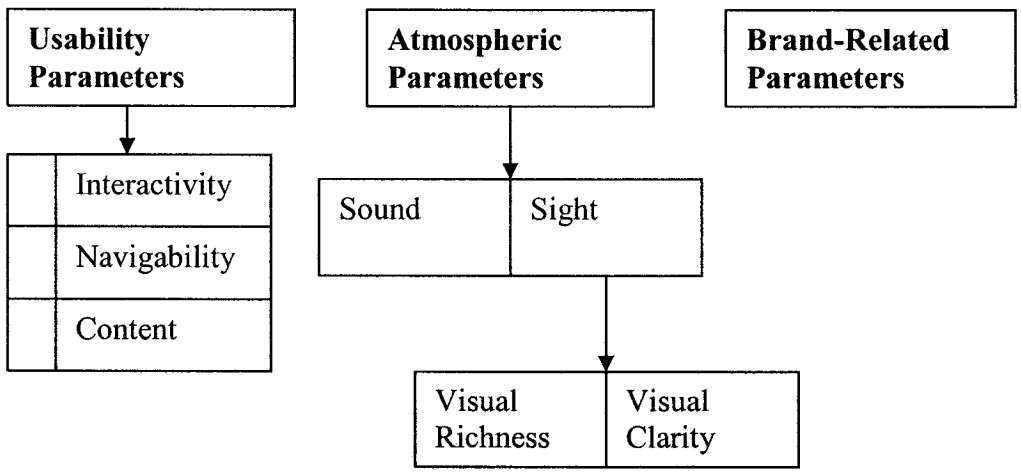
The ambiguity implied by the subjective measures forces website designers and marketing managers to rely on interpretation and guess work and to make intuitive decisions about the parameters they are going to use when designing their sites. They are therefore not properly equipped to evaluate the effectiveness of their decisions or to make strategic changes if their desired behavioural responses are not being achieved.

Carroll and Broadhead (1999) were correct when they wrote, "Look [around], and you will see many different descriptions as to the 'ideal' components of an online store" (p.21). A review of both the academic literature and the trade press indicates that the existing literature on website design requires extensive clarification and re-organization. Multiple authors are currently using different words to describe the same features and every author has a different method of and perception of the way the website parameters should be classified and subsequently organized. Perhaps the greatest contribution of this thesis will be an attempt to restore order to the current literature on the parameters required for successful website design and to encourage consistency between practitioners and academics in the field.

Based on an extensive review of the literature, I propose that the parameters of a website's homepage can be divided into three categories: (1) usability; (2) brand-related and; (3) atmospheric parameters. The usability parameters can be further divided into

three to include: (1) interactivity; (2) navigability and; (3) content. The branding parameters refer to the website's ability to represent the brand in a virtual environment. The atmospheric parameters are similar to those discussed in the traditional retail literature and include those that set the mood for the site such as the colour, fonts and borders etc. They too can be divided into two, those relating to: (1) sound and; (2) sight. Figure 1 offers a visual representation of the proposed breakdown of website parameters and the way they are used for the purposes of the studies described in this thesis.

Figure 1: The proposed organization of the objective parameters of a website's homepage.



A more thorough examination of each of the parameters is now presented.

Usability Parameters

Interactivity. Researchers have acknowledged the importance of interactivity between consumer and e-retailer (Wolfinbarger and Gilly, 2001; Srinivasan et al., 2002). Srinivasan et al. (2002) define interactivity as "the availability and effectiveness of customer support tools on a website, and the degree to which two-way communication with customers is facilitated" (p.42). Interactivity can increase the amount of information that can be presented to a consumer. Srinivasan et al. (2002) offer the example of a bookstore where a customer is limited to reading the front and back flaps of books to find out what the book is about. An online consumer can read book reviews and can receive recommendations from other like-minded individuals who have purchased the book or are purchasing similar products. Interactivity also enables the e-retailer to gain more knowledge about their consumers' tastes and preferences. Consumers are therefore encouraged to return to the website to gain from and to add to the repository of information (Srinivasan et al., 2002).

Wolfinbarger and Gilly's (2001) concept of *lack of sociality* relates to Srinivasan et al.'s (2002) concept of interactivity. Online shopping facilitates a relationship between a consumer and a mediated environment as opposed to between buyer and seller. Online there are no salespeople, spouses, crowds or lines (Wolfinbarger and Gilly, 2001). Online consumers appreciate not having to deal with uninformed or pressuring salespeople, however, sometimes they require assistance and would like to talk to someone. Online consumers frequently complain that e-mail assistance is too slow and that the responses are impersonalized and therefore do not help them solve their problem (Wolfinbarger and Gilly, 2001). Online consumers try to avoid relying on the help of

others; however, once they have conceded that they require assistance they would like it to be available to them immediately (Wolfinbarger and Gilly, 2001). According to Forrester Research, nearly 5 million online shoppers requested customer service in 2002 and as the internet continues to become more popular, that number will invariably rise (Northwestern University Researchers, 2002).

E-retailers must improve their interactivity and customer service if they hope to attract and retain consumers. Some examples of properly orchestrated interactivity and customer service include: (1) AT&T has an online assistant on their website that offers to provide customers with a step-by-step process of how to complete their online transactions, particularly related to billing (Northwestern University Researchers, 2002); (2) On FTD.com, once a consumer makes a purchase, they are sent an email confirming the purchase and they are provided with a reference number and a 1-800 number to call to check on the progress of their order (Northwestern University Researchers, 2002) and; (3) Amazon.com built a large, well-staffed call center where consumers can call when they need help (Wolfinbarger and Gilly, 2001).

Navigability. The literature makes frequent mention of terms such as convenience within a website, logical organization, ease of use, accessibility and the ability to save time and effort. These elements can be combined to provide a measure of the *navigability* of a website.

According to Srinivasan et al. (2002) convenience is "the extent to which a customer feels that the website is simple, intuitive, and user friendly" because it is these elements that are important precursors to the successful completion of online transactions

(p.44). Because a website is the intermediary between the consumer and the firm, it represents the central and sometimes the only interface with the marketplace. Researchers at Northwestern University suggest that site designers must build websites from the perspective of the consumer and concentrate on easiness, utility, functionality, convenience and speed (Northwestern University Researchers, 2002).

Nearly 30% of the consumers who leave a website do so without making a purchase because they are unable to navigate their way through the website (Srinivasan et al., 2002, p.44). If information is not in a logical place, buried too deeply within the website, not represented in a meaningful manner or entirely absent, consumers are likely to abandon their search (Northwestern University Researchers, 2002). An overwhelming number of people give up looking for products or abandon their shopping carts prior to checkout because they either are confused or have been scared off (Northwestern University Researchers, 2002). All these convenience-related features ultimately point to the navigability of a website.

Still other research suggests that a navigable website also implies short response times, facilitates fast completion of a transaction and minimizes consumer effort (Supphellen and Nysveen, 2001; Northwestern University Researchers, 2002; Srinivasin et al., 2002). A logical and navigable website is likely to minimize the number of mistakes consumers will make and, in turn, will increase their satisfaction with their online experiences (Srinivasan et al., 2002). A poorly organized website wherein a consumer cannot find the information and products s/he is looking for can have a deleterious effect on the quality of the purchase experience (Galan and Gonzalez, 2001). Lynch and Ariely (2000) conducted a study on online wine shopping experiences and

found that shoppers prefer more "transparent informational environments" (p.96). They found that consumers' satisfaction with their shopping experience increased as search costs were lowered and that they would be more likely to be retained when asked two months later to continue using the same wine-shopping website to buy wines from home (Lynch and Ariely, 2000). They also found that virtual environments that made wine quality a more usable feature on a site and by allowing for store comparison of wines allowed consumers to choose wines better suited to their personal tastes (Lynch and Ariely, 2000).

There is not only a lack of systematization between authors; there is also a lack of organization within authors' work. For example, Wolfinbarger and Gilly (2001) refer to navigability as the ease of use of a website and making it easy for consumers to pick up where they left off when they decide to return to a site. They found that 88% of online shoppers during the 1999 holiday season abandoned their shopping carts although 20% ultimately returned to complete their transactions at a later point in time (Wolfinbarger and Gilly, 2001). Many sites save the contents of shopping carts knowing that online buyers tend to come back to finish their transactions. Wolfinbarger and Gilly (2001) also refer to navigability by defining the convenience of a website in terms of saving time and effort, including both physical and mental effort. They found that online shoppers do not need to conform to social conventions of grooming and acceptable behaviour because they are shopping from the comfort of their own home (Wolfinbarger and Gilly, 2001).

Moreover, while the transaction itself may be more convenient online, in some ways websites are less convenient. Shoppers cannot touch or try on products and visual inspection is not as easy online as it is in a store. While some websites such as

landsend.com and eddiebauer.com offer "virtual" dressing rooms and models, one study cited by Wolfinbarger and Gilly (2001) did not come across any subjects who had actually made use of these two convenience items. Consumers tend to deal with the inability to touch or try on products online by refraining from purchasing clothing or shoes online or by investigating these items offline before buying online (Wolfinbarger and Gilly, 2001). The ability of shoppers to sample merchandise such as on Amazon.com and Borders.com that allow consumers to read excerpts from books or on CDNow.com that offers the chance to play a part of the music enhances the navigability of a website. These navigation aids serve the same function as signs in a retail outlet that help a consumer to move through the store quickly and efficiently thus assisting with the completion of the transaction and shopping task (Eroglu et al., 2001).

Authors have their own way of referring to the *navigability* of a website. It is argued that the various concepts such as ease of use, convenience, logicality, and the saving of time and effort can be combined to measure adequately the *navigability* of a website.

Content. As compared to a conventional retailer confined by the availability and cost of floor and storage space, an e-retailer is able to offer a wider array and variety of products. E-retailers are also in the position to form strategic alliances with other virtual suppliers in order to offer consumers more choice (Srinivasan et al., 2002). Interestingly, online buyers' perceptions that e-retailers offer better selection has more to do with the selection available on the World Wide Web as a whole, rather than the selection on individual sites (Wolfinbarger and Gilly, 2001). Wolfinbarger and Gilly (2001) contend

that consumers perceive the Internet to be replete with choice but that they rarely find the selection they are looking for on a particular e-retailer's website. Online buyers expect that over time, complete product lines will be available online and they anticipate the increase in selection as reason for shopping on the Internet more in the future (Wolfinbarger and Gilly, 2001). The increase in the number of options available at a single e-retailer reduces the opportunity cost of time and the costs of inconvenience that would be spent on jumping from website to website. The e-retailer that offers greater choice can become the top-of-mind one-stop shopping stop, thus resulting in positive behavioural responses and ultimately in loyalty.

The trade literature discusses the issue of content in a more hands-on and practical manner. Carroll and Broadhead (1999) urge e-retailers to update constantly the content of their websites and to refresh the products they feature on their homepages. These two schemes will give the impression that the website is up-to-date and not staid. To illustrate these techniques, Carroll and Broadhead (1999) cite the examples of www.clinique.com that always puts the month on the top left corner of their homepage and www.etoys.com that consistently changes its picks of the month thus highlighting different products monthly.

Atmospheric Parameters

The look of an online store is vital because the internet is such a competitive environment. Consumers will often make a decision about whether to enter an online store based on how the front page looks and feels (Carroll and Broadhead, 1999). The

atmospheric parameters refer to those parameters that contribute to the look and feel of a website.

Eroglu et al. (2001) discuss the media richness theory that offers a distinction between "lean" and "rich" media based on the number of cues elicited. Lean media are typically characterized by unequivocal and unambiguous information while richer media contain more emotional, ornamental and emphatic features (p.179). They suggest that all computer-related media are essentially lean because of their inability to evoke responses based on many sensory and sensual elements that can exist in other contexts. Eroglu et al. (2001) also suggest that for online retailing the extent of leanness is determined by the degree to which the information presented to the online consumer on the screen is directly related to his/her shopping goals. They offer the example of a consumer's online hunt for a pair of khaki pants. A consumer may go to a website and find a picture of the pants, a description of the fabric, sizing information, the price, shipping information and ordering instructions. All of this information would be directly related to the consumer's goal of finding a pair of khaki pants. Alternatively, the site can offer more ornamental depictions of the item such as people participating in an activity while wearing the pair of pants, a vividly coloured background with many graphics etc. that would enhance the hedonic quality of the shopping experience but does not provide the necessary information required to achieve the consumer's shopping goals (Eroglu et al., 2001). Although such decorative cues do not directly affect the completion of the transaction, they can create the atmosphere that can potentially make the shopping experience more pleasurable and memorable and can provide the confidence that a consumer is lacking when dealing with an unknown retailer (Eroglu et al., 2001).

For over three decades, academic research has acknowledged the influence atmosphere can have on sales. The environmental cues present in retail outlets have been proven to affect a consumer's emotional state and in turn their attitudinal and behavioural responses toward the retail outlet (Eroglu et al., 2001). Atmospherics has been defined as "the effort to design buying environment to produce specific emotional effect that enhances the purchase probability. The music, the colours, the scents, the luminosity...are such atmospheric elements" (Galan and Gonzalez, 2001). Empirical research on atmospherics has largely focused on cues such as music, lighting, colour and scent and researchers have discovered that atmospheric cues play an important role in developing a consumer's responses and behaviours within both retail and service environments (Eroglu et al., 2001). Similarly, Solomon et al. (1996) reported that the extent of pleasure reported by shoppers five minutes after entering a store was largely predictive of the amount of time spent in the store and the level of spending.

The physical environment of a traditional brick and mortar store impacts the behavioural shopping outcomes of consumers just as the atmospheric qualities of the virtual environment are likely to influence web browsing behaviour, consumer satisfaction, the amount purchased online, time spent in the virtual store and the likelihood of repatronage (Eroglu et al., 2001). The e-retail environment lacks many of the properties of traditional atmospherics in brick and mortar stores, including the presence of three of the five senses (taste, touch and smell). However, the e-retail environment possesses some properties unique to a virtual environment such as flexibility across time and space that differentiates an e-retailer significantly from traditional retail stores. Online there are no crowds, other shoppers or employees although their presence

may be implied through web counters, posts on a bulletin board or even delays in accessing a part of a website due to system overload of too many other users making the same access attempt (Eroglu et al., 2001). That which cannot be exactly reproduced from the brick and mortar environment and portrayed in the virtual environment can be conveyed in the virtual world by different parameters; hence emerges the importance of systematically organizing the website parameters. The existing literature acknowledges the differences between the two environments but does not offer any categorical suggestions about the ways in which practitioners and academics can reconcile these differences.

Increasingly, websites are making use of different atmospheric elements (Galan and Gonzalez, 2001). Several web-based studies have indicated that a website's "online atmospherics" such as screen background, music, pictures, colours and comments can influence the behaviour and internal reactions of consumers (Galan and Gonzalez, 2001). The overall image or personality of a website is created through the choice of text, style, graphics, colours, logos, slogans or themes (Srinivasan et al., 2002). Cues such as colour, background patterns, typestyles and fonts make the content easier (or more difficult) to read and they help to create a particular mood or image for the site (Eroglu et al., 2001; Northwestern University Researchers, 2002). Similarly, animation can attract attention but it can also be a source of distraction. All the elements of a website are not perceived independently but rather in a holistic manner with each element contributing to a bigger picture of a website's characterization (Galan and Gonzalez, 2001).

Brand Parameters

Despite the plethora of terms and concepts mentioned in the website design literature, one that has received little consideration relates to the branding features on a website. Some of the brand-related parameters of a website can include the presence of a brand logo, brand character or consistent use of a brand's colours. According to Alice Uniman, President of Phoenix Brand Strategies, a brand is a "promisemark...a brand promises its customers the consistent satisfaction of a specific set of expectations. Consumers buy brands, not products or services" (cited in Breakenridge, 2001, p.49). A strong brand produces long-term loyalty that eventually leads to brand equity and higher profit margins. The website design must reflect the company, the brand and their image. A company's website must be a vehicle to strengthen the brand's image. Breakenridge (2001) asserts that the transition to an online environment must maintain designs and imagery consistent with the offline brand. She offers the example of Nickjr.com, Nickelodeon's website. On Nickjr.com the pictures, activities and site animation reflect the Nickelodeon characters children have come to love offline through their television programming. The daily television programs in conjunction with the online activities and atmosphere allow children to develop intimate bonds with the characters and the brand (p.94). Consumers of all ages have proven to support brands because of the emotional bond they form with them and the expectations that the brand fulfills a particular need (Breakenridge, 2001).

In the context of a virtual environment, branding is also important for identification and credibility purposes. If a consumer can readily identify the brand and the positive attributes associated with it, then he/she is more likely to investigate and

engage the virtual version of that brand (Breakenridge, 2001). Some examples of brand parameters include the website's primary function, the presence of the brand colours and brand logo.

Behavioural Responses and their Importance to E-Retailers

Consumer responses to marketing stimuli can be divided into two categories: attitudinal and behavioural. Attitudinally, different feelings towards a product or service create a consumer's overall attitude and attachment to the product or service. Ha (1998) contends that understanding the attitudes of consumers will allow marketers to better predict what behaviours accompany certain attitudes. Rowley and Dawes (2000) suggest that it is erroneous to assume that attitude causes behaviour and that "attempts at establishing causal primacy may be unrealistic as thoughts and feelings are interwoven and that changes in one component may affect others in the system. Other variables such as the social and physical environment as well as personal abilities have been found to pre-empt action" (p.2). Supphellen and Nysveen (2001) state that attitude theory suggests that behavioural intention towards an object is explained by the attitude towards the object, thus attitude towards a website is a determinant of one's intention to visit the website. It is therefore important that firms know how consumers develop positive attitudes towards homepages so that they can design them accordingly.

