Customer Retention and Unplanned Purchases on the Web

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IS-99-010

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October 1999

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ABSTRACT

The explosion of business to consumer electronic commerce creates new challenges for companies to design electronic systems and interactions that retain customers and increase sales. This exploratory study examines the impacts of select system design and other variables that can influence customer intention to return and the number of unplanned purchases made in an online store. We find that both the level of perceived control and the shopping enjoyment experienced by *new* web customers can increase their intention to return. However, *repeat* customers do not seem to be influenced by either perceived control or shopping enjoyment in terms of their intention to return. We also find that an engaging web store design that utilizes value-added search mechanisms and presents a positively challenging experience can increase the customers' perceived control and enjoyment. Our results also indicate that product involvement is less important to new customers as opposed to repeat customers but the more often customers return to a web store the more their shopping enjoyment is determined by their product involvement. Finally, our study shows that neither perceived control nor shopping enjoyment have any significant impact on the number of unplanned purchases made by customers. Our results deepen our understanding of the consumer online shopping experience and suggests the need for the design of systems which increase the user's perceived control to encourage repeat use of online stores.

Keywords: Electronic commerce, consumer behavior, customer retention, unplanned purchases, web customers.

ISRL categories: GB03, GB01, AD05, HD01, GB02

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INTRODUCTION

The World Wide Web (WWW, web) has evolved dramatically in six years from a medium for sharing simple hypertext documents to a complex medium used for entertainment, education, research, and commerce. Early on it became clear that the web had some major advantages that made it highly attractive for commercial use: cheap and instantaneous communication with global customers; customization of communication and marketing to individuals; and instantaneous distribution of information products (Burke, 1997a; Peterson et al., 1997). According to Forrester Research, online retail spending is projected to reach almost $120 billion by the year 2003 (McQuivey et al., 1998). Still, the web remains a rather poor medium compared to the physical world since it doesn't use the sense of taste, smell, or touch and technology limitations restrict its ability to fully stimulate the sense of vision and hearing.

Companies that sell on the web share similar concerns with traditional companies regarding their customer base: how to attract customers, how to get customers to buy their products, how to get customers to return to their stores, in this new medium. Answering these questions poses new challenges for researchers and businesses. It requires the integration of multiple disciplinary perspectives: information systems, marketing and psychology. Researchers are only beginning the process of integrating across disciplines in the study of electronic commerce.

A number of marketing researchers have begun to study electronic commerce and have begun to hypothesize the likely impacts on the Internet on marketing (see for example, Novak et al., 1998a, 1998b; Alba et al., 1997; Burke, 1997a, 1997b; Peterson et

al., 1997; Hoffman and Novak, 1996; Berthon et al., 1996a, 1996b; Quelch and Klein, 1996; Burke et al., 1992; Quelch and Takeuchi, 1981). There have been, for example, predictions of a slow growth of non-store marketing (Quelch and Takeuchi, 1981), speculations on consumer search behavior on the web (Peterson et al., 1997; Burke, 1997a), and discussions on the implications of the globalization of marketing on the Internet (Quelch and Klein, 1996). Some preliminary empirical research has uncovered some of the unique characteristics of marketing in the electronic medium and its effects on consumer behavior. There are, for example, indications that traditional marketing promotions are not always successful in on-line commerce (Maignan and Lukas, 1997). In a survey of customers of 87 web sites, SurveySite Rice (1997) found the most important customer considerations driving return to a web site were the quality of content and the enjoyment of the shopping experience. However, few marketing studies can provide guidelines for system designs that increase customer loyalty or unplanned purchases.

Similarly, Information Systems researchers are also examining user behavior in online environments. Jarvenpaa and Todd, (1997) and Clawson, (1993) found convenience, power, and control lead consumers'/users lists of important benefits from on-line shopping. Lohse and Spiller (1998) found that small marketing promotions online had no effect on traffic or sales. O'Keefe and McEachern (1998) are examining the design of decision support and recommender systems for online commerce.

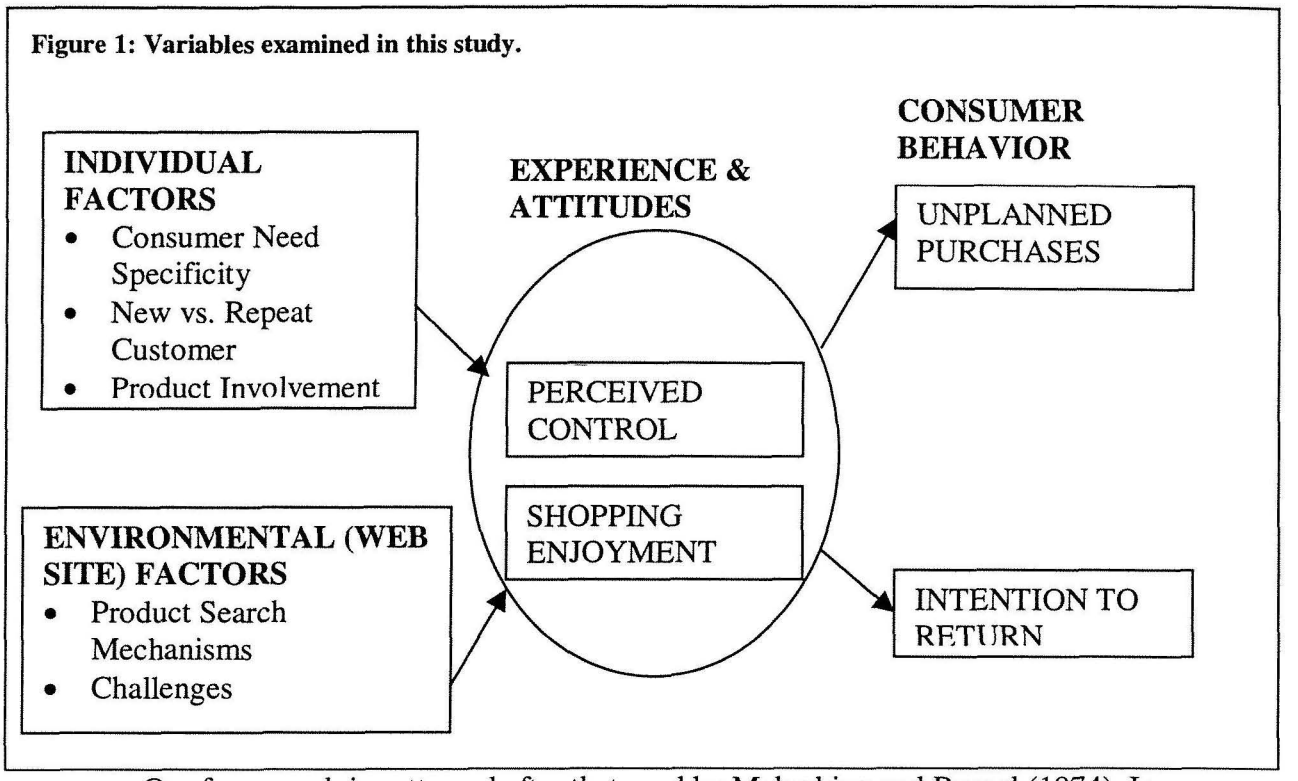
This exploratory study builds on emerging information systems and marketing research to examine the factors that lead to increased consumer loyalty and unplanned purchase online. This research investigates a model we developed to specify how system