This research focuses on consumers' behavioural responses as opposed to their attitudinal responses. Behavioural responses can be divided into two categories: approach or avoidance behaviours. Approach behaviours are defined as the positive actions of consumers such as intentions to explore, to affiliate, to offer positive word of

mouth recommendations and intentions to stay (stickiness) and to come back again (loyalty). Stickiness can be related to the results of the study reported by Solomon et al. (1996) indicating that the pleasure reported by shoppers was predictive of the amount of time spent in the retail outlet. Stickiness is getting web surfers to stay on your website once they are already on it and it is typically measured as the amount of time spent on a website, how many pages a web surfer has viewed and how many levels they have drilled into a website. These approach behaviours contribute to a consumer's loyalty and increase a firm's profit through increased revenues, reduce the costs of acquiring new customers, lower customer price sensitivity and decrease the costs of serving customers familiar with a firm's delivery system (Hallowell, 1996; Rowley and Dawes, 2000). Avoidance behaviours are the opposite of approach behaviours; they are negative actions on the part of the consumer such as spreading negative word of mouth and determination never to return to a particular website in the future (Eroglu et al., 2001).

One study conducted in a traditional brick and mortar retail environment revealed that consumers' environmental perceptions affected their approach behaviours in terms of the amount of time and money spent, likelihood of returning and store exploration (Eroglu et al., 2001). Eroglu et al. (2001) suggest similar approach behaviours exist online depending upon the perceived "store" environment and the mediating effects of individual traits and internal states. More specifically, they propose that the extent to which the online store information facilitates the attainment of shopping goals, one can expect the online shopper to exhibit positive behaviours toward a particular website (Eroglu et al., 2001).

While there are many differences between brick and mortar retailing and e-retailing, there are two consumer behaviour concepts that are equally important in both environments; namely, (1) stickiness and; (2) loyalty.

Stickiness. Managers are no longer only interested in attracting the attention of web surfers; they want to be able to keep their attention, to get them to stay on their websites Murphy, 1999). Stickiness has been defined in a multitude of ways, from the longer the visit the more sticky the site, to how deep the user gets within a site (Northwestern University Researchers, 2002). Media Matrix, a leading digital media measurement company, measures stickiness based on the average time spent at a site per usage month (Northwestern University Researchers, 2002). Other e-commerce professionals offer definitions of stickiness shown in Table 2.

Table 2: Different definitions of stickiness. Source: Northwestern University Researchers, 2002.

Definition	**Source**
"Sticky, in web parlance, is the ability to get your visitors to stick around your site, and then to return to it later."	Bankrate.com
"Stickiness refers to a company's ability to retain users and drive them further into a site."	Wired News
"The stickiness of a website is the ability of a website to attract repeat visitors to that site and to keep visitors on that site."	About.com

Practitioners ultimately concur that stickiness involves three components: (1) duration of visits; (2) frequency of visits and; (3) depth of navigation (Gillespie et al., 1999). All three components are needed in a sticky site but they function

compensatorily; if one element is low, the others can compensate to create stickiness (Gillespie et al., 1999). For example, it can be argued that a sticky site will see the average amount of time that a user visits the site decrease over time. This is driven by the site expertise that the user develops during his/her frequent visits (Gillespie et al., 1999). A user can visit a site frequently and go into the depths of the site quickly because of experience in navigation. However, due to that experience, a long stay may not be required in each visit. Although the duration may decrease, the depth would likely remain the same, with the user's experience minimizing the navigation time (Gillespie et al., 1999). For example, a user might go to the Amazon website to purchase a particular book, be familiar with the site and be finished with the site quite quickly. On the next visit however, the user may have more time for perusing.

For e-retailing sites, measuring stickiness as the length of a visit on a site is not necessarily a positive thing because that could mean that a consumer is "lost" in the site or unable to complete their transaction. Similar problems arise with relying on depth as a measure of stickiness. Depth can mean that a user is surfing aimlessly because s/he cannot figure out how to complete the transaction due to poor site design. The weighting of the three components to ensure stickiness varies according to the purpose of the website (Gillespie et al., 1999).

Advertisers want to know how long the average person spends on a particular website each month. Nielsen/NetRatings and Media Matrix, two large measurement companies, have investigated the matter and found the levels of stickiness displayed in Table 3.

Table 3: Stickiness measured. Time spent per month by average user. Source: Media Matrix as found in Murphy, 1999.

Website	Time spent per month by average user	Stickiness (High/Low)
AOL (proprietary and Web)	5 hours, 34 minutes	High
EBay	2 hours, 3 minutes	High
Gamesville	1 hour, 32 minutes	High
Hotmail	1 hour, 22 minutes	High
Yahoo	58 minutes	High
Netscape	25 minutes	High
Bonzi Software	3 minutes	Low

What makes a site sticky is still open to debate. Some practitioners suggest that websites that offer a mix of four C's: community, content, communication and commerce encourage the stickiness of a site (Murphy, 1999). Wolfinbarger and Gilly (2001) concur that stickiness is related to the building of online communities through bulletin boards, newsletters and chat rooms. The trade press also suggests that some of the objective parameters of a website lead to stickiness. For example, Murphy (1999) asserts that personalization of websites can contribute to stickiness and that the goal of stickiness affects practically every decision made by website designers from content to advertising. In addition, according to a 1998 Forrester Research Report, content was found to be the most important factor in consumers discovering websites and what encourages them to return to a website (Murphy, 1999). The report revealed that content is what drives 75% of consumers to return to favourite sites, in addition to a "pleasing" design and quick download time (Murphy, 1999). Linda Della, the director of marketing at Andromedia, the company that assesses site traffic for companies like Levi Strauss, believes that those sites that customize the viewing experience have longer visits, higher return rates and higher product purchasing rates (Murphy, 1999). In addition, she found that web surfers

on personalized sites view at least 10 times more pages per visit than the four or five page views common on a non-customized site (Murphy, 1999). While the trade press proposes several links between stickiness and the objective parameters of websites, the academic literature has yet to examine any relationships that may exist between the two. This thesis will therefore attempt to address this gap by carefully examining how the objective parameters of homepages may affect online stickiness.

Managers are implementing different strategies to garner online consumer stickiness. Table 4 offers examples of some of the strategies being implemented by well-known websites.

Table 4: Some examples of the different strategies different websites are implementing to achieve stickiness. Source: Murphy, 1999.

Website	Stickiness Strategy	Category
CBS Sportsline	▪ Loyalty program that rewards registered visitors with points for surfing the site and buying merchandise ▪ Points are redeemable for prizes such as a basketball autographed by Michael Jordan ▪ Each time a consumer surfs the site, they are automatically entered in a $1 million drawing	Reward system
Mountain Bike Review	▪ Site offers more than 40,000 reviews of products and bike trails ▪ Loyalty encouraged by having surfers interact with each other ▪ Key to site's stickiness is that users can write product reviews, share experiences with others and "leave a piece of yourself"	Interactivity
Gamesville	▪ Gamesville's games start every 10 minutes and last a fixed amount of time ▪ The site has 1.3 million registered users and has sold advertising to 67 advertisers including Intel, Microsoft and JCPenney	Entertainment

Max Mancini, CEO of Consumer Review, the parent company of the Mountain Bike Review website, reported that one user survey found that 42% of users spent 15 to 29 minutes per site visit and 18% lingered between a half hour and an hour (Murphy, 1999). The CEO of the Gamesville website, Steve Kane admits that he and his employees work extremely hard to get users to log more than an hour a month on their

site. He stated, "We've always been focused on the idea that we have to capture people's time...our slogan is 'wasting your time since 1996'" (Murphy, 1999).

Loyalty. Behavioural loyalty can be defined as a consumer's approach behaviours such as offering positive word of mouth recommendations, repeat visits and purchases and maintaining a relationship with the good or service provider. To obtain and to maintain a consumer's loyalty is a daunting task because there is a plethora of reasons for consumers to be disloyal such as competition and consumers' inherent desire for variety (Ha, 1998). Consequently, there are a few reasons why loyal consumers are invaluable assets to a firm. Firstly, loyalty is considered an essential path towards profitability (Van Riel et al., 2001; Srinivasan et al., 2002). Loyal consumers can lead to increased revenues for the firm and can result in predictable sales and profit streams (Gremler and Brown, 1999; Van Riel et al., 2001). Gremler and Brown (1999) offer the following examples of the financial benefits of a loyal consumer:

- A loyal customer translates into $360,000 in revenues to Federal Express over his/her lifetime with the firm;
- A Domino's Pizza franchise in Baltimore calculated the lifetime value of a loyal pizza buyer to be $4,000 in revenue;
- A Connecticut grocer calculated the ten-year value of a loyal customer to his organization to average $50,000 and;
- A Cadillac dealer in Texas has computed the lifetime value of his loyal customers to be $332,000.

It is more costly for firms to acquire new customers and many customer relationships are initially unprofitable. Once the firm has developed a relationship with the consumer the cost of servicing him/her decreases and becomes profitable (Srinivasan et al., 2002). Research conducted by Bain and Co. found that online retailers lose money on one-time shoppers and offer the example of online grocers who must retain customers for 18 months just to break even (Clarke, 2001). Thus, for financial reasons it is the goal of any firm to develop relationships with consumers that encourage them to become loyal consumers.

Secondly, loyal consumers are more likely to purchase additional goods and services and they tend to spend more heavily as time goes by (Gremler and Brown, 1999; Van Riel et al., 2001). With the example of online grocers, customers were found to spend over 20% more in months 31-36 than in months 1-6 (Clarke, 2001). Thirdly, loyal consumers generate positive word-of-mouth recommendations to prospective and existing customers of a firm, which in turn leads to increased revenues and a favourable reputation (Srinivasan et al., 2002). The social support in terms of friendships, mentorship and encouragements offered by loyal consumers to more novice ones is also valuable to a firm. Gremler and Brown (1999) define the "loyalty ripple effect" as "the influence, both direct and indirect, customers have on a firm through (1) generating interest in the firm by encouraging new customer patronage; or (2) other actions or behaviours that create value for the organization" (p.274). Gremler and Brown (1999) also liken loyal consumers to "a large stone tossed into a small, still pond and generate ripples benefiting the firm, its employees and other customers" (p.287).

Many elements of a website's design can be controlled to attract web surfers and to produce desired effects on consumers. To generate repeat visits to websites, substantial amounts of resources are invested to develop superior websites that will attract consumers (Supphellen and Nysveen, 2001). The multimedia and interactive qualities of the World Wide Web have allowed firms to extend their advertising from texts and photographs in catalogues to more vivid and realistic representations (Galan and Gonzalez, 2001). A marketing executive of a United Kingdom Government Design Department said, "e-commerce gives efficient and effective means of getting hold of products/services, this can give added value through good use of design. The design improves the whole shopping experience. If you get this right, you will have loyal consumers" (McNally and Bradley, 2000, p.3).

The above literature review focuses on a variety of areas such as online consumer behaviour, the distinction between brick and mortar and virtual e-retailers, website parameters, stickiness and loyalty. At the same time, the literature review points to gaps in the existing literature and thus those that I have chosen to address in this thesis. These gaps include:

- The lack of any objective analysis of website parameters; Extensive effort will be made to propose objective categorization and measurement for website parameters.
- The lack of research linking website design features to consumer stickiness and loyalty; thus, an attempt will be made to determine the antecedents to stickiness and loyalty.

The next section will offer a detailed description of Study 1 including the methodology employed, the ensuing findings and a discussion.

3. STUDY 1: EXPLORATORY INVESTIGATION OF THE OBJECTIVE PARAMETERS OF A WEBSITE'S HOMEPAGE

As conveyed in the literature review, the academic literature has not yet been able to objectively analyze and measure the parameters of websites. Thus, this exploratory investigation is one of the first of its kind. The primary objective of the present study is to conduct an exploratory analysis of the parameters of a website's homepage and to suggest a means of objectively organizing and categorizing them. This is necessarily the next step for the e-retailing literature since it will allow progress to be made in terms of more efficient use and manipulation of website parameters. The objective parameters will help guide website design decisions to ultimately elicit specific behavioural responses from consumers.

METHOD

Given the lack of precedent in the e-retailing literature, the guiding principles of a grounded theory approach (c.f. Glaser and Strauss, 1967; Zaltman, LeMasters and Heffring, 1982) were used to derive a list of the relevant objective parameters that are likely to affect a consumer's behavioural responses. The grounded theory approach incorporates the existing relevant literatures, field observations and extensive interviews with practitioners to develop an initial framework from which to develop an organized framework of parameters that is theoretically sound and practically useful. This initial framework is then empirically tested in studies that are more formal. In this case, an extensive review of the literature on website design in the context of consumer research,

psychology, design and electronic commerce was conducted. Marketing academics were conferred with via ELMAR and professional website designers were consulted.

What emerged from the consultations with website designers was two distinct focuses for website design. One group of website designers discussed in detail the presence of branding features on websites. They highlighted the importance of "work[ing] with the colours of [the brand], the logo etc." From this, they also discussed how the presence of branding features dictated the atmospheric qualities of a website. For example, one website designer stated, "...choice of colours is influenced by such items [as the brand colours and logos etc.]." When asked what he focused on when developing a website, the website designer indicated a concentration on buttons, icons, movement, form and colours.

A second group of website designers highlighted the importance of the functionality and usability of websites by minimizing the frustration web surfers feel while navigating through a site. They pointed to features such as: (1) when an option changes colour when your mouse touches it; (2) pages that load quickly; (3) minimal pop up windows; (4) an easy way to return to the homepage and; (5) links that are easy to find, to name a few. For reference purposes, two selected transcripts of interviews conducted with professional website designers are included in Appendix A. These were selected because they reflect clear differences in design philosophies; namely, some website designers focus on the impact of navigability while others concentrate on the brand's presence on a website.

Lastly, a survey with 248 web surfers (122 men, 126 women mean age 23.5 years) was conducted. They were asked to think of a previously visited website of their

choice. Then, they were asked which features they remembered from the website and what they believed to be the key design parameters of the site. Respondents also provided information on their degree of familiarity, knowledge and frequency of usage of the website or product/brand therein. Overall, participants reported being rather familiar (7.2) with their chosen site and product/brand and knowledgeable about purchasing the product/brand related to the site (6.7), based on a 9-point scale (1 = not at all, 9 = very much). In many instances, respondents were able to name spontaneously both objective features and associated perceptual or affective responses to the website.

The products elicited are organized in Table 5 in such a way that allows the reader to see clearly the emerging parameters and associated benefits and perceptual properties. In Table 5, the product categories mentioned by the respondents are listed in the left hand column. In the center column, the parameters mentioned by the respondents are categorized, listed and aligned with the categories of associated benefits and perceptual properties in the right hand column. Thus, Table 5 offers a bird's eye view of the type of parameters and related perceptual impressions most often mentioned by the survey respondents.

Table 5: Coded and organized perceptions of successful site designs.

Products Elicited	Parameters Mentioned	Benefits and Perceptual Properties
Electronics: • Cell phones; • Compact Discs; • CD player; • CD burner; • DVD; • Vinyl Records; • Rare vinyl; • Laptop; • Computer games; • Television; • Computer photo equipment; **Personal Enjoyment**: • Skin care; • Hair products; • Fresh cut flowers; • Greeting cards; **Food:** • Restaurants; • Sauces; • Vegetables; • Fruits; • Chocolate;	**Usability:** ***Interactivity:*** • Information on hours of operation; • Names of restaurant alternatives; • Book ratings; • Book lists posted by other readers; • Ratings from other listeners; • Opinions and reviews of films; • Ability to listen/try music; • Tips to win the game;	**Related to Usability:** ***Interactivity:*** • Lets me discover new music; • Lets me access different compilations; • Lets me feel in contact with the whole world; • Connect with others sharing interest; • Makes browsing fun;
	Usability: ***Navigability:*** • Speed of delivery; • Downloadable MP3s; • Easy access to product; • Puts product in a larger context of similar products; • Detailed listing of theatres and show times;	**Related to Usability:** ***Navigability:*** • Simplifies my decisions; • Gives adrenaline rush; • Makes going away seem easy and careless; • Convenient; • Straightforward site; • Able to navigate easily; • User friendly; • Choice and selection produces same feeling of browsing in the store; • Convenience of never leaving home; • Ease of transaction; • Easy and not frustrating;

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- Tea;

Sports:

- Skis;
- Airsoft guns;
- Basketball shoes;
- Mountain bikes;
- Running shoes;
- Snowboard

Travel:

- Caribbean vacations;
- Cruise vacation;
- Travel;
- Spanish home stay;
- Bellagio Resort

Entertainment:

- Movie theatres;
- Independent films;
- Concerts;
- Rave;
- Live Music;
- Latin music clubs;
- Rock Music;
- Hip hop;
- Classical;
- Hard music;
- Art Galleries

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Usability:
Content:

- Detailed product information (text, pictures);
- Product description;
- Suggestions for product usage;
- Frequent updates;
- Timetable of flights;
- List of books sold;
- Vast rare and out of print collection;
- Stills from the movie; Previews and trailers;
- Tell me more about movie;
- Related story about artist;
- Links to related sites;
- Pictures of the artist, images from recent tour, video;
- Number of titles;
- Variety of titles;
- Information about places to see and accommodations;

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Related to Usability:
Content:

- Appetizing;
- Makes me look forward to do more shopping;
- I can compare prices and models;
- Lets me know what is on the market;

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Atmospherics:

- The design;
- Colours;
- Conveys the content of a book in colourful manner;
- Pictures;
- Icons;
- Light show;
- Pictures (thumb nailed);
- Great looking pictures taken by people of all abilities;

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Related to Atmospherics:

- Makes me connect with the songs;
- Elegant;
- Makes you feel great;
- Gets me into positive mood;
- Looks professional;
- Visually appealing;
- Provides an escape;
- Hi tech looking website;
- Exudes energy and self assurance;

</td>
</tr>
</table>

<table>
<tr>
<td rowspan="2">Fashion:
• Shoes and purse;
• Fashion clothes;
• Sport clothes;
• Jeans;
• T-shirts;

Books:
• Fiction books;
• Non-fiction;
• Science fiction;
• Books on art;
• Philosophy books;
• Used Books;
• Film books;</td>
<td>• Pictures of snowboarding and the outdoors;
• Images of the concert;
• Sound bites;</td>
<td>• Feels/looks luxurious;</td>
</tr>
<tr>
<td>Brand-Related:
• Display lifestyle associated with product;
• Company reputation;</td>
<td>Related to Brand:
• Models look carefree and happy, same as what I experience when I use the products;
• Creates a sense of nostalgia;</td>
</tr>
</table>

In sum, the literature pointed to the disorganization that currently exists in the academic and trade literatures on website parameters. Different authors use different terms to refer to the same concepts and some even use the same term to refer to two different concepts. The interviews with the professional website designers pointed to clear differences in design philosophies; namely, some designers focus on the importance of the navigability of a website while others are more concerned with a brand's presence on a website. Finally, the responses to the survey indicated a variety of parameters and associated benefits and perceptual properties.

The collaborative process of literature review, interviews and a survey led to the identification of three groups of objective parameters of a website's homepage; namely,

(1) usability parameters; (2) brand-related parameters and; (3) atmospheric parameters. In addition, specific items used to measure each of the parameters were identified.

FINDINGS

Objective Parameters of a Homepage

I. Usability Parameters

The usability parameters refer to the usefulness of the information for facilitating transactions and a positive experience while a web surfer is on a website. They also refer to the ease of use with which web surfers can navigate through this information. Thus, the usability parameters can be divided into three categories: (1) interactivity; (2) navigability and; (3) content. Interactivity refers to "the availability and effectiveness of customer support tools on a website, and the degree to which two-way communication is facilitated" (Srinivasan et al., 2002, p.42). Navigability relates to ease of use and convenience of a website in addition to the ways in which it saves a web surfer time and effort. Lastly, content refers to the substance of the homepage and the availability of the product line. Presented in Table 6 is a more detailed look at these categories and the items used to measure them.

Table 6: List of usability parameters and the items used to measure each of them.

Type	Parameter	Items
Usability Parameters	**Interactivity**	▪ How many occasions did you have to enter user information? (Count) ▪ Company contact information is displayed on the first page (scored 0 = no, 1 = yes)
	Navigability	▪ Something meaningful appears in 8 seconds on the front page (scored 0 = no, 1 = yes) ▪ Menus appear when cursor is placed over a link (scored 0 = no, 1 = yes) ▪ Menus disappear when cursor is removed (scored 0 = no, 1 = yes) ▪ Pictures change/move/appear when you place your cursor over a menu option (scored 0 = no, 1 = yes) ▪ Menu options and/or links change colour when clicked or moused over (scored 0 = no, 1 = yes) ▪ I have to scroll left/right to see information (scored 0 = no, 1 = yes) ▪ Important information is located above the fold (scored 0 = no, 1 = yes)
	Content	▪ Partial or complete product line is shown (scored 0 = no, 1 = yes)

II. Brand Parameters

The brand parameters refer to the website's ability to represent the brand in the virtual environment. They relate to the consistency of the brand's representation on the website including the website's primary function, the presence of the brand colours and brand logo etc. A company's website should be a vehicle to strengthen the brand's image. Breakenridge (2001) insists that the transition to an online environment must maintain designs and imagery consistent with the offline brand. The identification and credibility of the brand are enhanced by the increased presence of branding parameters.

Table 7 delineates the items used to measures the brand-related parameter, namely, the brand presence.

Table 7: List of brand-related parameters and the items used to measure them.

Type	Parameter	Items
Brand Parameters	**Brand Presence**	▪ How many times does the brand logo appear? (Count) ▪ Are the brand colours on the homepage? (scored 0 = no, 1 = yes) ▪ What does the site appear to be built for? (scored generate sales = 1, customer relationship/image building = 2, games/humour = 3)

III. Atmospheric Parameters

The atmospheric parameters are similar to those discussed in the traditional retail literature and include those that set the mood for the website such a colours, sounds, fonts, borders etc. The atmospheric parameters can be divided into two categories, those relating to: (1) sound and; (2) sight. The sight-related atmospheric parameters can be further divided into two sub-categories: (1) visual richness and; (2) visual clarity. Visual richness relates to vividness and intensity of the web page and refers to the presence of borders and pictures etc. Visual clarity, on the other hand, relates to the precision and intelligibility of the web page and refers to parameters such as font size and colour contrasts. Table 8 delineates the atmospheric parameters and the items used to measure each of them.

Table 8: List of atmospheric parameters and the items used to measure them.

Type	Parameter	Items
Atmospheric Parameters	**Sound**	▪ How many different sounds can be heard? (Count) ▪ Can you stop the music from playing? (scored 0 = can't stop it, 1 = can control music, 2 = no music playing) ▪ What is the nature of the sound? (scored 0 = no sound, 1 = voice over, 2 = music, 3 = combination of music and sound, 4 = misc. sound effect) ▪ Is the sound on a loop? (scored 0 = no, 1 = yes, 2 = can't tell, 3 = N/A) ▪ The sound… (scored 0 = plays automatically, 1 = plays on 'mouse over', 2 = plays on click, 3 = combination, 4 = N/A) ▪ What is the tempo of the music being played? (scored 1 = slow, 2 = moderate, 3= fast, 4 = N/A) ▪ What is the genre of the music being played? (scored 1 = golden oldies, 2 = opera, classic, 3 = hip hop/R&B, 4 = heavy metal, 5 = alternative, 6 = rock & roll, 7 = cartoon theme song, 8 = other theme song, 9 = N/A) ▪ Is the music instrumental or includes vocals? (scored 1 = instrumental only, 2 = includes voices, 3 = N/A)
	Sight	**Visual Richness** ▪ There are pictures on the homepage (scored 0 = no, 1 = yes) ▪ Pictures of products are… (scored 0 = abstract, 1 = vivid, 2 = no pictures of products) ▪ The background is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain) ▪ The horizontal border is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain, 4 = no horizontal border) ▪ The vertical border is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain, 4 = no vertical border)
		Visual Clarity ▪ Font size is large enough to read easily (scored 0 = no, 1 = yes) ▪ Font colour contrasts enough for you to read easily (scored 0 = no, 1 = yes)

DISCUSSION

Using the guiding principles of the grounded theory approach proposed by Glaser and Strauss (1967) and Zaltman et al. (1982), an exploratory enquiry was undertaken and a framework was developed to organize, categorize and to propose a measurement for the various parameters of a website's homepage.

What emerged from the literature review, interviews with professional website designers and survey was three distinct categories of website parameters; namely, (1) usability; (2) atmospheric and; (3) brand-related parameters. Moreover, subcategories of the usability and atmospheric parameters also became apparent. It is suggested that the usability parameters can be divided into three, namely: (1) interactivity; (2) navigability and; (3) content. The atmospheric parameters can be divided into those relating to: (1) sound and; (2) sight. The sight-related atmospheric parameters can be divided further into two: (1) visual richness and; (2) visual clarity.

This is a significant contribution to the existing academic literature on website design. It is one of the first attempts at offering an objective and scientific approach to analyzing the parameters of a website. Since this study is one of the first of its kind, as the research progresses, the schema will be fine-tuned and will ultimately improve. In the interim, marketing managers and website designers are encouraged to begin working with this categorization and method of measurement. It is only through the practical implementation of a theoretically sound framework that its merits and limitations will become more evident.

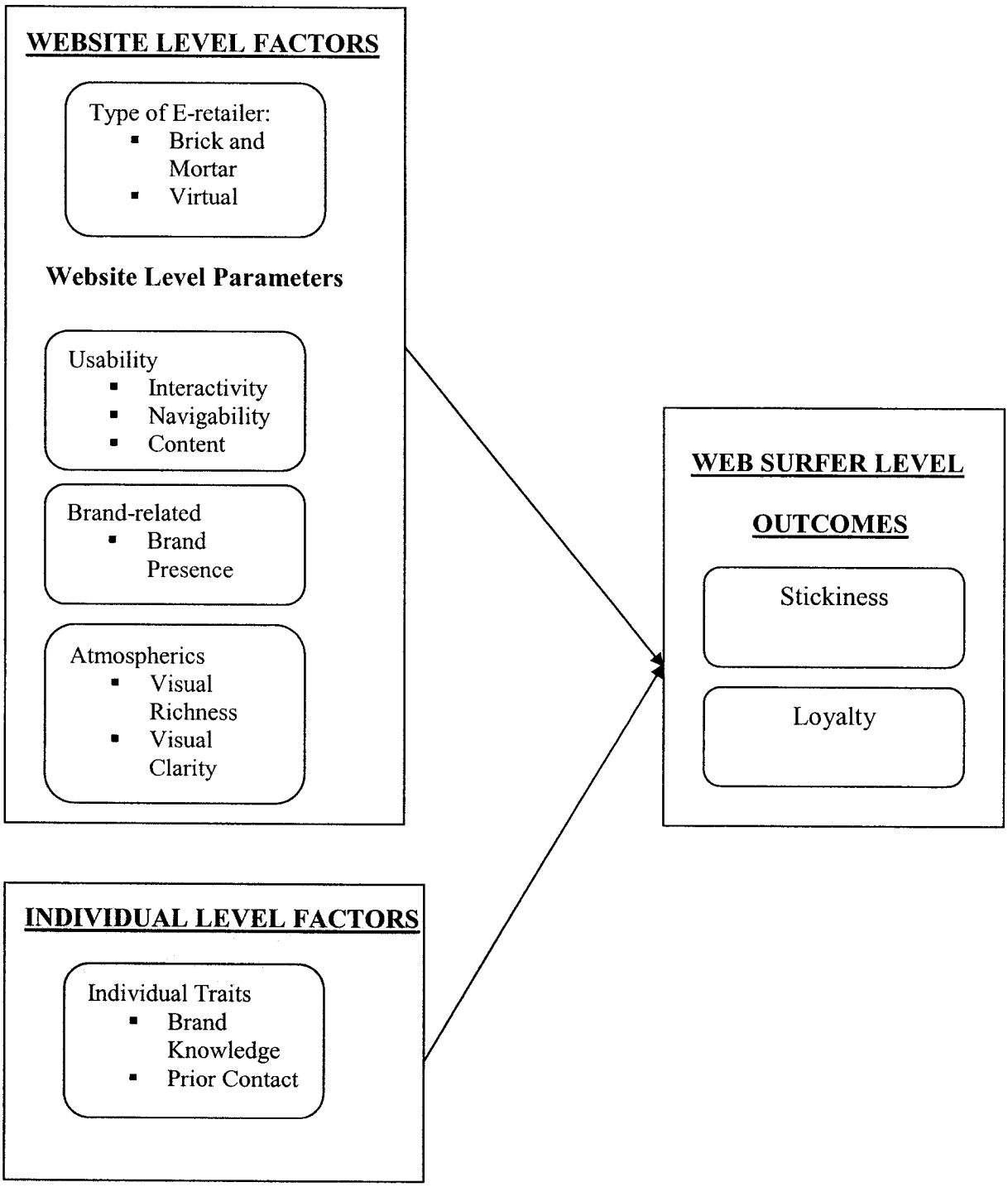
Study 1 provides the groundwork for Study 2. Study 2 uses the framework developed in Study 1 and begins a preliminary investigation of the relationship between

the parameters of a website's homepage and the behavioural responses of web surfers. In the next section, the methodology and findings from Study 2 will be described and discussed.

4. STUDY 2: PRELIMINARY EMPIRICAL INVESTIGATION OF A HOMEPAGE'S PARAMETERS AND THE BEHAVIOURAL RESPONSES OF WEB SURFERS

To date no research has been conducted to examine the relationship between the parameters of a website's homepage and the behavioural outcomes of web surfers (namely, consumer stickiness and loyalty). In addition, no research has been conducted to explore the way individual level factors (namely, brand knowledge and prior contact with the website) influence a consumer's behavioural responses to a homepage. Thus, the primary purpose of Study 2 is to begin to understand and to analyze these relationships. The relationships are depicted in Figure 2.

Figure 2: Relationships to be examined in Study 2.



The literature review pointed to the distinctions between brick and mortar e-retailers and virtual e-retailers. Recall that brick and mortar e-retailers are those that are expanding their marketing reach by adding an online component to their sales and marketing strategies. Conversely, virtual e-retailers are those that exist solely in a virtual environment and do not have a physically accessible retail outlet to complement their web presence (Breakenridge, 2001). Study 2 aims to detect significant differences in website design parameters and their impact on web surfer level outcomes of stickiness and loyalty that may exist between types of e-retailers.

Definitions of the various constructs in Figure 2 will now be outlined and their measurement schemes will be described in detail later on. Three categories of website level parameters clearly emerged in Study 1; namely (1) usability; (2) atmospheric and; (3) brand-related parameters. Usability parameters refer to the usefulness of the information and organization for facilitating transactions and a positive experience while a web surfer is on a website. They also refer to the ease of use with which web surfers can navigate through this information. Based on the findings of Study 1, the usability parameters can be divided into three categories: (1) interactivity; (2) navigability and; (3) content. Interactivity is defined as "the availability and effectiveness of customer support tools on a website, and the degree to which two-way communication is facilitated" (Srinivasan et al., 2002, p.42). Navigability relates to the ease of use (Srinivasan et al., 2002) and convenience of a website (Northwestern University Researchers, 2002) in addition to the ways in which it saves a web surfer time and effort (Supphellen and Nysveen, 2001). Lastly, content refers to the substance of the homepage (Wolfinbarger

and Gilly, 2001; Srinivasan et al., 2002) and the availability of the product line (Carroll and Broadhead, 1999).

The brand-related parameter refers to the presence of branding features on a homepage and thus the homepage's ability to convey the essence of the brand online (Breakenridge, 2001). Breakenridge (2001) insists that the transition to an online environment must maintain designs and imagery consistent with the offline brand. The identification and credibility of the brand are also enhanced by the increased presence of branding parameters (Carroll and Broadhead, 1999).

The atmospheric parameters are similar to those discussed in the traditional retail literature and include those that contribute to the look and the feel of the site such as the colours, fonts, borders etc. (Galan and Gonzalez, 2001). The literature suggests that the atmospheric parameters can be divided into two, those relating to: (1) sound and; (2) sight. Study 2 only looks at the atmospheric parameter of sight and the two subdivisions therein, namely, (1) visual richness and; (2) visual clarity. Visual richness relates to the vividness and intensity of the web page and refers to the presence of borders, and pictures etc. (Galan and Gonzalez, 2001). Visual clarity, on the other hand, relates to the precision and intelligibility of the web page and refers to parameters such as font size and colour contrasts (Carroll and Broadhead, 1999; Galan and Gonzalez, 2001).

One of the primary objectives of Study 2 was to isolate the effects of the website level factors from the effects that the individual level factors may have on stickiness and loyalty. Thus, two individual level factors considered relevant and potentially influential to both stickiness and loyalty were identified; namely, (1) brand knowledge and; (2) prior

contact with the website. The way they are measured is discussed in the *Measures* section.

A brief review of the web surfer level outcomes of stickiness and loyalty is warranted. Stickiness is getting web surfers to stay on your website once they are already there (Gillespie et al., 1999; Murphy, 1999). Loyalty, on the other hand, is getting web surfers to return to your website in the future, to recommend your website to a friend or to save your website to their list of favourites etc. (Eroglu et al, 2001; Srinivasan et al., 2002).

METHOD

Websites

Twelve e-retailer sites were selected for this study and reflect a combination of brick and mortar e-retailers (7 websites) and virtual e-retailers (5 websites). Brick and mortar e-retailers are traditional retailers that have decided to expand their market reach by adding an online component to their marketing channel and sales strategies. Virtual e-retailers, on the other hand, are those that exist solely in a virtual environment and do not have a physically accessible retail outlet to complement their online existence. The selected websites also have product and service offerings that were deemed relevant to our sample population comprised of students. The websites selected were:

Table 9: The twelve websites selected for the study.

Brick and Mortar	Virtual
www.abercrombie.com	www.amazon.com
www.godiva.com	www.cookscorner.com
www.hallmark.com	www.drugstore.com
www.landsend.com	www.eluxury.com
www.sephora.com	www.microsoft.com
www.sportcheck.ca	
www.victoriassecret.com	

Website Level Parameters

Study 1 described the objective parameters of a homepage that were identified using the spirit of a grounded theory approach. Study 2 commences with the quantification of the identified parameters of the twelve selected websites, with the goal of beginning to examine the relationships portrayed in Figure 2.

The usability parameters (namely, interactivity, navigability and content) were measured as follows: *Interactivity* was measured by two items. The first item used to measure interactivity was a count variable with a possible range from zero to infinity, however the actual range was between zero and two. None of the twelve homepages offered the web surfer more than two opportunities to enter their user information. The second interactivity item determined the presence of company contact information. Thus, the higher the interactivity score, the more interactive the homepage. Seven items, coded as zero or one with a minimum value for the entire index at zero and the maximum at seven, measured *Navigability*. The actual range for navigability was between one and five. The higher the score on navigability, the more navigable the homepage. *Content* was measured by one item and again coded as zero or one. If the website scored a one, then the content was high and vice versa. Table 10 shows the usability parameters of

homepages, the items used to measure each of them and the actual ranges obtained by the twelve websites used in Study 2.

Table 10: List of usability parameters and the items used to measure each of them.

Type	Parameter	Items	Actual Range	
			Min	Max
Usability Parameters	**Interactivity**	▪ How many occasions did you have to enter user information? (Count, range was between 0 and 1) ▪ Company contact information is displayed on the first page (scored 0 = no, 1 = yes)	0	2
	Navigability	▪ Something meaningful appears in 8 seconds on the front page (scored 0 = no, 1 = yes) ▪ Menus appear when cursor is placed over a link (scored 0 = no, 1 = yes) ▪ Menus disappear when cursor is removed (scored 0 = no, 1 = yes) ▪ Pictures change/move/appear when you place your cursor over a menu option (scored 0 = no, 1 = yes) ▪ Menu options and/or links change color when clicked or moused over (scored 0 = no, 1 = yes) ▪ I have to scroll left/right to see information (scored 0 = no, 1 = yes) ▪ Important information is located above the fold (scored 0 = no, 1 = yes)	1	5
	Content	▪ Partial or complete product line is shown (scored 0 = no, 1 = yes)	0	1

The brand parameters measure the overall presence of the brand on the homepage. The brand presence score indicates the consistency of the brand's representation in a virtual environment, including its primary function, brand colours and logo. *Brand presence* was measured by three items with a possible range from one to six, but in reality, the actual range was between one and three. The first item used to measure brand presence was a count variable indicating how many times the brand logo appears on the homepage. The possible range is between zero and infinity, but the homepages selected for this study had between zero and two brand logos. The third item used to measure brand presence examines the dominant function of the website. The twelve websites selected for this study were e-retailers and thus, their primary goal should be to generate sales or for customer relationship/image building (scored a one). If it appeared that the primary function of the website was for humour/games then the website was given a zero. Thus, the higher the score for brand presence, the greater the consistency of the brand's representation in a virtual environment. Table 11 shows the brand parameters, namely brand presence, the items used to measure it and the actual range of the score.