design and other variables in online environments interact to shape user behaviors. Our study focuses on two outcome variables desirable in online commerce: the customer's intention to return to the particular web site and the number of unplanned purchases by a customer. We also include two attitudinal factors that we believe can impact our dependent variables: the level of perceived control and the shopping enjoyment experienced by consumers using a web store. Finally, we examine two sets of variables that may have an impact on the attitudinal variables of our study and, therefore, consumer behavior on the web. The first set includes individual consumer factors, i.e. consumer need specificity, new vs. repeat customers, and product involvement, and the second set system characteristics of the web-based store, i.e. the organization of product information and search mechanisms and other variables. We believe that these two sets of variables and their interaction can significantly influence the consumer experience and attitudes which then in turn can have a strong impact on consumer intention to return as well as the number of unplanned purchases made. Indeed a key contribution of this paper is the systematic exploration of system design and online purchase behavior.

STUDY FRAMEWORK

See Figure 1 for an overview of the variables this study investigates.

Figure 1: Variables examined in this study.



Our framework is patterned after that used by Mehrabian and Russel (1974). In their study of environmental psychology, the authors used a similar framework where a combination of environmental and individual characteristics influence three primary emotional responses that, in turn, have an effect on a person's behavioral responses. The three primary emotional responses used by Mehrabian and Russel (1974) are Pleasure, Arousal, and Dominance. In our framework, we examine Enjoyment, which can be seen as equivalent to Pleasure, and Perceived Control, which can be seen as equivalent to Dominance. Since Arousal deals with more physical sensations such as being jittery, sluggish, relaxed, and so on, we felt that it was not as relevant to the experience of web customers. We therefore did not measure it in our study.

Below we present our model of key relationships between variables, hypotheses, and the deployment of an on-line survey instrument to investigate our hypotheses to the

customers of a web-based video rental store. We then discuss the results of our survey and conclude with a look at the limitations of our research and future directions.

DEPENDENT VARIABLES:

As firms develop online retail strategies, they confront the challenges of designing online interactions that drive up: a) unplanned purchases and b) customer intention to return.

Unplanned Purchases

While customers often enter a store planning to make specific purchases they often end up making unplanned purchases. Unplanned purchases provide tremendous profit opportunities for firms. Stern (1962) identifies four types of unplanned purchases:

1. Pure impulse: These are made for purely hedonic reasons, and are usually characterized by: a) Spontaneity, b) Power, compulsion, and intensity, c) Excitement and stimulation, and d) Disregard for consequences (Rook, 1987).
2. Reminder effect: The customer needs a certain product but forgets to plan for it. An in-store stimulus reminds him to make the purchase.
3. Suggestion effect: The customer reacts to a marketing promotion for a new product by purchasing that product.
4. Planned impulse: The customer visits a store with the intention to buy but without having any specific product(s) in mind.

Strategically placed marketing promotions and displays, at the register or throughout a store, can increase unplanned purchases and significantly increase overall sales (Inman et al., 1990). For example, placing related products together, i.e. snacks and soda, can lead customers to buy products they did not initially intend to buy. In the

physical world, unplanned purchases and especially pure impulse buying is strongly determined by the time and money available for shopping, enjoyment of the shopping experience, the level of impulse buying tendency, and consumer exposure to marketing promotions (Beatty and Ferrell, 1998;Assael, 1992). On the web, customers can have unprecedented levels of control over what they see and what they do. The availability of search engines, intelligent agents, recommender systems, and the nature of the web browser as a user-friendly, easy-to-control application has helped give web consumers considerable power (Baty and Lee, 1995; Hoffman and Novak, 1996). This increased control means that consumers have more choice over the material they view and the advertising and marketing communications they are exposed to (Draft, 1992; Rust and Oliver, 1994; Shell, 1994; Raman and Leckenby, 1995). Since most web companies allow customers to go directly to their products without being exposed to marketing promotions, the effect may be a reduction in unplanned purchases (Burke, 1997a).

This effect has been documented in some recent studies. Lohse and Spiller (1998) found that small marketing promotions had no significant effect on traffic and sales. Raman (1997) found that web users would quickly skip material that on the surface appeared uninteresting, such as a marketing promotion, and only spent time on that which they perceived as interesting. A third study by SurveySite (Rice, 1997) found that the most important consideration determining whether customers would return to a web site was the quality of content. Customers demanded relevant and non-frivolous content, indicating again their possible intolerance for marketing promotions and advertisements. As unplanned purchases are a key driver of profit, understanding the factors driving these purchases are crucial.