Table 11: List of brand-related parameters and the items used to measure them.

Type	Parameter	Items	Actual Range	
			Min	Max
Brand Parameters	**Brand Presence**	▪ How many times does the brand logo appear? (Count, actual range was between 0 and 2) ▪ Are the brand colors on the homepage? (scored 0 = no, 1 = yes) ▪ What does the site appear to be built for? (scored generate sales or customer relationship/image building = 1,games/humour = 0)	1	3

The atmospheric parameters are similar to those discussed in the traditional retail literature and include those that set the mood for the website such a colours, sounds, fonts, borders etc. The atmospheric parameters can be divided into two categories, those relating to: (1) sound and; (2) sight. The sound-related parameters of the homepages were not used in the present study because, as will be explained below, the respondents were in communal computer labs and were therefore forced to turn the speakers off on their computers. The sight-related atmospheric parameters can be divided into two sub-categories: (1) visual richness and; (2) visual clarity. Visual richness was measured by four items with a possible range from zero to fourteen but scored an actual range between one and eleven. Originally, the higher the visual richness score the less visually rich the homepage. However, to minimize errors in analysis and interpretation, the visual richness score was flipped so that now the higher the visual richness score, the more visually rich the homepage. Visual clarity was measured by two indicators and had a possible and actual range from zero to two. The higher the visual clarity score, the greater the visual clarity of the homepage. Table 12 shows the sight-related atmospheric

parameters of homepages, the items used to measure each and the actual range of each of the parameters.

Table 12: List of atmospheric parameters of a homepage and the items used to measure them.

Type	Parameter	Items	Actual Range	
			Min	Max
Atmospheric Parameters	**Sight**	**Visual Richness** ▪ There are pictures on the homepage (scored 0 = no, 1 = yes) ▪ Pictures of products are… (scored 0 = abstract, 1 = vivid, 2 = no pictures of products) ▪ The background is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain) ▪ The horizontal border is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain, 4 = no horizontal border) ▪ The vertical border is… (scored 1 = entirely textured, 2 = part of it is textured, 3 = plain, 4 = no vertical border)	1	11
		Visual Clarity ▪ Font size is large enough to read easily (scored 0 = no, 1 = yes) ▪ Font color contrasts enough for you to read easily (scored 0 = no, 1 = yes)	0	2

Two trained coders coded the objective parameters of each of the twelve websites' homepages (see Front Page Coding Scheme, Appendix B). The coders spent an average of 38.42 minutes coding the objective parameters of each homepage. The coders agreed 90% of the time and the researcher resolved the differences of opinion. The

coding of the homepages took place within the same time period as the nineteen students were browsing the websites (to be described below). This was done intentionally to ensure that the coders and the student surfers were experiencing the same site because websites can change frequently.

Participants and Procedure

Nineteen undergraduate students at a large northeastern Canadian university participated in the study; 15 females and 4 males with an average age of 21.2 years. Each participant attended an information session about the study where they were assigned a unique identification number and were given a take-home booklet replete with questionnaires about their web browsing behaviour and various personality scales. Over twelve consecutive days, respondents surfed a different site each day spending as long as they wanted on each site. They were encouraged to spend sufficient time on each site such that they would be able to capture the web browsing experience offered by each website. The instructions were as follows:

> Welcome to the study! As explained earlier during the introduction session, we would like you to browse one website every day, for the next 12 days. Each day, the computer will randomly present you with the name of the website you must visit, and this will be your "website of the day."
>
> Your task will be to browse your "website of the day" as thoroughly as possible, so that you get a fair idea of the contents of the website, and how much you like the website. Remember, you will be asked some questions about the website later, so be sure to <u>fully explore</u> the "website of the day." You may buy products offered on the "website of the day" if you wish, but if you do so, <u>you</u> (and not the study organizers) are responsible for paying for it.

> When you start browsing the "website of the day," you will see that a "Finished Browsing" button appears on the top right-hand corner of your computer screen. Click on this button only when you are finished browsing the website, and are ready to answer questions about the website.

As the instructions indicate, after the respondents finished browsing their "website of the day" they were asked questions about their web browsing experiences. The complete list of post-browsing measures can be found in Appendix C. Those questions and responses used in the present study are discussed in detail in the *Measures* section.

The respondents had to participate in the study from a computer lab located in the Faculty of Management building at their university. All the computers in this particular computer lab were calibrated so that the speed of download on each of the computers was the same and so that the colours on each of the websites looked the same on each of the computer screens. In addition, a Windows-compatible software was developed and loaded onto the computers in the computer lab. The software that was developed allowed participants to log in with their unique identification number and be assigned a different website each day (order effect was minimized because the software assigned the sites in a counterbalanced order). The software recorded their responses to the post-browsing measures as well as other measures such as browsing time, pages viewed and levels drilled. Upon completion of the study, each participant received $50 remuneration.

Measures

Loyalty. Loyalty has been extensively studied and has been traditionally measured as a function of two components: attitudinal loyalty and behavioural loyalty (Ha, 1998).

The present study focuses on aspects of behavioural loyalty. After the completion of each visit on a website, participants were asked a variety of questions including some that enabled the assessment of their intentions to be loyal and to quantify and to measure their loyalty behaviour towards the website.

Behavioural Intentions. Three items were used to measure respondents' behavioural intentions to be loyal and each was assessed on a seven-point scale. The three items were then added together to create one indicator of loyalty with a minimum value of three and a maximum value of 21. The higher the number, the greater the intention to be loyal on the part of the web surfer. This measure will be referred to hereafter as "intentions to be loyal." The three items were:

- How likely are you to buy the brand advertised in *website X* in the near future? (1 = not at all likely, 7 = very likely)
- How likely is that you would visit *website X* again in your free time? (1 = not at all likely, 7 = very likely)
- How likely are you to recommend *website X* to a friend? (1 = not at all likely, 7 = very likely)

Cronbach alpha for the "Intentions to be Loyal" measure is 0.84.

Actual Behaviour. Four items were used to measure respondents' loyalty behaviours:

- Would you like to save the link to the website *X* in a Favourites Folder? We will email you this Favourites Folder at the end of the research study. Click on the Add to Favourites Folder button below to save *website X* in your favourites folder.

If you don't want to save *website X* in your favourites folder, click on Next Button.

- Would you like to send the link to the website *X* to a friend? If so, click on the 'Send to Friend' button below, and you will be prompted to enter your friend's email address and a short message to your friend. If you don't want to send the link to a friend, click on the Next Button.
- Would you like to receive an email whenever there is new information on the website *X*? If you want to receive email updates, please click on the Email Update button below. If you don't want to receive email updates, click on the Next Button.
- Would you like to receive a monthly newsletter from the website *X*? If you want to receive a monthly newsletter, please click on the Monthly Newsletter button below. If you don't want to receive a monthly newsletter, click on the Next Button.

The four responses (per respondent) were added together to create a second loyalty indicator, hereafter "loyalty behaviour." The Cronbach alpha for the "loyalty behaviour" indicator is 0.77. Loyalty behaviour has a minimum value of zero and a maximum value of four. The higher the number, the more loyal the behaviours of the respondent.

Stickiness. Stickiness is defined as a website's ability to capture the attention of a web surfer, to encourage them to stay on and to explore their website further. Stickiness was measured as a function of three items: (1) the time spent on a website; (2) the levels of a website visited and; (3) the number of pages visited. The Windows-compatible

software kept track of all three items. The time spent on a website was measured by subtracting the starting time from the ending time of the participants' visit to each website. The levels of the website measured the depth attained by the web surfers on each of the websites. The number of pages visited is the count of the number of pages viewed by the participants including pop-up and pop-under windows for the website in question.

Individual Level Variables. Individual level factors have been proven to influence reactions to websites. As part of the post-browsing questionnaires completed by participants (see Appendix C), participants were asked about their familiarity with the brand (seven point scale, 1 = not familiar at all; 7 = very familiar) and their knowledge about the brand (seven point scale, 1 = not knowledgeable at all; 7 = very knowledgeable). These two responses were averaged together to obtain an overall measure of a participant's *brand knowledge.* A median split was used to classify participants as either low (< 4.5) or high (≥ 4.5) brand knowledge. Participants were also asked to indicate the last time they had visited each website in question using a categorical scale with the options: never, in the last week, in the last month, in the last six months or more than six months ago. This indicator will be referred to as *prior contact.* All those who indicated they had never visited the site were considered to have no *prior contact* and participants who had at some point in time visited the website were considered to have *prior contact* with the website.

FINDINGS

The first set of objectives was to:

1) Identify if any significant differences exist in the coded parameters of brick and mortar versus virtual e-retailers;
2) Identify if any significant differences exist in the behavioural responses (stickiness and loyalty) of consumers depending upon which e-retailing strategy is employed, brick and mortar or virtual;
3) Identify if any significant differences exist in the behavioural responses (stickiness and loyalty) of consumers depending on whether or not they have had prior contact with the website;
4) Identify if any significant differences exist in the behavioural responses (stickiness and loyalty) of consumers depending on if they have high or low brand knowledge.

Coded Website Parameters

The coders coded each of the twelve websites' homepages and then the composite parameters were calculated. This yielded the results shown in Table 13.

Table 13: The twelve websites and the coded parameters.

Website	Interactivity	Navigability	Content	Total Usability	Brand Presence	Visual Clarity	Visual Richness
	Range 0 – Infinity	Range 0 - 7	Range 0 - 1	Range 0 - Infinity	Range 0 - Infinity	Range 0 -14	Range 0 - 2
Abercrombie	**0**	**2**	**1**	**3**	**3**	**10**	**1**
Landsend	**0**	**2**	**1**	**3**	**2**	**10**	**0**
Godiva	**1**	**5**	**0**	**6**	**3**	**9**	**0**
Sephora	**1**	**2**	**1**	**4**	**2**	**11**	**2**
Hallmark	**0**	**2**	**1**	**3**	**3**	**11**	**2**
Sportchek	**0**	**3**	**1**	**4**	**2**	**10**	**2**
Victoria Secret	**0**	**3**	**1**	**4**	**2**	**8**	**1**
Amazon	0	1	1	2	2	11	2
Microsoft	0	3	1	4	3	11	2
Cooks Corner	1	3	1	5	2	8	2
ELuxury	0	3	1	4	1	1	2
Drugstore	0	2	1	4	2	10	2

N.B. The ranges provided in this table are the possible ranges as opposed to the actual ones. See Tables 10, 11 and 12 for the actual ranges. Bolded websites are the brick and mortar e-retailers. Non-bolded websites are the virtual e-retailers.

Brick and Mortar vs. Virtual E-Retailers

The first objective was to determine if there were any significant differences noted in the objective parameters of the homepages based on the type of e-retailing strategy employed: brick and mortar or virtual e-retailer. As Table 14 indicates, the type of e-retailing strategy led to significant differences for navigability, content, brand parameters, visual clarity and visual richness.

Table 14: Results of t-tests (equal variances assumed) to detect any significant differences between objective parameters of homepages dependent upon the type of e-retailing strategy.

	Brick and Mortar (n = 133)	Virtual (n = 95)	t-value	Sig. (2-tailed)
Total Usability	3.90 (.99)	3.60 (1.03)	1.90	.059
Interactivity	.29 (.45)	.20 (.40)	1.47	.142
Navigability	2.70 (1.03)	2.40 (.80)	2.48	.014
Content	.86 (.35)	1.00 (.00)	-3.96	.000
Brand Presence	2.40 (.49)	2.00 (.64)	5.71	.000
Visual Clarity	1.14 (.84)	2.00 (.00)	-9.99	.000
Visual Richness	10.86 (.99)	9.20 (3.78)	4.83	.000

Brick and mortar e-retailers possess greater navigability (2.7 vs. 2.4) and brand presence (2.4 vs. 2.0) of their homepages because they have experience navigating consumers through their product offerings and they have experience with branding. Thus, they might leverage this expertise in the virtual environment as well. In addition, e-commerce experts contend that online branding is essential for virtual e-retailers because it is how consumers develop a rapport with the e-retailer (Carroll and Broadhead, 1999; Breakenridge, 2001). It is therefore interesting to note that brick and mortar e-retailers make greater use of branding parameters than virtual e-retailers. Content was significantly higher for virtual e-retailers than it was for brick and mortar e-retailers (1.00 vs. .86). The reason is perhaps that virtual e-retailers must peddle all their wares on their websites whereas brick and mortar e-retailers can simply complement their offline existence with an online counterpart, thus reducing the product line they display online.

The second objective was to determine if any significant differences emerged in behavioural responses dependent upon the type of e-retailing strategy employed. Table 15 presents the results of the various t-tests that were conducted; taking into account that equal variance could not be assumed for browsing time, levels drilled and for neither measure of loyalty.

Table 15: T-test results to detect any significant differences in behavioural responses (stickiness and loyalty) depending on e-retailing strategy employed.

	Brick and Mortar (n = 133)	**Virtual (n = 95)**	**t-value**	**Sig. (2-tailed)**
Loyalty behaviour	.30 (.78)	.33 (.89)	-.23*	.822
Intentions to be loyal	11.58 (5.51)	11.88 (5.41)	-.42*	.818
Browsing time	1033.30 (479.27)	1005.72 (421.84)	.46*	.646
Pages Viewed	51.56 (59.46)	69.58 (73.93)	-2.04	.043
Levels Drilled	36.44 (37.93)	37.45 (29.45)	-.23*	.821

* indicates that the Levene's Test for Equality of Variances was not significant and therefore, equal variances are not assumed for those t-tests marked by an asterisk.

As Table 15 indicates, there were significant differences in pages viewed depending on whether the website was for a brick and mortar (51.56 pages) or a virtual e-retailer (69.58 pages). Pages viewed was significantly higher if the website was a virtual e-retailer as opposed to a brick and mortar e-retailer. This is possibly because perusing consumers feel obliged to view more pages online to properly engage the virtual e-retailer. Because a virtual e-retailer's website is the only way of becoming familiar with a virtual e-retailer, their brand and product offerings consumers must really delve into the website, and consequently view more pages.

Behavioural Outcomes

The third objective was to examine if there were any significant differences in terms of behavioural response (again, stickiness measured by three items and loyalty measured in two different ways) between those respondents who had had previous contact with the website and those that did not. There were significant differences noted for loyalty behaviour, intention to be loyal and browsing time depending on whether or not the web surfer had prior contact with the website or not. Table 16 shows the results of the t-tests.

Table 16: T-test results for the behavioural outcomes and presence/absence of prior contact with the website.

	No prior contact (n = 178)	Prior contact (n = 50)	t-value	Sig. (2-tailed)
Loyalty behaviour	.24 (.66)	.58 (1.23)	-2.64	.009
Intentions to be loyal	10.80 (5.32)	14.94 (4.69)	-4.99	.000
Browsing time	976.24 (426.00)	1184.02 (520.65)	-2.90	.004
Pages Viewed	60.80 (66.00)	52.90 (67.80)	.73*	.466
Levels Drilled	38.03 (35.57)	32.72 (30.60)	1.04*	.301

* indicates that the Levene's Test for Equality of Variances was not significant and therefore, equal variances are not assumed for those t-tests marked by an asterisk.

As Table 16 indicates, loyalty behaviour, intention to be loyal and browsing time were all significantly higher if the web surfer had prior contact with the website. This finding highlights the importance of increasing the likelihood of an initial contact with websites to encourage consumer loyalty and stickiness.

The fourth objective was to determine if there were any significant differences in loyalty (measured by intention to be loyal and loyalty behaviour indicators) and

stickiness (measures by browsing time, pages viewed and levels drilled) depending on whether the respondent had high or low brand knowledge. Table 17 indicates the results of the t-tests.

Table 17: T-test results to detect any significant differences in behavioural responses depending on the level of brand knowledge (high or low) possessed by the respondent.

	Low Brand Knowledge (n = 128)	High Brand Knowledge (n = 100)	t-value	Sig. (2-tailed)
Loyalty behaviours	.36 (.86)	.25 (.78)	1.00*	.317
Intentions to be loyal	11.19 (5.14)	12.37 (5.80)	-1.63	.105
Browsing time	996.94 (450.26)	1053.64 (462.34)	-.93*	.354
Pages Viewed	57.62 (62.12)	60.92 (71.62)	-.37*	.715
Levels Drilled	36.24 (32.68)	37.66 (37.03)	-.30*	.763

* indicates that the Levene's Test for Equality of Variances was not significant and therefore, equal variances are not assumed for those t-tests marked by an asterisk.

All the t-tests resulted in non-significant values (significance values ranging from 0.105 to 0.763). Thus, there were no significant differences in terms of behavioural responses (both loyalty and stickiness) depending on whether the respondent had high or low brand knowledge.

Linking Coded Parameters to Outcome Measures

The second set of objectives for Study 2 was to examine more closely the relationships depicted in Figure 2.

All nineteen participants viewed all twelve of the websites, although each person viewed them in a different order. To ensure that the variance across subjects for all five dependent variables was greater than the variance across websites, the variances of each of the dependent variables (pages viewed, browsing time, levels drilled, intentions to be loyal and loyalty behaviour) were measured across websites and across subjects. Table 18 shows the variances.

Table 18: Variances across subjects and across websites.

Dependent Variable	Variance Across Subjects (n = 19)	Variance Across Websites (n = 12)
Pages Viewed	980.186	1543.820
Levels Drilled	339.802	299.330
Browsing Time	90883.684	17138.858
Intentions to be loyal	6.702	6.520
Loyalty Behaviours	0.334	0.02941

All of the variances across subjects were greater than the variances across websites except for pages viewed. This might be due to a technical difference between the way the websites were constructed and may have affected the way the software counted the number of pages viewed by the participants. For the four dependent variables where the variance across subjects was greater than the variance across websites, this means that although it was the same 19 participants viewing the same 12 websites, the findings were not affected.

Before the results are presented, a more detailed description of the next phase of analysis strategy is warranted. The overall objective of this study was to isolate the effects of website-level parameters on the consumer-level responses of stickiness and loyalty and to account for eventual differences attributable to the e-retailing strategy. Importantly, web surfer-level outcomes are more than likely influenced by factors such as prior contact with a website and brand knowledge. Therefore, each dependent variable was treated to a series of analyses intended to first remove consumer-level variance attributable to such factors. This first step provided an acceptable level of assurance that the remaining variance could be attributed to website-level parameters. More specifically, for each dependent variable, the first step was to perform a regression using the individual level factors, namely, brand knowledge and prior contact, as predictors:

$$Y_1 = ß_0 + ß_1 \text{ (brand knowledge)} + ß_2 \text{ (prior contact)} + \varepsilon_1 \qquad \text{(Equation 1)}$$

Results of Equation 1 were then used to compute the predicted values:

$$\hat{Y}_1 = ß_0 + ß_1 \text{ (brand knowledge)} + ß_2 \text{ (prior contact)} + \hat{E}_1 \qquad \text{(Equation 2)}$$

Those predicted values from Equation 2 were then used to obtain the residual ($\hat{E}_1$), by taking the difference between the actual and predicted values:

$$\hat{E}_1 = Y_1 - \hat{Y}_1 \qquad \text{(Equation 3)}$$

The residuals obtained from Equation 3 may be conceptually thought of as free of individual-level variance. Thus, the final step is to regress these residuals on the website-level parameters (including the indicator variable for e-retailing strategy):

$\hat{E}_1 = ß_0 + ß_1$ (e-retailing strategy) + $ß_2$ (interactivity) + $ß_3$ (navigability) + $ß_4$ (content) + $ß_5$ (total usability) + $ß_6$ (brand presence) + $ß_7$ (visual clarity) + $ß_8$ (visual richness) + E_2

(Equation 4)

The results of these four steps are now presented for each of the five dependent variables.

Regression 1: Pages Viewed

Regressing pages viewed on the individual level factors (brand knowledge and prior contact) yielded the results displayed in Tables 19 and 20.

Table 19: Summary of the results of regressing pages viewed on brand knowledge and prior contact.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.058	.003	-.006	66.51

Table 19 indicates that the individual level factors (prior contact and brand knowledge) are not significant predictors of pages viewed. Table 20 confirms this with the non-significant t-test results and shows the unstandardized coefficients for the regression.

Table 20: Results of the regression of pages viewed on brand knowledge and prior contact.

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	59.131	6.185	9.560	.000
Prior Contact	-8.426	10.708	-.787	.432
Brand Knowledge	4.064	8.929	.455	.649

The unstandardized coefficients displayed in Table 20 are used to compute the predicted values for pages viewed (as per Equation 2 above).

$$\text{Pages Viewed}_{\text{predicted}} = 59.131 - 8.426(\text{brand knowledge}) + 4.064\,(\text{prior contact})$$

(Equation 5)

The predicted values obtained from Equation 5 were then used to obtain the residual ($\hat{E}_1$), by taking the difference between the actual and predicted values of pages viewed (Equation 3). The residuals obtained from Equation 3 can be thought of as free from individual-level variance. Therefore, the final step was to regress these residuals on the website level parameters, including the indicator variable for e-retailing strategy (brick and mortar or virtual e-retailer). The regression equation is:

$$\hat{E}_1 = ß_0 + ß_1\,(\text{e-retailing strategy}) + ß_2\,(\text{interactivity}) + ß_3\,(\text{navigability}) + ß_4\,(\text{content}) + ß_5\,(\text{total usability}) + ß_6\,(\text{brand presence}) + ß_7\,(\text{visual clarity}) + ß_8\,(\text{visual richness}) + E_2$$

(Equation 4)

The results of the regression of the residuals (free from individual-level variance) on the website level parameters are displayed in Tables 21 and 22.

Table 21: Summary of the results obtained by regressing the residuals on the website-level parameters including e-retailing strategy (relating to pages viewed).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533	.284	.261	56.9262

Table 22 shows the results obtained from the regression of the residuals on the website level parameters.

Table 22: Results obtained by regressing the residuals on the website level parameters, as they relate to pages viewed.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	131.877	48.067		2.744	.007
Interactivity	-9.303	13.555	-.061	-.686	.493
Navigability	-15.371	9.187	-.222	-1.673	.096
Content	20.185	27.886	.084	.724	.470
Brand Presence	37.887	13.203	.341	2.870	**.005**
Visual Clarity	-14.219	8.169	-.164	-1.741	.083
Visual Richness	-17.863	2.717	-.722	-6.575	**.000**
E-retailing Strategy	16.022	13.511	.120	1.186	.237

Note that total usability is not included in Table 22 because the statistical software removed it from the regression equation due to its collinearity with the other predictors. Recall that total usability is the sum of interactivity, navigability and content.

Table 22 shows that brand presence (p = .005) and visual richness (p = .000) are significant predictors of pages viewed. The signs on the coefficients indicate that as brand presence increases, so do the number of pages viewed by a web surfer. Breakenridge (2001) asserts that the presence of branding features on a website enhances the familiarity and credibility of a website. Perhaps it is the credibility and familiarity

infused by the brand presence that translates into an increase in the number of pages viewed by web surfers. Conversely, the signs on the coefficients indicate that pages viewed decreases as the visual richness of a homepage increases. If a homepage is visually rich, then there is more to process and to absorb and thus, web surfers will view fewer pages. Either they will spend more time absorbing the visually rich homepage (and consequently not have the opportunity to view many other pages) or they will not want to process as much information and decide to find another website to peruse or to satisfy their need.

Regression 2: Levels Drilled

Regressing levels drilled on the individual level factors (brand knowledge and prior contact) yielded the results displayed in Tables 23 and 24.

Table 23: Summary of the results of regressing levels drilled on brand knowledge and prior contact.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.069	.005	-.004	34.66

Table 23 indicates that the individual level factors (prior contact and brand knowledge) are not significant predictors of levels drilled. Table 24 confirms this with the non-significant t-test results and shows the unstandardized coefficients for the regression.

Table 24: Results of the regression of levels drilled on brand knowledge and prior contact.

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	37.241	3.223	11.555	.000
Prior Contact	1.920	4.653	.413	.680
Brand Knowledge	-5.557	5.580	-.996	.320

The unstandardized coefficients displayed in Table 24 are used to compute the predicted values for levels drilled (as per Equation 2 above).

$$\text{Levels Drilled}_{\text{predicted}} = 37.241 + 1.920(\text{brand knowledge}) - 5.557\,(\text{prior contact})$$

(Equation 6)

The predicted values obtained from Equation 6 were then used to obtain the residual ($\hat{E}_1$), by taking the difference between the actual and predicted values of levels drilled (Equation 3). The residuals obtained from Equation 3 can be thought of as free from individual-level variance. Therefore, the final step was to regress these residuals on the website level parameters, including the indicator variable for e-retailing strategy (brick and mortar or virtual e-retailer). The regression equation is:

$$\hat{E}_1 = ß_0 + ß_1\,(\text{e-retailing strategy}) + ß_2\,(\text{interactivity}) + ß_3\,(\text{navigability}) + ß_4\,(\text{content}) + ß_5\,(\text{total usability}) + ß_6\,(\text{brand presence}) + ß_7\,(\text{visual clarity}) + ß_8\,(\text{visual richness}) + E_2$$

(Equation 4)

The results of the regression of the residuals (free from individual-level variance) on the website level parameters, as they relate to levels drilled are displayed in Tables 25 and 26.

Table 25: Summary of the results obtained by regressing the residuals on the website-level parameters including e-retailing strategy (related to levels drilled).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.403	.163	.136	32.0674

Table 26 shows the results of the regression of the residuals on the website level parameters, as they relate to levels drilled.

Table 26: Results of regressing the residuals as they relate to levels drilled, on the website level parameters.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	11.694	27.077		.432	.666
Interactivity	-1.599	7.636	-.020	-.209	.834
Navigability	-2.657	5.175	-.074	-.513	.608
Content	28.699	15.709	.230	1.827	.069
Brand Presence	14.715	7.438	.254	1.978	**.049**
Visual Clarity	-17.657	4.602	-.392	-3.837	**.000**
Visual Richness	-4.770	1.530	-.370	-3.117	**.002**
E-retailing Strategy	19.084	7.611	.273	2.508	**.013**

Note that total usability is not included in Table 26 because the statistical software removed it from the regression equation due to its collinearity with the other predictors. Recall that total usability is the sum of interactivity, navigability and content.

Table 26 shows that brand presence ($p = .049$), visual clarity ($p = .000$), visual richness ($p = .002$) and e-retailing strategy ($p = .013$) are significant predictors of levels drilled. The signs on the coefficients indicate that as brand presence increases, so do the number of levels drilled by a web surfer. The rationale is similar to that which was put forth when the results indicated that as brand presence increased, so did the number of pages viewed. Breakenridge (2001) contends that the presence of branding features on a website increases the credibility of and familiarity with a website. This, in turn, makes web surfers feel more at ease and increases the trust they have in a site. It is likely that this trust translates into an increase in the number of levels drilled by web surfers. The more they trust a website, the deeper they will peruse.

The results also show that as visual richness and visual clarity increase, the number of levels drilled decreases. The more visually rich a homepage, the more effort will be required for processing; thus, the less likely a web surfer will be to drill more levels because they will have either less time or less patience. The less visually clear a homepage, the more likely a web surfer will drill further into a website. A possible explanation could be that a web surfer who encounters a visually unclear homepage might be curious to see if the remainder of the website is equally as unclear. Interestingly, this finding counters intuition. One would expect that the higher the visual clarity of the homepage, the more levels would be drilled because web surfers are better able to read the homepage and to see what the website has to offer. This is evidently not the case. Lastly, because the sign on the coefficient for e-retailing strategy is positive, this implies that e-retailing strategy has a positive effect on the number of levels drilled.

Regression 3: Browsing Time

Regressing browsing time on the individual level factors (brand knowledge and prior contact) yielded the results displayed in Tables 27 and 28.

Table 27: Summary of the results of regressing browsing time on brand knowledge and prior contact.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.194	.038	.029	448.8127

Table 28 indicates that brand knowledge is not a significant predictor of browsing time (p = .525), while prior contact with a website is (p = .005). Table 28 also shows the unstandardized coefficients for the regression that will be used to compute the predicted values of browsing time.

Table 28: Results of the regression of browsing time on brand knowledge and prior contact.

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	960.498	41.741	23.011	.000
Prior Contact	202.792	72.260	2.806	**.005**
Brand Knowledge	38.388	60.255	.637	.525

As prior contact with a website increases, so does web surfers' browsing time. A web surfer that has frequented a website is likely to spend more time on it than someone who has not been to that site before.

The unstandardized coefficients displayed in Table 28 are used to compute the predicted values for browsing time (as per Equation 2 above).

$$\text{Browsing Time}_{predicted} = 960.498 + 38.388 \text{ (brand knowledge)} + 202.792 \text{ (prior contact)}$$

(Equation 7)

The predicted values obtained from Equation 7 were then used to obtain the residual ($\hat{E}_1$), by taking the difference between the actual and predicted values of browsing time (Equation 3). The residuals obtained from Equation 3 can be thought of as free from individual-level variance. Therefore, the final step was to regress these residuals on the website level parameters, including the indicator variable for e-retailing strategy (brick and mortar or virtual e-retailer). The regression equation is:

$$\hat{E}_1 = ß_0 + ß_1 \text{ (e-retailing strategy)} + ß_2 \text{ (interactivity)} + ß_3 \text{ (navigability)} + ß_4 \text{ (content)} + ß_5 \text{ (total usability)} + ß_6 \text{ (brand presence)} + ß_7 \text{ (visual clarity)} + ß_8 \text{ (visual richness)} + E_2$$

(Equation 4)

The results of the regression of the residuals (free from individual-level variance) on the website level parameters, as they relate to browsing time are displayed in Tables 29 and 30.

Table 29: Summary of the results obtained by regressing the residuals, as they relate to browsing time, on the website-level parameters including e-retailing strategy.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215	.046	.016	443.2634

Table 30 shows the results obtained from the regression of the residuals on the website level parameters, as they relate to browsing time.

Table 30: Results of regressing the residuals, as they relate to browsing time, on the website level parameters.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	306.287	374.277		.818	.414
Interactivity	-72.414	105.549	-.070	-.686	.493
Navigability	-43.057	71.537	-.092	-.602	.548
Content	-198.713	217.138	-.123	-.915	.361
Brand Presence	112.914	102.810	.151	1.098	.273
Visual Clarity	-44.571	63.606	-.076	-.701	.484
Visual Richness	-16.362	21.154	-.098	-.773	.440
E-retailing Strategy	-26.829	105.202	-.030	-.255	.799

Note that total usability is not included in Table 30 because the statistical software removed it from the regression equation due to its collinearity with the other predictors. Recall that total usability is the sum of interactivity, navigability and content.

Table 30 indicates that none of the website level parameters, including e-retailing strategy is a significant predictor of browsing time. Therefore, there is little that managers can do to their websites to encourage web surfers to spend more time on them. This finding may be disappointing to many website designers and marketing managers and may encourage them to review and rethink some of their short-term goals. The trade literature suggests that the goal of many managers is to encourage consumers to spend as much time as possible on their websites (Murphy, 1999). Managers currently employ a variety of strategies to achieve this goal be it through interactive games or reward

programs for those who spend a certain amount of time on a website (Murphy, 1999). Managers should begin to realign their goals according to these findings. Browsing time is not significantly predicted by any of the website level factors mentioned here. Perhaps they should begin to look at the other behavioural outcomes, and adjust their design strategies accordingly.

To date, however, there has been no research suggesting that increased web surfer browsing time is vital to the existence of websites. Gillespie et al. (1999) made the first scholarly attempt to demonstrate that for e-retailers measuring stickiness by the length of browsing time may be erroneous. They suggest that it is possible that a web surfer is spending a lot of time on a given website because they are "lost" and cannot find what they are looking for or they are simply unable to complete their transaction (either as a function of the design of the website, or their lack of familiarity with online transactions). Perhaps the findings highlighted in Table 30, coupled with Gillespie et al.'s theory that browsing time may not be the ideal measure of stickiness should encourage academics and practitioners to find other ways of measuring stickiness.

Alternatively, one can use the findings in Table 30 to surmise that there is nothing at the website-level that managers can do to influence the amount of time a web surfer spends on a website, perhaps browsing time is best left as a function of individual level factors. It has already been shown, in Table 28, that prior contact with a website is a good predictor of browsing time. Thus, managers should seek to increase the exposure of their websites so that more consumers will have prior contact with a site, which in turn translates into increased browsing time.

Regression 4: Intention to be loyal

Regressing intention to be loyal on the individual level factors (brand knowledge and prior contact) yielded the results displayed in Tables 31 and 32.

Table 31: Summary of the results of regressing intention to be loyal on brand knowledge and prior contact.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.323	.105	.097	5.1865

Table 32 indicates that brand knowledge is not a significant predictor of intentions to be loyal (p = .241), while prior contact with a website is (p = .000). Table 32 also shows the unstandardized coefficients for the regression that will be used to compute the predicted values of intention to be loyal.

Table 32: Results of the regression of intention to be loyal on brand knowledge and prior contact.

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	10.462	.482	21.690	.000
Prior Contact	4.036	.835	4.833	**.000**
Brand Knowledge	.818	.696	1.175	.241

As prior contact with a website increases, so does web surfers' intentions to be loyal. This finding is intuitive. If a person is already familiar with a website because they have visited it (frequently) in the past, then it is likely that they will exhibit greater intentions to be loyal. In the consumer behaviour literature, this phenomenon is referred to as the formation of habit. Solomon et al. (1996) define habitual decision making as

those decisions that are made with little or no conscious effort. The development of repetitive or habitual behaviours ultimately minimizes the energy and time spent by consumers. The decision made by a web surfer who has once been to a particular website, to return to a website again can be likened to habitual decision making in the consumer behaviour literature. Web surfers that have frequented a website are therefore likely to exhibit intentions to be loyal to that particular website. Obviously, if a web surfer returns to a site they had been to in the past (prior contact) then they are exhibiting intentions to be loyal, because they are coming back to the site. However, there is no way of knowing the reason for their return visit, the purpose of their visit (is it to price compare with another more preferred website?) or how frequently they visit. Nonetheless, these findings suggest that prior contact is a good predictor of intention to be loyal.

The unstandardized coefficients displayed in Table 31 are used to compute the predicted values (as per Equation 2 above).

Intention to be $\text{loyal}_{\text{predicted}} = 960.498 + 38.388$ (brand knowledge) + 202.792 (prior contact)

(Equation 8)

The predicted values obtained from Equation 8 were then used to obtain the residual ($\hat{E}_1$), by taking the difference between the actual and predicted values of intention to be loyal (Equation 3). The residuals obtained from Equation 3 can be thought of as free from individual-level variance. Therefore, the final step was to regress these residuals on the website level parameters, including the indicator variable for e-retailing strategy (brick and mortar or virtual e-retailer). The regression equation is:

$\hat{E}_1 = ß_0 + ß_1$ (e-retailing strategy) + $ß_2$ (interactivity) + $ß_3$ (navigability) + $ß_4$ (content) + $ß_5$ (total usability) + $ß_6$ (brand presence) + $ß_7$ (visual clarity) + $ß_8$ (visual richness) + E_2

(Equation 4)

The results of the regression of the residuals (free from individual-level variance) on the website level parameters, as they relate to intention to be loyal are displayed in Tables 33 and 34.

Table 33: Summary of the results obtained by regressing the residuals, as they relate to intention to be loyal, on the website-level parameters including e-retailing strategy.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.297	.088	.059	5.0089

Table 34 shows the results obtained from the regression of the residuals on the website level parameters, as they relate to intention to be loyal.