Customer Intention to Return

Ensuring that customers return is one of the primary goals of almost all companies and the same applies for web-based companies. The insights that repeat customers provide to a company can result in new capabilities to be applied to other customers (Pine et al., 1995). Similarly, the longer customers are retained by a company the more profitable they become due to "increased purchases, reduced operating costs, referrals, price premiums, and reduced customer acquisition costs" (Reichheld and Sasser, 1990).

Rice (1997) found that customers are significantly less likely to return to a specific web site if they did not have an enjoyable experience. In a survey by Yahoo Store (http://store.yahoo.com), a store-hosting service, over 85% of stores received fewer than 10% of their orders from repeat customers (Anonymous, 1998). In other words, very few customers of those stores returned for a second purchase after buying for the first time. There are three possible theories about store loyalty (East, 1997):

1. Resource constraints: Store loyalty is due to the lack of consumer resources such as time or money. This constraints can be reduced on the WWW through provision of better search tools and greater convenience to consumers.
2. Non-shopping lifestyle: Store loyalty is the result of the lack of consumer interest in shopping due to other commitments or personality differences. These customers tend to always shop from the same stores as a result of inertia rather than loyalty.
3. Discretionary loyalty: According to this theory, people choose to be loyal to large stores which offer one-stop shopping such as department stores due to convenience.

Based on the above, store loyalty for web-based companies can decrease because consumers no longer have to spend substantial amounts of money or time for transportation from store to store. They can buy from any company available on-line while sitting in front of their computer. Also, discretionary loyalty is no longer necessary. The center for one-stop shopping is now the customer's computer where switching from one company to another is a trivial act. For consumers who dislike shopping, consumer loyalty on the web may not decrease significantly since even the small switching costs on the web can prove too much for them. All of these suggest the design of satisfactory experiences will be crucial to store loyalty.

Indeed, for those customers who view shopping as a chance for getting out, socializing, and having fun (Morris, 1987), a simply functional web store can be unappealing. If the customers do not have the opportunity to participate in the activities that make shopping an intrinsically enjoyable experience, such as socializing with other customers or salespeople, window shopping, or touching the goods, they might return to the more enriching and enjoyable physical world. Thus in our study we look at the effect of the consumer shopping experience on their intention to return to a web-based store.

MEDIATING VARIABLES

Given the challenges of web retailing we expect two attitudinal variables to impact the levels of return visits and unplanned purchases. We expect the level of perceived control and the shopping enjoyment experienced by consumers who use a web-based store are critical mediating variables between design variables and individual factors.

Consumer Control

Consumer resources are traditionally considered to be important determinants of the consumer decision process. One scarce consumer resource is time and particularly leisure time available for shopping (Engel et al., 1990; Quelch and Klein, 1996). At the same time, another consumer resource, the cognitive information-processing capability, has remained constant and limited (Engel et al., 1990; Miller, 1956). For customers who shop on the web, there is also a much greater availability of information on products and services from anywhere in the world and from sources other than the product seller.

Based on a survey of web consumers, Jarvenpaa and Todd (1997) found that convenience is the most important thing to on-line customers. The respondents listed time pressure as the primary reason for seeking convenience and indicated that effort reduction and convenience were the primary reasons for shopping online. Similarly a survey by Clawson (1993) found that consumers want "control, convenience, and customization" . We believe the combination of less time available for shopping, limited human cognitive resources for information processing, and an explosion of information on the web has led to customer demands for more control, less effort, and higher efficiency during shopping.

Web-based businesses have responded to the desire for customer control and convenience by designing systems to enable consumers to easily find what they need, learn more about it, and quickly purchase it. For example, internal search engines, hierarchical classifications of company products and services, and intelligent agents have become popular in web-based commerce to support users need for control in accessing information. Sites offer quick, automated purchasing through "one-click" buying and the use of shopping carts. All these site features result in web customers enjoying higher levels of control and convenience (Baty and Lee, 1995; Hoffman and Novak, 1996). In

this study, we examine how specific system design factors can impact the consumer's perceived control and thus affect consumer behavior.

Shopping Enjoyment

Shopping can go beyond an utilitarian experience of fulfilling product/service needs. It can be a process used to alleviate loneliness, eliminate boredom, fulfill fantasies, or escape from everyday life (Morris, 1987). Shopping can even be an intrinsically enjoyable experience (Forman and Sriram, 1991) and the level of enjoyment of the shopping experience can be an important determinant of consumer behavior (Blakney and Sekely, 1994). Jarvenpaa and Todd (1997) found the online shopping was positively and significantly related to both shoppers' *attitudes* towards shopping on the web and to shoppers' *intentions* toward shopping on the web. Similarly Eighmey (1997) found that the most important dimension in the perceptions of users of commercial web sites was enjoyment of the experience.

Shopping online is a fundamentally different experience than shopping in a physical retail store. One major point of difference deals with 'store atmospherics' (Engel et al., 1990). This term is used to describe the physical aspects of a store such as the colors, music type, music volume and tempo, layout of products, and so on. Store atmospherics can have a direct effect on customer mood and behavior (East, 1997). For web-based businesses, store atmospherics are at best limited to the confines of a computer monitor that usually displays only two-dimensional pictures and text. Even with the addition of three-dimensional images and musical accompaniment, web stores today cannot fully simulate the ambiance of a physical store. In the competition between click and mortar,

the system design of the e-tailing experience must compensate for the loss of traditional in store atmospherics.

Flow Studies

Like marketing researchers, the constructs of perceived control and enjoyment have also been investigated in the context of user attitudes and drivers of system use. Particularly researchers have investigated these constructs in the context of *flow*. The founder of flow, Mihaly Csikszentmihalyi (1975, 1975, 1988) has called it "the holistic sensation that people feel when they act with total involvement." Two of the main components of flow are the sense of perceived control and enjoyment that people feel when they are involved in an activity.

Trevino and Webster (1992) found that flow - partly measured as perceived control and intrinsic enjoyment - was positively related with computer system user attitudes, communication effectiveness, and quantity of communication. Webster, Trevino, and Ryan (1993) found that flow - measured as in the previous study - was positively related to perceptions of flexibility and modifiability of the software the subjects were using. Flow was also positively related to more experimentation in the use of the software as well as with actual and expected computer use. Ghani and Deshpande (1994) also examined flow in the context of individuals who used computers in their daily work and found that flow had a significant impact on exploratory use of the computer which in turn had a significant effect on the extent of computer use.