Table 34: Results of regressing the residuals, as they relate to intention to be loyal, on the website level parameters.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.483	4.229		1.769	.078
Interactivity	-.705	1.193	-.059	-.591	.555
Navigability	-1.311	.808	-.243	-1.622	.106
Content	-8.265	2.454	-.443	-3.369	**.001**
Brand Presence	1.501	1.162	.173	1.292	.198
Visual Clarity	1.612	.719	.239	2.243	**.026**
Visual Richness	-.198	.239	-.103	-.828	.409
E-retailing Strategy	-.216	1.189	-.021	-.182	.856

Note that total usability is not included in Table 34 because the statistical software removed it from the regression equation due to its collinearity with the other predictors. Recall that total usability is the sum of interactivity, navigability and content.

Table 34 shows that as content increases, intentions to be loyal decrease. If there is too much information to sort through on a homepage (high on content) then a web surfer is likely to switch to a simpler, less content-heavy website. In addition, the findings suggest that the greater the visual clarity of the website, the greater the web surfer's intentions to be loyal. Szymanski and Hise (2000) found that website design was a significant predictor of a consumer's satisfaction with a website. The more visually clear the homepage of a website is, the less frustrated and the more satisfied a web browser will be; this will in turn lead to heightened intentions to be loyal.

Maximizing visual clarity and controlling the content on a homepage are feasible and manageable tasks for website designers and marketing managers. Thus, managers can readily apply these findings to their websites to reap the benefits of engaging web surfers with intentions to be loyal.

Regression 5: Loyalty Behaviour

Regressing loyalty behaviour on the individual level factors (brand knowledge and prior contact) yielded the results displayed in Tables 35 and 36.

Table 35: Summary of the results of regressing loyalty behaviour on brand knowledge and prior contact.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.193	.037	.029	.8142

Table 36 indicates that brand knowledge is not a significant predictor of loyalty behaviour (p = .195), while prior contact with a website is (p = .006). Table 36 also shows the unstandardized coefficients for the regression that will be used to compute the predicted values of loyalty behaviour.

Table 36: Results of the regression of loyalty behaviour on brand knowledge and prior contact.

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	.294	.076	3.886	.000
Prior Contact	.363	.131	2.765	**.006**
Brand Knowledge	-.142	.109	-1.300	.195

As prior contact with a website increases, so does web surfers' loyalty behaviours. The rationale is the same as that which was put forth concerning intentions to be loyal and again, this can be explained by the consumer behaviour theory of habit formation. The greater the previous contact with a website, the more likely a web surfer is to exhibit loyalty behaviours such as sending the link to a friend and signing up for their newsletters. It is also likely that if they have visited the website in the past, the web address is already added to their list of favourites.

If a person is already familiar with a website because they have visited it (frequently) in the past, then it is likely that they will exhibit more loyalty behaviours. Again, this phenomenon can also be referred to as the formation of habit. The development of repetitive or habitual behaviours ultimately minimizes the energy and time spent by consumers. The decision made by a web surfer who has once been to a particular website, to return to a website again can be likened to habitual decision making in the consumer behaviour literature. Web surfers that have frequented a website are therefore likely to exhibit loyalty behaviours towards a particular website. These findings suggest that prior contact is a good predictor of loyalty behaviour.

The unstandardized coefficients displayed in Table 36 are used to compute the predicted values of loyalty behaviour (as per Equation 2 above).

$$\text{Loyalty Behaviour}_{\text{predicted}} = 960.498 + 38.388 \text{ (brand knowledge)} + 202.792 \text{ (prior contact)}$$

(Equation 9)

The predicted values obtained from Equation 9 were then used to obtain the residual ($\hat{E}_i$), by taking the difference between the actual and predicted values of loyalty

behaviour (Equation 3). The residuals obtained from Equation 3 can be thought of as free from individual-level variance. Therefore, the final step was to regress these residuals on the website level parameters, including the indicator variable for e-retailing strategy (brick and mortar or virtual e-retailer). The regression equation is:

$$\hat{E}_1 = ß_0 + ß_1 \text{ (e-retailing strategy)} + ß_2 \text{ (interactivity)} + ß_3 \text{ (navigability)} + ß_4 \text{ (content)} + ß_5 \text{ (total usability)} + ß_6 \text{ (brand presence)} + ß_7 \text{ (visual clarity)} + ß_8 \text{ (visual richness)} + E_2$$

(Equation 4)

The results of the regression of the residuals (free from individual-level variance) on the website level parameters, as they relate to loyalty behaviour are displayed in Tables 37 and 38.

Table 37: Summary of the results obtained by regressing the residuals, as they relate to loyalty behaviour, on the website-level parameters including e-retailing strategy.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.056	.003	-.029	.8221

Table 38 shows the results obtained from the regression of the residuals on the website level parameters, as they relate to loyalty behaviour.

Table 38: Results of regressing the residuals, as they relate to loyalty behaviour, on the website level parameters.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.363E-02	.694		.120	.904
Interactivity	-1.190E-02	.196	-.006	-.061	.952
Navigability	5.070E-04	.133	.001	.004	.997
Content	-.197	.403	-.067	-.489	.625
Brand Presence	-2.078E-02	.191	-.015	-.109	.913
Visual Clarity	6.541E-02	.118	.062	.554	.580
Visual Richness	7.296E-03	.039	.024	.186	.853
E-retailing Strategy	-4.608E-02	.195	-.028	-.236	.813

Note that total usability is not included in Table 38 because the statistical software removed it from the regression equation due to its collinearity with the other predictors. Recall that total usability is the sum of interactivity, navigability and content.

Table 38 shows that none of the website level parameters including e-retailing strategy are good predictors of loyalty behaviour. This is a troubling finding for managers because it means that they cannot control their websites to encourage loyalty behaviour on the part of web surfers. This fifth and final regression involving loyalty behaviour suggests that they are best predicted by individual level factors as opposed to website level factors. Table 36 indicated that prior contact is a significant predictor of loyalty behaviour. Thus, managers should seek to increase the exposure of their websites

so that more consumers will have prior contact with a site, which in turn translates into increased loyalty behaviour.

The final step in the analysis is to examine the correlational relationships that exist between the variables. Regression analysis allows us to find a model that helps to predict the value of the dependent variable. On the other hand, correlation analysis measures the strength of the relationship between two quantitative variables. With the help of SPSS, the correlations between all the variables were computed and yielded the results displayed in Table 39.

Table 39 shows that there are a number of statistically significant correlations between the variables at both the 0.01 and 0.05 levels. However, many of the statistically significant correlations are weak because the Pearson correlation coefficients are closer to zero than they are to one. Nonetheless, the presence of the many correlated variables indicates that there is collinearity between some of the variables.

There are three clusters of correlations that are worth highlighting. Firstly, the three measures of stickiness, namely browsing time, pages viewed and levels drilled have correlations significant at the 0.01 level. It should be noted that the strongest correlation of all the correlations depicted in Table 39 is between pages viewed and levels drilled ($r = .878, p = .000$). There is a strong positive relationship between levels drilled and pages viewed. The more pages a web surfer views, the more levels they have drilled into a website. The other two relationships are highly significant and positive but are weaker since their correlation coefficients are closer to zero than they are to one. The

correlations are: (1) browsing time and levels drilled ($r = .246$, $p = .000$) and; (2) browsing time and pages viewed ($r = .205$, $p = .002$).

Secondly, the three measures of stickiness are not only correlated with each other but they are also each significantly correlated with brand presence. The correlation coefficients and significance values are: (1) browsing time and brand presence ($r = .193$, $p = .003$); (2) levels drilled and brand presence ($r = -.131$, $p = .048$) and; (3) pages viewed and brand presence ($r = -.233$, $p = .000$). Again, because the correlation coefficients are closer to zero than they are to one, the correlations are weak but nonetheless significant. Levels drilled and pages viewed have a negative relationship to brand presence. Conversely, browsing time and brand presence are positively related.

Thirdly, total usability and brand-related parameters are significantly correlated with the two subdivisions of atmospheric parameters, namely visual clarity and visual richness. The correlation coefficients and significance values are: (1) total usability and visual clarity ($r = -.270$, $p = .000$); (2) total usability and visual richness ($r = -.293$, $p = .000$); (3) brand presence and visual clarity ($r = -.275$, $p = .000$) and; (4) brand presence and visual richness ($r = .655$, $p = .000$). Total usability has a negative relationship with the atmospheric parameters; in other words, as total usability of a homepage increases, the visual clarity and visual richness decrease. On the other hand, brand presence has a negative relationship with visual clarity but a strong positive relationship with visual richness. As the presence of branding features increases on a homepage, the visual clarity decreases while the visual richness increases.

Table 39: The correlations between all the variables, where n = 228 in all cells.

	E-Strategy	Browse Time	Levels Drilled	Pages Viewed	Interactivity	Navigability	Content	Usability	Brand Presence	Visual Clarity	Visual Richness	Loyalty Behaviour	Intention to be Loyal	Prior Contact
Browse Time	-.128 .053													
Levels Drilled	.132* .046	.246** .000												
Pages Viewed	.139* .036	.205** .002	.878** .000											
Interactivity	-.293** .000	-.052 .439	-.187** .005	-.211** .001										
Navigability	-.015 .824	.008 .910	.084 .208	.069 .301	.454** .000									
Content	.357** .000	-.110 .099	.048 .466	.079 .236	-.522** .000	-.764** .000								
Usability	-.042 .530	-.045 .499	.012 .857	-.004 .952	.714** .000	.930** .000	-.671** .000							
Brand Character	-.497** .000	.193** .003	-.131* .048	-.233** .000	.081 .224	.184** .005	-.380** .000	.104 .118						
Visual Clarity	.553** .000	-.125 .059	-.144* .030	-.031 .639	-.126 .057	-.40** .000	.592** .000	-.270** .000	-.275** .000					
Visual Richness	-.327** .000	.095 .155	-.267** .000	-.472** .000	.036 .589	-.332** .000	.019 .778	-.293 .000	.655** .000	-.041 .540				
Loyalty Behaviour	.006 .925	.008 .909	.013 .848	.004 .953	.003 .963	-.041 .534	-.002 .981	-.038 .566	.056 .401	.059 .373	.070 .292			
Intention to be Loyal	-.065 .327	.163* .014	.020 .764	-.006 .928	-.006 .928	-.050 .455	-.121 .068	-.083 .213	.243** .000	.072 .277	.167* .012	.388** .000		
Prior Contact	.061 .360	.189** .004	-.064 .339	-.159* .016	-.159* .016	-.291** .000	-.121 .067	-.309** .000	.240** .000	.194** .003	.296** .000	.173** .009	.315** .000	
Brand Knowledge	-.131 .047	.062 .352	.020 .759	-.041 .540	-.041 .540	.025 .711	-.085 .200	-.017 .793	.119 .073	-.162* .014**	.031 .643	-.066 .322	.108 .105	.108 .103

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

5. CONCLUSION

The primary goal of the present thesis was to develop an objective and systematic means of measuring and categorizing the parameters of an e-retailer's homepage. The second goal was to conduct a preliminary empirical investigation into the relationship between the parameters of homepages and the behavioural responses of consumers. A qualitative method using the guiding principles of the grounded theory approach yielded three broad categories of objective parameters and their measurement items. The three categories of homepage parameters identified in Study 1 were: (1) usability parameters; (2) brand-related parameters and; (3) atmospheric parameters.

The identification of three key categories of objective parameters is a significant advance in the arena of website design research. To date, marketing managers and website designers have had to rely on the trade literature on website design that is replete with checklists and how-to guides (e.g. Carroll and Broadhead, 1999; Timacheff and Rand, 2001) that lack scientific rigour. Moreover, the limited academic research relies heavily on the subjective assessments of websites relating to level of enjoyment, visual appeal and overall feeling about websites (e.g. Szymanski and Hise, 2000; Srinivasan et al., 2002). Contrastingly, the present thesis offers an objective means of categorizing and measuring the objective parameters of homepages. This is likely to be a useful and reliable tool for e-retailers to build effective websites.

The field study described in Study 2 using twelve e-retailers identified several significant differences in the measures of stickiness and loyalty depending upon e-retailing strategy employed and existence or absence of prior contact with a website. For example, there were significant differences in the navigability, content, brand presence,

visual richness and visual clarity of a homepage depending upon the e-retailing strategy employed. Brick and mortar e-retailers have more experience in navigating and branding given that they existed in an offline environment prior to venturing into the virtual environment and perhaps they leverage this expertise in the virtual environment.

Table 40 shows the significant differences in the measures of stickiness and loyalty that emerged as a result of a number of t-tests.

Table 40: Summary results, Study 2.

	Browsing Time	Pages Viewed	Levels Drilled	Intention to be Loyal	Loyalty Behaviours
E-Retailing Strategy[1]		BM = 51.56 V = 69.58			
Prior Contact[2]	No = 976.24 Yes = 1184.02			No = 10.8 Yes = 14.94	No = .236 Yes = .58
Brand Knowledge					

All p-values < 0.05

[1] BM = brick and mortar e-retailer, V = virtual e-retailer

[2] No = no prior contact with the website, Yes = prior contact with the website

The shaded cells in Table 40 indicate which of the web surfer level outcomes (the various measures of stickiness and loyalty) were significantly affected by the e-retailing strategy employed, existence/lack of prior contact with a website and level of brand knowledge (high or low). Both intention to be loyal and loyalty behaviours were significantly different based on whether the web surfers had prior contact with the website or not. Prior contact with the websites led to significantly higher intentions to be loyal and loyalty behaviours. Pages viewed was significantly different depending upon the e-retailing strategy employed (brick and mortar or virtual e-retailer). Virtual e-

retailers led to significantly greater number of pages viewed. Lastly, browsing time was significantly higher if the web surfer had prior contact with the website.

The overall objective of Study 2 was to isolate the effects of website-level parameters on the consumer-level responses of stickiness and loyalty and to account for eventual differences attributable to the e-retailing strategy. Importantly, web surfer-level outcomes are likely influenced by factors such as prior contact with a website and brand knowledge. Therefore, each web surfer level outcome was treated to a series of analyses intended to first remove individual-level variance attributable to such factors. Thus, that which remained could be attributed to the effects of the website level factors. Five independent sets of regressions involving the web surfer level outcomes of stickiness (pages viewed, levels drilled and browsing time) and loyalty (intentions to be loyal and loyalty behaviours) yielded the results summarized in Table 41. Table 41 shows which of the website level factors were significant predictors of the web surfer level outcomes.

Table 41: Summary of the results obtained in Study 2 as a result of five independent regressions (free from individual level variance).

	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5
	Pages Viewed	**Levels Drilled**	**Browsing Time**	**Intention to be Loyal**	**Loyalty Behaviour**
Interactivity					
Navigability					
Content				p = .00 ß = -.44	
Brand Presence	p = .01 ß = .34	p = .05 ß = .25			
Visual Clarity		p = .00 ß = -.39		p = .03 ß = .24	
Visual Richness	p = .00 ß = -.72	p = .00 ß = -.37			
E-Retailing Strategy		p = .01 ß = .27			

Table 41 indicates that none of the website level factors is a good predictor of browsing time or loyalty behaviour. Brand presence and visual richness are significant predictors of pages viewed. Brand presence, visual clarity, visual richness and e-retailing strategy are significant predictors of levels drilled. Lastly, content and visual clarity are significant predictors of intentions to be loyal.

The findings reveal that there are sufficient website level factors that are under the control of managers that can be manipulated to predict and control pages viewed, levels drilled and intentions to be loyal. Future research is required to understand better what website level factors influence browsing time and loyalty behaviours.

To date, the website design literature makes little mention of the influence online branding has on web surfers. In the trade literature, Breakenridge (2001) asserts that branding enhances the credibility and familiarity of a website but does not make the link

to the effects this might have on web surfers. These findings fill the gap by showing that the presence of branding features increases the number of pages viewed and the number of levels drilled by web surfers.

Gillespie et al. (1999) contend that stickiness is ultimately composed of three measures: (1) pages viewed; (2) levels drilled and; (3) browsing time; however, they assert that the three components function in a compensatory fashion, if one element is low, the others can compensate to create stickiness. Thus, because brand presence positively predicts two of the three measures of stickiness (pages viewed and levels drilled), it can be concluded that online branding enhances web surfer stickiness to a website. Similarly, visual richness significantly predicts (negatively) pages viewed and levels drilled; therefore, it can be concluded that the lower the visual clarity of a homepage, the greater the consumer stickiness.

In addition to the website level factors that impact stickiness and loyalty, Study 2 found that one of the two individual level factors influences web surfer level outcomes. Prior contact with a website was a significant predictor of (1) browsing time ($p = .005$); (2) intentions to be loyal ($p = .000$) and; (3) loyalty behaviours ($p = .006$). Interestingly, brand knowledge was not a significant predictor of any of the measures of stickiness or loyalty. Marketing managers and website designers should strive to ensure that as many web surfers as possible have an initial contact with their websites. As a result, web surfers are likely to spend more time on the website and be more loyal to it.

Limitations and Future Research

The present findings must be appreciated in light of the limitations inherent to the chosen methodology. Mortality was an issue of great concern as the methodology was developed. The study required that respondents participate for 12 consecutive days and that they use a specific computer lab on campus. To minimize the number of respondents who would potentially drop out of the study, they were told that they would receive financial compensation in exchange for their time and earnest efforts at the completion of the study. We started out with 24 respondents, but only 19 respondents provided sufficient data to be included in the analysis. The sample size is therefore a possible limitation of the study. Nineteen respondents are perhaps too few for the findings to be generalizable; but this study is nonetheless, the stepping-stone to other larger research projects in the same arena. A team of researchers is already in the process of replicating this study with over 200 participants.

Gender differences may also be a limitation of the present research. In Study 2, 79% of the participants were female (15 of the 19 participants). There is some research suggesting that males and females exhibit different types of behaviour online. Previous studies have concluded not only that males and females differ in their computer cognitions and attitudes, but also that they differ in the types of applications they pursue online (Shaw and Gant, 2002). Other research reported that males were more likely than females to use multimedia technology and to surf the Internet; no other gender differences in terms of online behaviour were found (Lewis, Coursol and Khan, 2001). The lack of consensus in the literature on the presence and degree of gender differences that may exist in online behaviour translates into a possible limitation for the studies

conducted for the purpose of this thesis. Future research should replicate the studies and look at the gender differences that emerge in terms of stickiness and loyalty.

In the present study, participants were unable to turn on the sound on the computers in the computer lab and thus their web browsing experiences were impeded by their inability to hear the sounds conveyed by the websites. Information was therefore only conveyed to them through sight. It is unclear whether adding sound would have significantly affected loyalty or stickiness. Perhaps the effects of sound would only have been felt for products where sound is a significant attribute such as for music websites like CDNow or for car websites for consumers to hear the sounds of the engines. It is possible that sound had no effect on the loyalty or stickiness of our respondents since the selected twelve websites were related to other product categories such as clothing, edibles, beauty products and software. Future research should attempt to replicate Study 2 in an environment where participants can be exposed to the sounds made on the different websites.

Furthermore, there is some suspicion that the way some websites are built may have confused the way the Windows-compatible software was programmed to count the number of pages viewed by each participant (one of the three measures of stickiness). Future research should reinvestigate a means of accurately measuring the number of pages viewed by participants, taking into account that not all websites are built the same way.

In addition, some of the results could be due to a common area of variance: intentions to be loyal may not accurately reflect the likelihood of actual behaviour. While there is a plethora of evidence suggesting that intentions are predictors of

behaviour, it is still unproven that intentions during web browsing will properly predict subsequent behaviour.

Many methodological issues with respect to conducting research over the Internet require consideration. Firstly, the data collection environment can affect the participants' responses and web browsing experiences and therefore, is an extraneous variable that needs to be recognized. The respondents had to participate in the study from a specific computer lab located on campus because the Windows-compatible software was loaded onto those computers. In addition, all the computers in that particular computer lab were calibrated so that the graphics and colours viewed by different respondents on different computers were the same. However, depending on the time of day, the lab could have been quiet or replete with students and this could have affected the accuracy of their responses to the post browsing measures (see Appendix A). This limitation lends itself to two distinct recommendations for future research. The first would be to conduct the same study in a more controlled environment to minimize the effects of distractions. The second recommendation would be to conduct the study in a less controlled and in a more realistic web browsing setting, perhaps from the comfort of participants' homes. It would be challenging to ensure that the speed of download and the colours viewed by participants would be the same, but the environment would be more akin to the way people typically browse the internet and might therefore offer greater insight.

Secondly, with online questionnaires there is a lack of interaction between researcher and respondent. This obviously reduces the demand characteristics and experimenter effects but it also does not allow participants to ask questions. Providing them with an email address and phone number of a research assistant who was able to

answer their questions minimized the negative effects of this. In addition, there was an hour-long information session at the beginning of the data collection. At that time, the researchers answered the students' questions.

Thirdly, conducting research over the Internet makes it difficult to ensure that the participants are who they say they are, do not participate more than once and answer honestly. The first two problems were minimized because each respondent received a unique identification number. This unique identification number was for financial compensation and tracking purposes only and therefore did not breach the confidentiality promised to the participants. The latter problem is an issue that arises not only with virtual questionnaires but also with pencil-and-paper ones. There is never any guarantee that a respondent is answering entirely honestly. We can develop a good rapport with them during the introduction section to encourage them to be honest but beyond that, it is practically impossible to improve in this regard. Moreover, research has shown that people tend to behave differently on the internet than in real life. Online they tend to be less inhibited and more self-disclosing. It will be interesting to see how the men fared on the www.victoriassecret.com website!

This thesis describes an area of website design research that is still in its infancy. The primary direction for future research is to build upon the framework presented herein. Future research should aim to validate, refine and update continuously the parameters of a website's homepage available for implementation, and consequently to evaluate their effect on consumer stickiness and loyalty. More specifically but in the same vein, future research should examine what website level factors influence browsing

time and loyalty behaviours since this research did not come across any website level factors that were significant predictors of these two web surfer level outcomes. Moreover, this research should be taken one-step further to examine the financial ramifications and implications of having sticky and loyal web surfers. We now know that some website level and individual level factors influence consumer stickiness and loyalty, but how does this affect e-retailers? Lastly, the present study should be replicated using an array of websites. Chen, Clifford and Well (2002) assert that in e-commerce research, the selection of websites is likely even more important than the respondent sampling strategy employed.

Marketing Implications

Ultimately, the significance of any academic research is the value it adds to work done by practitioners in the field and to future academic research. As such, this thesis offers theoretically and managerially relevant findings to a body of academic literature that is still in its infancy. It also offers practitioners a more organized way of tackling website design decisions.

From a practical and managerial perspective, this thesis offers considerable contributions. The objective of Study 1 was to build a categorical means of organizing and measuring the parameters of a website's homepage. Marketing managers and website designers are encouraged to begin working with the categorization and method of measurement proposed in Study 1. It is only through the practical implementation of a theoretically sound framework that its merits and limitations will become more evident. Moreover, now that practitioners and academics have a more concrete list of parameters

to work with, they can begin to analyze the effects that their design decisions may have on their consumers. Since the design of a website's homepage is under the control of website designers and managers, they should begin to think more systematically about the approaches they are going to employ on their websites. They can also begin to target their website designs to elicit specific behavioural responses. Perhaps most reassuring is the confirmation that there are specific website parameters that are controllable by managers and designers that can be managed, monitored and manipulated to deduce specific behavioural responses from consumers.

The primary goal of Study 2 was to isolate the individual level factors from the website level factors to gain a better understanding of the impact they have on consumer stickiness and loyalty. Study 2 showed that of the individual level factors, prior contact with a website was a significant predictor of browsing time, intention to be loyal and loyalty behaviour. Consequently, managers should strive to increase the exposure of their websites to ensure that as many web surfers as possible have at least an initial contact with their site. The 1998 Forrester Research Report found that content was the most important factor in consumers discovering websites and it is the content of a website that encourages them to return to a site in the future (Murphy, 1999). The report revealed that content is what drives 75% of consumers to return to their favourite sites (Murphy, 1999). Thus, one suggestion to increase the number of web surfers who report having prior contact with a website, would be to focus on the content of the site ensuring that it is not staid and consistently up-to-date. In addition, since Study 2 found content to be a significant predictor of intentions to be loyal, focusing on the content of a homepage

would serve a dual purpose: (1) increase prior contact and; (2) increase intentions to be loyal.

The brand-related parameters delineated in Study 1 were found to be significant predictors of consumer stickiness in Study 2. The existing trade and academic literatures seem to suggest that little thought is given to the branding features on websites and homepages and that their impact may be taken for granted. The findings suggest that this should not be the case and that managers should devote time and energy to the brand-related parameters of their homepages. Branding not only increases the credibility and familiarity of websites (Breakenridge, 2001) it also increases consumer stickiness to a website. The online branding features should be contemplated with as much fervour and rigour as the other design parameters.

For a conceptual perspective, this thesis plays an important role in adding to the dearth of existing academic literature on e-commerce and more specifically, on the parameters of a website's homepage. These studies add to our understanding of online consumer behaviour and how consumers are likely to respond to different website parameters.

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APPENDIX A: SELECTED INTERVIEW TRANSCRIPTS

Sample of Interviews Conducted with Professional Website Designers

Meeting with Bruno Bouchon
Tokom (www.tokom.com)
Tuesday, March 19, 2002 (9h30-10h30)

The conversation was largely centered around Tokom's latest work, a site for Garnier Laboratory and its Nutrisse line of hair coloring products. Tokom also handled the design of McGill's Faculty of Management. From my meeting with Mr. Bouchon, I got the sense that this firm has more strategic sense of the web's usefulness for its clients. This firm is also much larger and handles larger clients than arobas.net (see next interview).

Can you tell me what are the kinds of things you pay close attention to when designing a site?
(without hesitation) The structure (=arborescence). In the case of Nutrisse, for instance, we started with the results of focus groups we had done previously. We knew the end user is 35-55, not really into web surfing, doesn't read everything that is in front of her, gets aggravated when she can't find the buttons, etc.

Then there's also the question of the preferences of our client, who in this case was also a woman. So in a sense we have to please her first.

Then we have to work with the graphic elements submitted by the client. In this case, we have to work with the colors of Nutrisse and Garnier, the logo, etc. So choice of colors is influenced by such items.

Then we make a functional chart as to how the site will be structured and we work with the writers and the creative staff to assemble 2 mock-ups of about 2 pages each that we present to the client.

In building those mock-ups, what kinds of things do focus on?
Ergonomic imperatives... like buttons, of standard colors, form, and movement.
We try to avoid scrolls if it is a page where sales information is exchanged, scroll is ok only when customers are looking for information.
For large mass media stuff, we have to fit in 600 x 800 screen size, so that's important.
Also, buttons have to be at same place on the page, like the arrow to move to next page or the Submit button. People have a language that they are used to when navigating, you have to respect that.
Menus are always on the left hand side, that's almost a universal thing. Which is kind of odd when you think about it because the mouse is usually on the right.
The weight of the page is important, we try to fit within 60 k.
Speed of connection is also important, although high speed connection is gaining in popularity.

Roll-over for mouse is important. That's when an option changes color when your mouse button touches it.

The idea is to avoid frustration while creating an environment that supports the brand. We have to achieve brand awareness and recognition. In the case of Nutrisse, we built the site to so give a sense that the hair coloring recommendations would be seen as good and as expert as those you might get in a hair salon. So we invented this diagnostic exercise where women are taken on successive pages and asked questions about their hair so to recommend the ideal product within the product line, that builds on the expertise of Garnier as leaders in hair coloring. From one page to the next the only thing that changes is a picture of a different real-life user of the product, the rest stays the same.

This is the second version of the site. The first version was to give product samples away, this one is much more sophisticated, for one thing we give advice and also it will shortly be used to run a major contest. This time around, the logo, packaging and spokesperson for the product (Sarah Jessica Parker) had changed so we need to make major changes.

This version helped us collect 60,000 emails from visitors.

How do you get people to send you emails? How do you overcome their fears?
Well they have to feel at ease and trust. So the email and collection of personal info comes at the end, after they've gone through the diagnostic. And it is a give-give situation, people will give you their information if they get something out of it, like a prize or information they can use. So our diagnostic system is a big plus. Then we have contests and giveaways. We had one contest where people were asked to give us the emails of five friends and then they could win a weekend at a spa with those friends. Like with BelleColor there was a simultaneous ad in Chatelaine where people were invited to go to the web, well we had twice as many responses from the web than by written mail. And you have to make it easy, so clear submit button, clear windows where people can write in their message, no more using the email interface. At all times, of course, people need to be able to get out of the system, to abort the process easily.

Now, when we have visitors' personal information we can target things more efficiently. Like if Nutrisse has a promotion in Vancouver, we can email all the brunettes who want to go blonde in that area.

In thinking back to sites you've designed, can you think of one that was a big challenge?
There are two.
The first was the website for the Faculty of Management at McGill University. That was a technological challenge. The amount of information that had to be handled and organized was enormous. And then we had to make it so that security and updates could be done by McGill internally. The architecture of this site was critical to make it easy for actual and prospective students to navigate the site. The other would be the site for Fructis because we only had one month to build it. We had to impose the brand without resorting to meaning advertising-like clichés. The end user was 15-30 which means that

they are all at once rebellious and skeptic of advertising claims but at the same time they like anything that has to do with brand imge. We had to use the green color of Fructis and we could use Flash because the younger market was into that.

Meeting with Joel Fortin
Arobas Net
Friday, March 15, 2002 (14h00-15h00)

When approaching a new project, what guides your thinking?
First I start with a global idea of what the client wants.
For example, this one client wanted a website with a leopard background because she sells shoes and her store has lots of leopard prints. I told her I couldn't that because it would be too graphically heavy and intense but instead I chose background colors and other elements that produced the effect she wanted.
I try to get the client to tell me what the general feeling of the website should be.
From those ideas, I then develop 3 to 4 prototypes that I will show the client.

What are other elements, parameters you pay attention to?
Colors, can't be "aggressing" (= aggressant)
Also, people prefer buttons, like icons instead of written stuff.
Self-explanatory buttons and icons make it easier to surf to find way on the site
And it limits reading.

Also, things have to move. Like TV, that makes things interesting.
Flash and shockwave are ways of doing that.
But moving gif are out, because you can't stop them, it's aggressing.
People must have control to turn stuff on or off, like music.

Speaking of what is in and out. What is the trend right now in terms of web design?
(without hesitation) Smaller sites.
What do you mean?
Well, smaller sites with fewer pages. Pop up windows also I think are on the way out because they're aggressing.
Smaller sites also load faster. The speed of connection is another we have to watch out for. Not everyone has high speed connection.

How would a smaller site translate itself physically? I mean what would a smaller site look like?
Well, for instance, the home page can't exceed 50K. And you want to avoid heavy images and instead go for smaller images that can be enlarged when the customer clicks on it.
People hate having to change page, so page have to renew themselves and not always open up new windows because that takes memory and then your computer freezes, especially people who have older, less performing computers.

What else do you watch out for when you design sites?
Always a return option or button to go back or return to the home page.
The screen size is a big one too, probably the most important element in terms of aesthetics. 800x600 is still the most popular screen size so you have to lay things out so it looks good on any size. Which means the layout of text and pictures, keeping in mind

that the eye moves left to right. Pictures are best centered or placed so to avoid too much white space.
Also email option right on the screen. That is a box where people just write there message and then hit 'submit' and then a converter sends it to the right email address. That avoids the whole email business and people's browser not configured to their email. That also avoids viruses that are passed along by Outlook and Outlook Express.
Redimensionalizable windows are also important, that means that they can be resized for any size screens.
Easy to find links, visible enough and that work.
Also menus that disapper when you move your mouse away, some drop down menus still "hang" even when you move your mouse away and the only way to get rid of them is by clicking your mouse in an empty region of the screen, that's aggressing.
The background. First you have to choose your background color and then move from there. Make sure the color is a certified web-colored, most people don't have 16 and 32 bit screen capabilities. You have to choose the color so it doesn't clash.
Use sound sparingly, make sure people can turn it off, that's why MIDI are no longer used. The viewer must be in control.

How about security? How do you deal with that?
Well that's a big question but really that's an easy one to handle. You have to put up the right landmarks for people to feel safe. Like if people don't see one of those padlocks at the bottom of the screen, they'll shut it off. So you have to have that. It has to say that it is a secured page and that your data will be encrypted and will not be able to be used by anyone else. You have to have those elements on your page for people to feel safe, they look for that.

We are trying to find out how we can convert the complexity of real-life experiences onto the web. As you talked you often used the word "aggressing", why is that?
Well you can make people feel a certain way but really you want to minimize their frustrations because so many things can go wrong that are outside your control, like speed of connection, so you want to make sure that you control what you can control when designing the site and make sure that it does not aggress people. People expect things to work by themselves. I constantly get calls from people who just connected for the first time and then they call and say that nothing is happening. You have to tell them to launch their browser... and then they expect things to be like a television.

APPENDIX B: FRONT PAGE CODING PARAMETERS

FRONT PAGE CODING

CODER: _____ **SITE URL http://**_____

DATE coding performed: _____ / _____ **(MM/DD)**

Time coding started: _____: _____ **Time coding completed:** _____: _____

INSTRUCTIONS:

- **Code the sites on your own, do not discuss your impressions.**
- **For each front page, allow yourself sufficient time to code the entire page in one visit.**
- **Do not leave blanks, use the 'not applicable' or 'other' option when necessary.**
- **Make sure that the speakers on your computer are turned on and the volume is high enough for you to hear.**

The following are some items you will need to keep track of as you visit the sites. Please read them carefully and keep them in mind throughout your visit.