More recently, Novak et al. (1998b) have introduced the concept of flow in the study of online marketing and have tested a structural equation model for flow using an online survey of web users. They found that skill was a significant antecedent of flow but

only indirectly through perceived control. Also, challenge was an antecedent of flow through arousal. Focused attention was also found to be a significant antecedent to flow. Overall, the authors found that the construct of *playfulness* (Webster and Martocchio, 1992) can be an important indicator of flow since it is predicted by the antecedents of flow (skill, challenge, and focused attention) and it leads to the consequences of flow (positive experience, exploratory behavior, and greater expected web use).

The prior flow literature finds both high perceived control and high enjoyment can positively impact the use of computer mediated environments. We hypothesize the same for online shopping. Specifically we expect that a more positive shopping experience where customers experience high levels of perceived control and enjoyment will increase those opportunities for exposure to marketing promotions and unplanned purchases. Hence we hypothesize:

H1a: Perceived control will be positively related to unplanned purchases.

H1b: Shopping enjoyment will be positively related to unplanned purchases.

Similarly the flow literature shows that flow is positively related to expected future computer interactions (Webster et al., 1993). This suggests the hypotheses that perceived control and enjoyment are positively related to expected return visits to the web site. Indeed Rice's(1997) survey of 87 web sites found that an enjoyable visit was a key determinant of whether a customer would return to the site. Similarly Jarvenpaa and Todd (1997) found the shopping experience is positively and significantly related to shoppers' attitudes toward shopping on the web and to shoppers' intentions toward shopping on the web. Thus we hypothesize:

H2a: Perceived control will be positively related to consumer intention to return.

H2b: Shopping enjoyment will be positively related to consumer intention to return.

INDIVIDUAL AND SYSTEM ENVIRONMENT FACTORS

Individual Factors

Building on prior marketing and information systems research, individual consumer factors can impact online shopper attitudes and behavior. We examine three factors: new vs. repeat customer, consumer need specificity, and product involvement.

New vs. Repeat Customer

We hypothesize the distinction between new customers and repeat customers to a web-based store can impact our dependent variables. While for new customers, the novelty of the web site can be very important, for repeat customers this may not be the case. Other factors such as service, product availability, and personal involvement (discussed later) may be more important to a repeat customer. In our study, we will control for the number of past customer visits at a web-based store and examine its effect on consumer attitudes and behavior.

Consumer Need Specificity

Another individual factor we examine is the *specificity* of the consumer needs. In other words, we are interested in how well a consumer knows what she wants when she visits a store. Our study deals mainly with commodities so that product complexity is low allowing us to more easily measure the specificity of the consumer need.

A commoditized product can be characterized by a set of attributes. A book, for example, may be described by its title, author, edition, publisher, subject matter, etc. The

specificity of the customer's need for a product is defined as the number of such attributes with fixed or limited range of values that the customer uses in her product search. Some product attributes are functionally dependent on others. For example, the author name is functionally dependent on the book title since for a specific title there is only one (or more) *specific* author(s). So, if a customer has a fixed value for the title of the book when she is searching, her need specificity will be high since other attributes that are functionally dependent on the title will also have fixed values. The resulting set of alternative products after the customer has applied her search criteria is similar to evoked sets (Howard, 1963; 1994) and consideration sets (Roberts and Lattin, 1997) as described in the marketing literature.

Product Involvement

Product involvement and its measurement have been the source of considerable research and debate since the Personal Involvement Inventory (PII) was first proposed and analyzed by Zaichkowsky (1985). While there have been many variations on the definition of Involvement (Zaichkowsky, 1985; Greenwald and Leavitt, 1984; Mitchel, 1981; Park and Mittal, 1985), it is generally accepted that involvement is: a) a person's motivational state, i.e. arousal, interest, drive, toward an object where b) that motivational state is activated by the relevance or importance of the object in question (Mittal, 1989). While much has been written about involvement with an advertisement (Andrews and Durvasula, 1991) as well as with the purchase process (Slama and Tashchian, 1985), we will concentrate only on involvement with the product itself.

System Environment Factors

We study two system environment factors: a) the mechanisms available at web-based stores to provide information to customers and enable them to search for products or services, and b) the challenges a web store presents to the customer.

Search Mechanisms

Site search features such as internal search engines, hierarchical classifications, and intelligent agents give web customers high levels of control and convenience (Baty and Lee, 1995; Hoffman and Novak, 1996). A survey by Internet World of 163 leading Web design firms (Gardner, 1998), asked "Which features have you used to keep users at your clients' sites or to improve the user experience there?" A staggering 89% of respondents said they used some type of search mechanism to lengthen and enhance their user experience. In our study we examine the effects of different types of search mechanisms on the consumer experience.

There have been few attempts to create a framework or typology of web-based customer decision-support systems (CDSS) (O'Keefe and McEachern, 1998). For the purposes of our study, we are only interested in the CDSS available for product information search that includes all search features available on a web-based store. In order to enable us to better match certain search mechanisms with different customers, we have developed a preliminary framework of search mechanisms used in web-based stores. The framework is defined on two dimensions.

The first dimension deals with the type of information used by the search mechanism. Our framework has two types of information: non-value-added and value-added. Non-value-added consists of all information that is publicly available. This is usually objective information that describes the product sold. When dealing with books,

for example, such information can be the book title, its author, and the type of book (mystery, children's, etc.).

Value-added consists of all information that is generated by the web store and is not publicly available. In the book example, this would include in-house book reviews, subjective book categories (e.g. tearjerker, brain twisters, etc.). Value-added information can be generated from the company (e.g. weekly bestseller lists of products), from a third party (e.g. hyperlinks to online reviews of products by independent parties), or from the customers themselves (e.g. customer reviews available to other customers). Whatever its source, value-added information can influence the search for products and services by customers. We know that external search may be undertaken simply because it's fun, e.g. window shopping (Bloch, Sherrell, and Ridgway, 1986). Also, customers often engage in ongoing search, i.e. activities that involve information gathering independent of specific needs or purchase decisions (Bloch, Sherrell, and Ridgway, 1986). For such customers, value-added information can prove interesting and helpful. The existence of such value-added information at a commercial web site can be an important incentive for people to shop on-line (Jarvenpaa and Todd, 1997), and provide a key source of differentiation.

One of the most important consumer benefits of the web is the access to more information and the ability to enhance consumer decision making through complex, non-linear, and non-directed queries (Hoffman and Novak, 1995). This enhanced decision making process is often achieved through the use of value-added information on the products and services available. On the other hand, a common finding is that consumers engage in little external pre-purchase search even for items which are major (Beatty and Smith, 1987; Engel et al., 1990; Newman, 1977). So, it is possible that the abundance of

value-added information may be more of a nuisance to customers than of help. In our study, we try to determine when and for which customers, value-added information can have a positive effect on customer attitudes and behavior.

The second dimension of our framework deals with the specific technology used by the search mechanism. We identify three groups of search technologies: a) Keyword-type search engines, b) Categorical classification, and c) Other technologies, i.e. recommender systems, product reviews. Figure 2 shows our framework and some examples of search mechanisms in each cell. We believe that matching different types of search mechanisms with different types of customers can affect their attitudes about the shopping experience and their behavior.

Technology Type

Information Type	**Keyword Type**	**Categorical Classification**	**Other**
Value-Added	Search by keywords (categorical indexing)	Gift suggestion categories	Recommender systems Top sellers Product Reviews
Non-Value-Added	Search by keywords (full text indexing)	Product Categories	New Products

Figure 2: A framework for classification of web-store search mechanisms.

Challenges

Along with individual skills, the challenges presented by an activity are considered the most important predictors of flow (Csikszentmihalyi, 1975; 1990, Ghani et al., 1991; Trevino and Webster, 1992; Webster et al., 1993; Ghani and Deshpande, 1994; Hoffman and Novak, 1996; Novak et al., 1998b). We do not believe that web skills

can affect a web customer's experience and behavior. By the time a customer is buying on the web, she has developed the basic skills necessary for that activity. However, the challenges presented by a web based store could be an important factor in determining the customer's experience. Using a web site for purchasing products can prove to be a challenging activity in the sense that customers are required to use their skills and abilities in navigating the web site, learning the interface, processing information, and making decisions to find and buy the right products or services. In our study we will look at how challenging shopping on the web can be and how that can affect the consumer attitudes about that experience.

Impact of Individual and System Environment Factors on Mediating Variables

An important consumer factor in our framework is *product involvement* (Zaichkowsky ,1985) which is generally defined as: a) a person's motivational state, i.e. arousal, interest, drive, towards an object where b) that motivational state is activated by the relevance or importance of the object in question (Mittal, 1989). A consumer's involvement with the product(s) sold by a web-based company can have an effect on the consumer attitudes and behavior. Involvement, measured simply as importance of the web to the consumer, also had a strong effect on the primary antecedents of flow, namely skills, challenges, and focused attention (Novak et al., 1998b).

We study the effects of involvement in interaction with other consumer and web site factors on the experience of perceived control and enjoyment. The first factor is the number of past visits by the consumer to a certain web-based company. When a consumer visits a web site for the first time he is more likely to experience enjoyment independent of his involvement with the product sold. The novelty of the new web store,

the initial exploration of its offerings, and the initial challenges of finding what he needs could lead to the consumer enjoying his visit regardless of his involvement with the product. However, the more often a customer returns to a web store the more his involvement will have an effect on the customer's experience. The higher the customer's involvement with the product, the more likely he will be to continue experiencing shopping enjoyment while visiting the web site. We do not expect to see a relationship between involvement and perceived control.

H3: As the number of past customer visits increases, the level of customer involvement with the product will have a stronger positive relationship with the customer experience of shopping enjoyment.

In general we expect that the more enriched and satisfying the shopping experience is, the more likely customers are to experience high levels of perceived control and enjoyment. The use of value-added search mechanisms is one way to make the shopping experience more fulfilling. The use of a value-added search mechanisms such as a "Gift Suggestions" feature can be both fun and helpful.

H4a: The use of value-added search mechanisms will be positively related to perceived control.

H4b: The use of value-added search mechanisms will be positively related to shopping enjoyment.

Similarly, we expect that if customers perceive their shopping experience as challenging they will also have similar positive experiences. In the *flow* literature, challenges can increase flow when paired with equal skills (Csikszentmihalyi 1975, 1975, 1988). Since we assume that web customers already possess the necessary skills, albeit

basic ones, to use a web based store, we expect that higher challenges will increase their level of perceived control and enjoyment.

H5a: The level of challenges of a web-based store will be positively related to perceived control.

H5b: The level of challenges of a web-based store will be positively related to shopping enjoyment.

We believe that consumer need specificity can influence the type of search mechanisms used by customers. More specifically, we expect that customers with high need specificity will use non-value-added search mechanisms more often. Since they know exactly what they want, they would like to be able to get to it without having to go through a lot of subjective or tangential information. Customers with low need specificity will opt for value-added search mechanisms that can help them better define their needs.

H6: Customer need specificity will be positively related to the use of non-value-added search mechanisms and negatively related to the use of value-added search mechanisms.

We expect that matching consumer needs with the right type of product search mechanism can have a strong effect on their experience. For customers with non-specific needs, using non-value-added search mechanisms can be very frustrating. Since these customers do not know exactly what they want, they often do not know quite how to look for it either. Search mechanisms such as product name based search engines can be frustrating and not helpful. However, using value-added search mechanisms can be both useful and enjoyable for customers with low need specificity.

On the other hand, we expect that customers with highly specific needs who use non-value-added search mechanisms will experience high perceived control. Since they

know exactly what they want, being able to get to it without having to go through a lot of subjective or tangential information will give them a sense of control over their actions. However, these consumers will not have as much opportunity to become involved with the web site and their length of stay will probably be minimal. The result will likely be that they do not experience high levels of shopping enjoyment.