For the following variables, enter your answer here in the right-most column:

Sound	How many different sounds can be heard?	Count	
Vivide(1)	Number of pictures	Count	
Vivide(2)	How many moving pictures are there?	Count	
Interactivity(1)	How many occasions do you have to enter user information?	Count	
Sitecharacter(6)	How many times does the brand logo appear?	Count Logo appears on all pages	
Load	Something meaningful appears in 8 seconds on the front page	0=no 1=yes	

Usability Parameters			
Parameter	**Parameter Definition**	**Possible Entries**	**Your entry**
Dominant Function	What does the site appear to be built for? Enter all the numbers that apply, in the order of importance you feel they apply to the site. (e.g., 3, 1 – most important first)	1 = to generate sales 2 = for customer relationship/image building 3 = games/humour	
Product	Partial or complete product line is actually shown	0 = no 1 = yes 2 = can't tell 3 = not applicable	
Control	Can you stop the music from playing	0 = can't stop it 1 = can control music 2 = no music is playing	
Menus (1)	Menus appear when cursor is placed over a link	0 = no 1 = yes	
Menus (2)	Menus disappear when cursor is removed	0 = no 1 = yes	
Menus (3)	Pictures change/move/appear when you place your cursor over a menu option (which can be a link or a picture)	0 = no 1 = yes	
Music (4)	Menu options and/or links change color when clicked or 'moused over'	0 = no 1 = yes	
Contact (1)	Company contact information is displayed on the first page	0 = no 1 = yes	
Pop up (1)	Do pop-up windows appear for the brand?	0 = no 1 = yes	
Pop up (2)	Do pop up windows appear for other brands?	0 = no 1 = yes	
Pop up (3)	Pop-up windows contain pictures	0 = no 1 = yes 2 = no pop-up windows	
Pop under (1)	Do pop-under windows appear for the brand?	0 = no 1 = yes	
Pop under (2)	Do pop under windows appear for other brands?	0 = no 1 = yes	
Pop under (3)	Pop-under windows contain pictures	0 = no 1 = yes 2 = no pop-under windows	

Screen (1)	I have to scroll left/right to see information	0 = no 1 = yes	
Screen (2)	Important information is located 'above the fold' (i.e. before you have to scroll down)	0 = no 1 = yes	
Screen (3)	In the upper left corner of the screen, each page has a proper title (i.e., doesn't say 'error')	0 = no 1 = yes	
Protection	Can you click the right button of your mouse and save the picture to a file?	0 = no 1 = yes	
Font size	Font size is large enough to read easily	0 = no 1 = yes	
Font color	Font color contrasts enough against the background for you to read easily	0 = no 1 = yes	

EXECUTIONAL FRAMEWORK PARAMETERS			
Background Color	What is the dominating background color used predominantly throughout the site?	Sample using Fireworks	H = S = B =
Background texture	The background is…	1 = entirely textured 2 = part of it is textured 3 = plain	
Border(1)	What is the dominant color of the horizontal border?	Sample using Fireworks 0 = no horizontal border 1 = no borders	H = S = B =
Border(2)	What is the dominating color of the vertical border?	Sample using Fireworks 0 = no vertical border 1 = no borders	H = S = B =
Border texture(1)	The horizontal border is	1 = entirely textured 2 = part of it is textured 3 = plain 4 = no horizontal border	
Border texture(2)	The vertical border is	1 = entirely textured 2 = part of it is textured 3 = plain 4 = no vertical border	
Foreground color	What is the most prevalent color that contrasts from the background?	Sample using Fireworks	H = S = B =
Sound(1)	What is the nature of the sound?	0 = no sound 1 = voice over 2 = music 3 = combination of music and sound 4 = misc. sound effect	

Sound(2)	Is the sound on a loop?	0 = no 1 = yes 2 = can't tell 3 = not applicable	
Sound(3)	The sound	0 = plays automatically 1 = plays on 'mouse over' 2 = plays on click 3 = combination 4 = not applicable	
Sound(4)	How many different sounds can be heard?	Count	Page 1
Sound(5)	What is the tempo of the music being played?	1 = slow 2 = moderate 3 = fast 4 = not applicable	
Sound(6)	What is the genre of the music being played	1 = golden oldies 2 = opera, classic 3 = hip, hop/ R&B 4 = heavy metal 5 = alternative 6 = pop/rock and roll 7 = cartoon theme song 8 = other theme song 9 = not applicable	
Sound(7)	Is the music instrumental or includes vocals	1 = instrumental only 2 = includes voices 3 = not applicable	
Vivid(1)	Number of pictures	Count	Page 1
Vivid(2)	How many moving pictures are there?	Count	Page 1
Vivid(3)	Pictures of the product are…	0 = abstract 1 = vivid (photographs) 2 = no pictures of product	
Vivid(4)	When you move your cursor over pictures or graphics an ALT tag appears	0 = never 1 = most often 2 = always	

For the next section, pick the main picture on the first page and that you feel can be associated with the brand and adequately captures what someone might remember from this site

EXECUTIONAL FRAMEWORK PARAMETERS			
Parameter	**Definition**	**Possible entries**	**Your entry**
Picture	Briefly describe this picture:		
Picture(1)a	What is in the picture?	1 = people 2 = setting 3 = product 4 = animal 5 = cartoon character 6 = other 7 = combination 8 = there are no pictures	
Picture(2)a	If People…	1 = alone 2 = couple (in apparent relationship) 3 = couple (strangers) 4 = friends 5 = family (e.g., kids + parents) 6 = kids only 7 = baby or babies 8 = many people, no clear relationship 9 = a body part 10 = celebrity endorser 11 = other 0 = not applicable	
Picture(3)a	People in picture are…	1 = posing, standing (no product 2 = posing with product 3 = performing an activity 4 = interacting with product 5 = being intimate 6 = not applicable	
Picture(4)a	If setting	1 = forest/mountain 2 = ocean/beach/lake 3 = countryscape 4 = cityscape 5 = office 6 = home/house (interior or exterior) 7 = bar/restaurant 8 = sky scape 0 = not applicable	

Picture(5)a	If Product	1 = product alone 2 = product being used 3 = not applicable	
Picture(6)a	If animal	1 = dog 2 = cat 3 = other (including combination) 0 = not applicable	
Picture(7)a	Type of picture	1 = famous painting 2 = non famous painting 3 = drawing 4 = photograph 5 = cartoon 6 = other 7 = not applicable	
Picture(8)a	Picture is	1 = black and white 2 = monochrome 3 = multi-color 4 = Sepia 5 = not applicable	

The following questions are answered using www.NetMechanic.com:

NetMechanic(1)	Link check	# bad links	
NetMechanic(2)	Bad links summary report	# bad links	
NetMechanic(3)	Remote links summary report	# remote links	
NetMechanic(4)	HTML check & repair	# errors	
NetMechanic(5)	Browser compatibility	# problems	
NetMechanic(6)	Load time	In seconds, to second decimal place	
NetMechanic(7)	Spell check	# possible errors	

Instructions for testing with NetMechanic:

1. Go to www.netmechanic.com
2. Under "Fix HTML Code Errors" click on "Try it"
3. in the "HTML Toolbox Free Sample" section
    a. Enter URL (ex. www.pringles.com)
    b. How many pages? (select one page)
    c. Free monthly tune up? (uncheck box)
    d. Enter email (your email address)
    e. Test now (click)

The following questions are answered using Google.com:

Google(1)	Number of links to site: using Google, run a search for the name of the company, enter the number of links that send to the site (total number of links will appear in blue results bar on Google)	Count	
Google(2)	Search engine position: when doing search on Google for first keyword (see below), what position does the site come up in ?	Number	0 = site link does not appear in first three pages of results

Instructions for testing with Google:

1. Go to front page of website (ex. www.pringles.com)
2. In menu bar, click view, then source – notepad window will open
3. Look for:
   <META name="keywords" content="Pringles, snacks, video games, game cheats, game tips, online games, chip, chips, potato chip, potato chips, potato, potatoes, snack foods, party snacks, hints, codes, online games">
4. Go to Google.com and search first keyword (ie. Pringles) or phrase (ie. "video games" – if that came first)
5. Record position of website (ie. www.pringles.com comes up first), scroll three pages of results, if site does not appear in those first 3 pages, enter "0" under Google(2) above
6. Run a search in Google using the company name (e.g.; Godiva) and record how many links refer to this site under Google(1) above

Instructions for sampling color with Fireworks:

1. Open Macromedia Fireworks
2. Click "File" and open "New", then click "ok" in the New Document window that will pop up
3. in the menu bar, click on "Window", then on "Info"
4. in the menu bar, click on "Window", then on "Color Mixer"
5. if the letters HSB do not appear in the Color Mixer Window, click on the ⩛ in the top right of that box, and select the HSB option
6. Click (**and hold**) the color button (lower left side) > arrow changes to an eyedropper,
7. When cursor is in eyedropper form, move the eye dropper over the color to be sampled and release
8. Record color values for H (Hue), S (Saturation), and B (Brightness)

APPENDIX C: POST BROWSING MEASURES

Experimental Sequence

Subjects and Procedure: 24 student subjects will be recruited for this study. Each subject will have to browse a different website a day for 12 consecutive days. Each subject will be asked to go to a central web portal set up for this study, and log in using his/her unique identification number. The software will ensure that each subject is exposed to the websites in a counterbalanced order to minimize order effect.

SCREEN 1:

Welcome to the study!
As explained during the introduction session, we would like you to browse one website every day, for the next 12 days. Each day, the computer will randomly present you with the name of the website you must visit, and this will be your "website of the day."

Your task will be to browse your "website of the day" as thoroughly as possible, so that you get a fair idea of the contents of the website, and how much you like the website. Remember, you will be asked some questions about the website later, so be sure to fully explore the "website of the day." You may buy products offered on the "website of the day" if you wish, but if you do so, you (and not the study organizers) are responsible for paying for it.

When you start browsing the website of the day, you will see that a "Finished Browsing" button appears on the top right hand corner of your computer screen. Click on this button only when you are finished browsing the website, and are ready to answer questions about the website.

NEXT

Note to Developer: *Insert an "Are you Sure You Want to End this Browsing Session?" dialog box to guard against mistaken clicking of the Finished Browsing button. Also, ensure that the navigation buttons on the browser are kept as simple as possible.*

SCREEN 2:

Please enter your Participant Number for the study here: _____ and then click on the button below.

- Your participant number is your <LastnameStudentID>. You can look up your participant number on the card given to you in the introductory session. If you have misplaced your card and cannot remember your participant number, send an

email to the Research Assistant, Sonomi Oishi (oishiso@yahoo.ca) and she will email you your participant number.

SUBMIT

SCREEN 3:

Hi _____,

Today you are asked to visit:
www.godiva.com (LINK NOT ACTIVE)

Before you start browsing this website, we would like to ask you a few questions. Please click NEXT to answer these questions. After you finish answering these questions, you will go to www.godiva.com and start your browsing.

NEXT

SCREEN 4:

Note: Link each website to a product category (e.g. godiva to chocolates).
Please answer the following questions by selecting appropriate numbers on the scales. Note that you have to answer all the questions before you can proceed. Also, note that there are no right or wrong answers, and we are simply interested in your own personal opinions.

How much pleasure does using or consuming chocolates typically give you?

Very little pleasure 1 2 3 4 5 6 7 Very intense pleasure

How frequently do you purchase and/or consume chocolates?
Not at all Frequently 1 2 3 4 5 6 7 Very Frequently

How familiar are you with different types of chocolates?
Not at all Familiar 1 2 3 4 5 6 7 Very Familiar

How knowledgeable are you about chocolates?
Not knowledgeable at all 1 2 3 4 5 6 7 Very knowledgeable

Have you ever visited www.godiva.com?
☐ Never
☐ Yes
If Yes: ☐ In the last week ☐ In the last month
☐ In the last 6 months ☐ More than 6 months ago

NEXT

Error Found: You have omitted important information on the previous screen. Please go back and provide the needed information.

SCREEN 5:

Thanks.

Now you are ready to start browsing your "website of the day," which is www.godiva.com. Please make sure your cell phones and beepers are turned OFF before you start browsing, so that you can give the website your undivided attention.

Please click on the link below to start browsing this website.
www.godiva.com (LINK ACTIVE)

NEXT

SCREEN 6:
Think back to your visit to the website you just browsed i.e. www.godiva.com. Then answer the following questions by selecting appropriate numbers on scales.

To what extent did this website:

	Not at all						**Very much**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Please all of your senses	1	2	3	4	5	6	7
Give you a sense of escape	1	2	3	4	5	6	7
Enable you to forge bonds with others	1	2	3	4	5	6	7
Make you look at things differently	1	2	3	4	5	6	7
Make you appreciate what is good in human nature	1	2	3	4	5	6	7
Give you a variety of emotions	1	2	3	4	5	6	7
Engage many of your senses	1	2	3	4	5	6	7
Provides you with a challenge	1	2	3	4	5	6	7
Enable you to enjoy social relationships	1	2	3	4	5	6	7
Give you warm simple feelings	1	2	3	4	5	6	7
Keep you deeply involved	1	2	3	4	5	6	7
Allow you to test your skills	1	2	3	4	5	6	7

NEXT

SCREEN 7:

Think about how you felt when you were browsing www.godiva.com, and then answer the following questions by selecting appropriate numbers on the scales.

While browsing this website, I felt

	Not at all						**Very much**
Frustrated	1	2	3	4	5	6	7
Enthusiastic	1	2	3	4	5	6	7
Angry	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Irritated	1	2	3	4	5	6	7
Anxious	1	2	3	4	5	6	7
Stimulated	1	2	3	4	5	6	7
Tense	1	2	3	4	5	6	7
Impatient	1	2	3	4	5	6	7
Calm	1	2	3	4	5	6	7
Relaxed	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7
Content	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Elated	1	2	3	4	5	6	7
Loved	1	2	3	4	5	6	7
Cared For	1	2	3	4	5	6	7
Warm-Hearted	1	2	3	4	5	6	7
Accomplished	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Self-Confidant	1	2	3	4	5	6	7
Guilty	1	2	3	4	5	6	7
Shameful	1	2	3	4	5	6	7
Regretful	1	2	3	4	5	6	7

NEXT

SCREEN 8:

Think back to your visit to the website www.godiva.com and then answer the following questions by selecting the appropriate numbers on the scales.

How would you rate the overall quality of the website <www.godiva.com>?

Very Poor *Excellent*
1 2 3 4 5 6 7

How would you rate the quality of the web site <www.godiva.com> on the following dimensions?

Speed of Loading:

Very Slow *Very Fast*
1 2 3 4 5 6 7

Quality of Graphics:

Very Poor *Excellent*
1 2 3 4 5 6 7

Ease of Use:

Very Difficult to Use *Very Easy to Use*
1 2 3 4 5 6 7

Organization of Information:

Very Poorly Organized *Very Well Organized*
1 2 3 4 5 6 7

Enjoyment:

Not at all Enjoyable *Very Enjoyable*
1 2 3 4 5 6 7

NEXT

SCREEN 9:

How much time did you spend browsing the website www.godiva.com?

Very Little Time *A Lot of Time*
1 2 3 4 5 6 7

NEXT

SCREEN 10:

Without looking at your watch, please estimate the amount of time (in minutes) you spent browsing the website www.godiva.com. Type in your estimate below.

_____ Minutes

NEXT

SCREEN 11:
What are the top three things that stand out in your mind about the website www.godiva.com? (Type in your responses below).

1. _____
2. _____
3. _____

NEXT

SCREEN 12:
In previous studies, respondents similar to you told us that they could recognize four different types of pleasures that they felt while browsing different sites.

- **Sensory pleasures** arise from things that predominantly stimulate some or all of your body's senses;
- **Emotional pleasures** arise from feelings triggered by objects, events or people that move you;
- **Social pleasures** arise from various aspects of your relationships with others;
- **Intellectual pleasures** arise from the appreciation of objects, events, or people that present a high degree of complexity and/or challenge.

If you had to choose one type of pleasure you felt the most when you were browsing www.godiva.com, which one would it be? (**Tick ONLY one**)

❑ Sensory ❑ Social
❑ Emotional ❑ Intellectual

NEXT

SCREEN 13:

* Please answer the following questions by selecting appropriate numbers on the scales.

While browsing the website www.godiva.com, I was:

Not at all Involved 1 O O O O O O O 7 Very Involved

Concentrating Very Hard 1 O O O O O O O 7 Not Concentrating at All

Paying a Lot of Attention 1 O O O O O O O 7 Paying Very Little Attention

How attractive was the overall look of www.godiva.com?
Not at all Attractive 1 O O O O O O O 7 Very Attractive

If you came across www.godiva.com while browsing the internet, how likely is it that you would stay for a while?
Not at all Likely 1 O O O O O O O 7 Very Likely

The brand advertised in www.godiva.com is:
Not at all Useful 1 O O O O O O O 7 Very Useful
Very Bad 1 O O O O O O O 7 Very Good
Not Likable at all 1 O O O O O O O 7 Very Likable

How likely are you to buy the brand advertised in www.godiva.com in the near future?
Not at all Likely 1 O O O O O O O 7 Very Likely

How much information about the brand was presented in www.godiva.com?
Very Little Information 1 O O O O O O O 7 A Lot of Information

How likely is it that you would visit www.godiva.com again in your free time?
Not at all Likely 1 O O O O O O O 7 Very Likely

How likely are you to recommend www.godiva.com to a friend?
Not at all Likely 1 O O O O O O O 7 Very Likely

Did the website www.godiva.com have a "search" function? Yes ___ No ____
<If yes> Did you use the search function? Yes ___ No ____

Did you buy anything on www.godiva.com on your visit today? Yes ___ No ____

If you had to pick one reason you might return to www.godiva.com in the future, which one of the following would it be? (Tick ONLY one box):

- ❑ To purchase something
- ❑ To have some fun
- ❑ To satisfy my curiosity
- ❑ To collect information
- ❑ To pass time, no real purpose

NEXT

SCREEN 14:

* Would you like to send the link to the website www.godiva.com to a friend? If so, click on the 'Send to Friend' button below, and you will be prompted to enter your friend's email address and a short message to your friend.

If you do not want to send the link to a friend, click on the Next button.

SEND TO FRIEND (EMAIL APPLET - *record sent/not send*)

NEXT

SCREEN 15:

* Would you like save the link to the website www.godiva.com in a Favourites Folder? We will email you this Favourites Folder at the end of the research study.

Click on the Add to Favourites Folder button below to save www.godiva.com in your favourites folder.

ADD TO FAVORITES FOLDER (*We record: name of website + yes/no*)

If you do not want to save www.godiva.com in your favourites folder, click on the Next button.

NEXT

Would you like to receive an email whenever there is new information on the website www.godiva.com?

If want to receive email updates, please click on the Email Update button below

EMAIL UPDATE (*We record: name of website + yes/no*)

If you do not want to receive email updates, click on the Next button.

NEXT

* Would you like to receive a monthly newsletter from the website www.godiva.com?

If want to receive a monthly newsletter, please click on the Monthly Newsletter button below

MONTHLY NEWSLETTER (*We record: name of website + yes/no*)

If you don't want to receive a monthly newsletter, click on the Next button.

NEXT

Visit 1-11 Ends Here:
Sign-out Screen:
This is the end of the survey for today.
Thank you, and please come back tomorrow to continue the study.

SCREEN 16:

Visit 12:

Congratulations, you are now finished with the entire study.

Thanks for participating, and have a great day!

Auto Tracking during browsing task:
(a) Total browsing time
(b) Subject's responses to interactive sections in the website (e.g., comment boxes...)
(c) Number of website levels drilled down by the subject
(d) Number of different website screens seen by the subject
(e) Number and type of website colors seen by subject
(f) Amount of time spend by subjects looking at price information (i.e., $ screens).
(g) Would you like to forward this website to (i) a friend? (ii) yourself?
(h) Series of GIF pictures (every two seconds + at the beginning of a new screen).
   - ⇨ For subjects
   - ⇨ For coders (*note: coders can choose websites + do not have to answer questions*).

Reminder to Subjects

The research assistant will use an auxiliary application that will help her track subject participation. This application will need the Participant Number, Email address, and Phone number of each subject as input. With this input, it can contact the study database to compile a participation history of each subject. Research assistant will use the email function of the application (and phone if necessary) to follow up laggard subjects.