H7a: For customers with low need specificity there will be a positive relationship between perceived control and the use of value-added search mechanisms.
H7b: For customers with low need specificity there will be a positive relationship between shopping enjoyment and the use of value-added search mechanisms.
H7c: For customers with high need specificity there will be a positive relationship between perceived control and the use of non-value-added search mechanisms.

STUDY DESIGN

The web-based company: Kozmo.com™

We chose Kozmo.com™ (http://www.kozmo.com)[1], a purely web-based video rental and delivery store, as our survey site. It only operated in New York city at the time of the experiment. Customers can access its movie collection from the company web site and can rent or purchase movies on-line. The movies are physically delivered within one hour to the customer. The movies can be returned at selected drop-off boxes throughout the city or can be picked up for a nominal fee. The company web site features various

[1] After the completion of our study, Kozmo.com™ changed the look of its web site. However, the functionality of the web site remains basically the same.

search mechanisms, some keyword-based and some using value-added information, to help the customers find movies.

We recognize that the customers' intention to return can be influenced by many factors including the quality of the product, the availability of the products at the store, the quality of the service, etc. In our study we wanted to eliminate as many of this alternative explanations as possible. Videos are a commodity where product quality across stores varies only slightly. Kozmo buys its movies directly from the movie distributors and therefore their quality is uniformly good. Also, the quality of service has been consistently high since the company opened. There have been no serious customer complaints about video delivery problems. Finally, at the time of the survey, Kozmo only rented movies on video, eliminating any possible effects on consumer attitudes and behavior based on different types of products[2].

Sample

An on-line questionnaire was made available to the customers of Kozmo.com™. The company was relatively new (less than a year old) at the time we deployed the survey and it had a customer base of about 1,300 which was growing rapidly. Ideally, we wanted to distribute the questionnaire to a random sample of customers. However, due to the small customer base and the rather lengthy survey we decided to make the questionnaire available to all customers. We realize that this resulted in self-selection among the respondents but we felt that the advantage of a larger response rate outweighed the disadvantages of self-selection among the subjects. Also, we feel that since the survey

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[2] Kozmo.com™ also rents movies on DVD but we did not consider customers who only wanted to rent DVDs in our sample. Kozmo has diversified and grown since our study.

was made available to all customers who reached the checkout page, we were providing the questionnaire to a very large portion of the entire population of our subjects instead of just a representative sample. As an incentive, we gave a free video rental to each customer who fully answered the questionnaire.

Survey Deployment

The questionnaire was developed as a web-based form and was deployed on the company web site. When a customer reached the checkout page, he was presented with a banner that said "Free Rental. Click Here." If the customer clicked on the banner, he was taken to the survey where he was informed that filling out the survey would get him a free video rental. Customers were only allowed to fill out the survey once, and they had to complete the entire survey in order to receive the free rental. The on-line survey was coded so that customers who had already filled it out could not access it again and customers who did not fill out the whole survey could not submit it. The contents of the form were automatically saved in a database. The subjects remained anonymous with only a unique ID number used to identify them.

The survey questions asked about the consumer's experience during that specific visit. Such methodology encourages reports that are more valid in contrast to reliance on recollections of past experiences that can be highly unreliable. Also, the web-based form was simple and took a short time to complete. Before deploying the questionnaire, we pre-tested it. Pre-test subjects took less than 10 minutes to complete the questionnaire and did not encounter any problems with either the user interface or question comprehension. A description of the questionnaire can be seen in the Appendix.

RESULTS

After rejecting some subjects who used Kozmo.com only to rent DVDs we ended up with a sample size of 332 responses. We then tested our hypotheses using two sets of sub-samples: new vs. repeat customers and low need specificity vs. high need specificity customers.

New vs. Repeat Customers

For this analysis we split our sample into two parts. The first part includes only new customers to Kozmo.com, i.e. no previous visits to the web store, and the second part includes all the other customers who have visited Kozmo.com at least once before. There are 50 new customers in our sample and 282 repeat customers. We tested hypotheses H1 to H3 and H5 to H6 separately for both new and repeat customers.

To test whether enjoyment and perceived control had any impact on unplanned purchases we performed an ANOVA of enjoyment and perceived control on unplanned purchases for the two sub-samples of new and repeat customers. The variable for unplanned purchases takes only two values: 0 if customers rented as many movies as they originally intended and 1 if they rented more. Table 1 and Table 2 show the results of the ANOVAs that were insignificant leading us to reject H1a and H1b.

Table 1: ANOVA of perceived control and enjoyment on unplanned purchases for new customers.

	F-statistic	Significance
Enjoyment	1.217	0.275
Perceived Control	0.190	0.665

Table 2: ANOVA of perceived control and enjoyment on unplanned purchases for repeat customers.

	F-statistic	Significance
Enjoyment	0.028	0.867
Perceived Control	0.019	0.889

We used linear regression models to test hypotheses H2 to H3. Figure 3 shows the

New Customers:

RETURN = $4.541^{**} + 0.211^{*}$ CONTROL + 0.166° ENJOYMENT

N=48, $R^2 = 0.359$, F=12.618 ($p<0.01$)

where ** $p<0.01$, * $p<0.05$, $^{\circ}$ $p<0.1$

Repeat Customers:

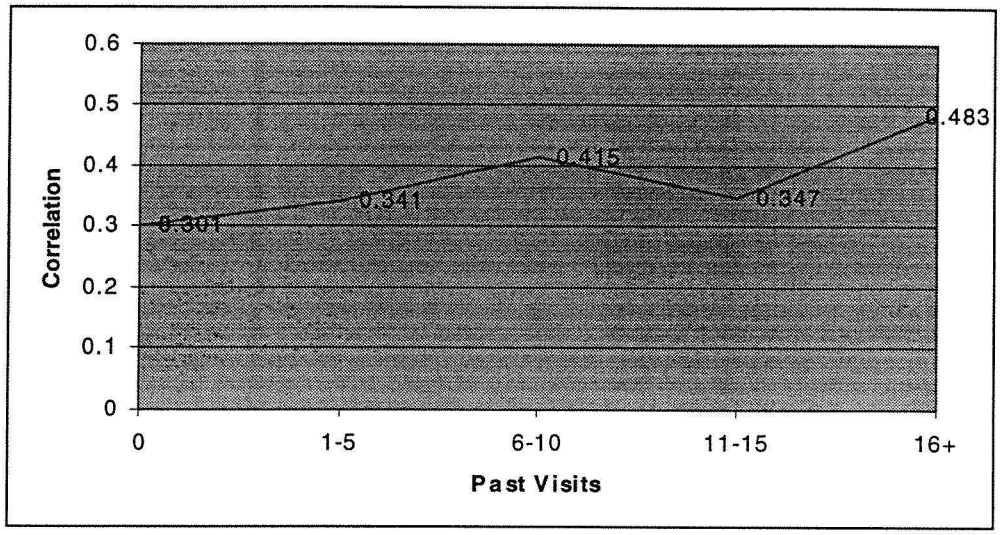
RETURN	Frequency	Percentage
1	7	2.5
2	2	0.7
5	2	0.7
6	25	8.9
7	246	87.2
Total	282	100.0

Figure 3: Determinants of customer intention to return

linear regression results for new customers with customer intention to return (RETURN) as the dependent variable and perceived control (CONTROL) and enjoyment (ENJOYMENT) as the independent variables. After removing two outliers for the new customer sub-sample, the results indicate support for H2a and weaker support for H2b. A look at the distribution of the RETURN variable for repeat customers shows that a linear regression is unnecessary. As Figure 3 shows, 96.1% of repeat customers gave a response of 6 or 7 on a 1-7 scale to the question of whether they would return to the web site.

Therefore, H2a and H2b are not supported for repeat customers since virtually all of them stated that they will definitely return.

In order to test H3 we split our sample further into five groups based on the customers' "tenure" at the web site. The five groups consist of new customers (no prior



CORRELATION = $0.266^{**} + 0.037^{\circ}$ GROUP
N=5, $R^2 = 0.663$, F=5.9 (p=0.093)
where GROUP={1,2,3,4,5} and ** $p<0.01$, * $p<0.05$, $^{\circ}$ $p<0.1$

Figure 4: Correlation between Involvement and Enjoyment based on number of past visits (All correlations are at least significant at the p<0.05 level).

visits), those with 1 to 5 prior visits, 6 to 10 prior visits, 11 to 15 prior visits, and 16 or more prior visits. For each group, we calculated the correlation between product involvement and shopping. Figure 4 shows the results graphically. The upward linear trend seems to support the hypothesis other than an unexpected dip in the fourth group. A linear regression with the correlation as the dependent variable and a dummy variable (with values 1 to 5) for the group as the independent variable shows that the slope is borderline significant (see Figure 4). In other words, we see some support for the

hypothesis that as the number of past customer visits increases, the level of customer involvement with the product will have a stronger positive relationship with the customer experience of shopping enjoyment.

In order to test the effects of individual customer factors and environmental factors on the level of perceived control and enjoyment experienced by customers we performed two linear regressions. Figure 5 shows the results of a regression with perceived control (CONTROL) as the dependent variable and involvement (INVOLVEMENT), challenges (CHALLENGE), value-added search mechanisms used (VALUE), and non-value-added search mechanisms used (NONVALUE) as the independent variables. For new customers, H4a is supported and H5a is weakly supported. For repeat customers neither hypothesis was supported as the regression was not significant (R^2=0.021, F=1.509 p=0.2).

New Customers:
CONTROL = 3.662^{**} + 0.134 INVOLVEMENT + 0.247° CHALLENGE + 0.473^{**} VALUE – 0.063 NONVALUE

N = 50, R^2 = 0.212, F = 3.033 (p = 0.027)

Repeat Customers:
Regression non-significant
N = 282, R^2 = 0.021, F = 1.509 p = 0.2

where ** p<0.01, * p<0.05, $^{\circ}$ p<0.1

Figure 5: Determinants of perceived control.

Figure 6 shows the results of a similar regression but with enjoyment (ENJOYMENT) as the dependent variable. For new customers, H4b and H5b are both strongly supported. For repeat customers, we find H4b strongly supported and H5b

weakly supported. Involvement is also a significant factor in this regression as would be expected from the results of H3.

New Customers:
ENJOYMENT = 2.82** + 0.152 INVOLVEMENT + 0.349** CHALLENGE + 0.393** VALUE + 0.334 NONVALUE

N=50, R^2 = 0.383, F=6.974 ($p<0.01$)

Repeat Customers:
ENJOYMENT = 1.986** + 0.501** INVOLVEMENT + 0.102° CHALLENGE + 0.181** VALUE - 0.039 NONVALUE

N=282, R^2 = 0.197, F=17.033 ($p<0.01$)

where ** $p<0.01$, * $p<0.05$, ° $p<0.1$

Figure 6: Determinants of shopping enjoyment.

Low vs. High Need Specificity

Table 3 shows the correlations between customer need specificity and the use of value-added and non-value-added search mechanisms for all customers. The results indicate partial support for H6 since need specificity is negatively correlated with the use of value-added search mechanisms but not significantly related to the use of non-value-added search mechanisms. This may be because almost everyone uses non-value-added search mechanisms anyway(such as New Releases which is available on the initial page of Kozmo.com™).

Table 3: Correlation between need specificity and use of search mechanisms

	Value-added	Non-value-added
Need Specificity	-.211**	.053

** $p<.01$

In order to test H7a, H7b, and H7c we split our sample into high and low need specificity groups. We analyzed subjects with the lowest need specificity, i.e. had no initial preference in any movie attributes (140 subjects), and subjects with the highest need specificity, i.e. knew exactly which movie they wanted to rent (117 subjects). We then ran the same regressions as the ones for H5 and H6. The results, shown in Figure 7, indicate that only H7b was supported.

Low Need Specificity:
ENJOYMENT = $2.454^{**} + 0.420^{**}$ INVOLVEMENT + 0.167^{*} CHALLENGE + 0.264^{**} VALUE - 0.168 NONVALUE

N=140, $R^2 = 0.195$, F=8.177 ($p<0.01$)

Regression for CONTROL was not significant
N=140, $R^2 = 0.067$, F=2.413 ($p=0.052$)

High Need Specificity:
Regression for CONTROL was not significant
N=117, $R^2 = 0.090$, F=2.786 ($p=0.030$)

where ** $p<0.01$, * $p<0.05$, $^{\circ}$ $p<0.1$

Figure 7: Determinants of enjoyment and perceived control by need specificity.

DISCUSSION OF FINDINGS

Our findings indicate that the experience and behavior of new customers is very different than that of repeat customers. We found that for new customers, i.e. those who never visited the on-line store before, both the level of enjoyment from their experience and the level of perceived control are important factors that determine their intention to return. However, in our study, repeat customers seem to have made up their minds about returning to the web site and became loyal customers. This finding has serious implications for web-based companies in the highly competitive environment for e-

commerce. Given increasing customer acquisition costs, companies must find the right formula of design and functionality that will increase their customer retention and loyalty. We have found that a web-based company must provide **both** an enjoyable experience and high levels of perceived control to new customers to entice them to return. So, system functionality that increases perceptions of control and engaging design that increase perceptions of enjoyment are important to new customers. In the case of Kozmo.com™, once new customers decide to return to the store, they became very loyal customers. As neither perceived control nor enjoyment drive intention to return and unplanned purchases for repeat customers within the product category, further work needs to be done to identify how system design can increase the sale per be customer.

Our results on unplanned purchases were especially surprising. While we expected that an enjoyable experience and high levels of perceived control would lead to more unplanned purchases (rentals in our case) by the customers, we found no such relationship. It seems that customers are not influenced by enjoyment or perceived control to rent more videos than originally intended. Perhaps if other categories of products were cross-sold with movies these factors would be of import. Indeed, today Kozmo.com increasingly cross-sells other related impulse goods such as ice-cream and candy. Further research is critically required to understand how online environments can be best designed to increase unplanned purchases within and across different product categories.

Our results also show that customer product involvement can have a serious impact on their perceived experience. For new customers, involvement is less important and the novelty of the web site can prove sufficiently interesting even if the customer is

not as involved in the product or service. However, for repeat customers, novelty quickly wears off and product involvement is a more important factor in increasing shopping enjoyment and impacting the customer experience. This relationship seems to increase as the number of past visits to the web store increases.

As far as what other factors can increase the levels of perceived control and enjoyment experienced by customers, we found that there are once again differences between new and repeat customers. For new customers, we found that the use of value-added search mechanisms as well as how challenging the web site is to the customer can increase both perceived control and enjoyment. The positive effect of value-added search mechanisms and challenges on enjoyment is also significant for repeat customers though that is not the case for perceived control.

The above results provide important guidelines on how web-based companies should provide information to support customer search for products and services. Our findings suggest that investments by firms in constructing unique content for their web site to support customer search, and providing multiple search mechanisms that make the product search a positive challenge can increase enjoyment and control. This is especially important to new customers, suggesting these investments can be a key source of service differentiation among companies and of importance to making new customers return to the web site.

As expected, our results also show that value-added search mechanisms are more useful when customer needs are the less specific. In other words, the less certain customers are about what they are looking for, the more they will use search mechanisms that provide value-added information. Furthermore, the effect of using value-added

search mechanisms on a customer's attitude and experience differs based on the customer's need specificity. Customers with the lowest need specificity, i.e. who do not know what they want or what they are looking for, experience higher levels of enjoyment through the use of value-added search mechanisms. As the WWW allows real time assessment of user needs, firms should design systems to be responsive to different levels of need specificity.

This study is not without limitations. First, there is a possible problem of self-selection. Since we did not randomly assign the survey to subjects, it is possible that our results are biased toward customers who are willing to answer surveys. We decided to make the survey available to all customers because the customer base of Kozmo.com at the time was rather small (about 1300) and we wanted to get enough responses for our results to be analyzed. Also, since the survey was made available to all customers who reached the checkout page, we were providing the questionnaire to a very large portion of the entire population of our subjects instead of just a representative sample.

A second limitation is the fact that our results may be limited to customers of video rental stores. This is a common risk faced by empirical studies with single companies. On the positive side, since the product, i.e. movies on video, is a commodity, we minimized the effect of variables such as product quality and price. We also minimized the effect of service quality since the service of Kozmo.com™ is fairly uniform in quality due to its centralized location in Manhattan. This way we are more confident in the relationships between the attitudinal variables and the customer behavior variables. It is interesting to note that the top selling products on the web are commodities such as books, music CDs, and software.

Overall, we believe this preliminary provide some important insights into online consumer experience and implications for system design. As electronic commerce is fundamentally about selling electronically, it is critical for information systems researchers to understand how their system design impacts and increases the efficiency of sales processes. This preliminary study develops a model of consumer behavior to address the above question and test some factors hypothesized to impact customer retention and unplanned purchases.

Electronic commerce is empowering consumers through better information access and communications in unprecedented ways. As customer switching costs go down to a few mouse clicks the challenges of attracting, retaining and realizing profits from customer interactions increase. We believe carefully designed studies integrating marketing perspectives on consumer behavior and information systems research on user behaviors will be critical to understanding consumer behaviors online. Indeed, each of the major variable categories considered in our study (i.e., individual consumer factors, web site design factors, consumer/user attitudes and decision processes and behavior) present additional opportunities for marketing and information systems researchers. Further research on these topics from a multidisciplinary perspective will be critical to the effective design of systems that strategically influence customer behavior.

APPENDIX: THE QUESTIONNAIRE

Unplanned Purchases: We used two questions to determine the number of unplanned purchases, defined here as the number of unplanned video rentals. The first question asked how many movies the customer intended to rent when she visited the video store

on that day. The second question asked how many movies she actually rented on that day. The difference between the two numbers is the measure of unplanned purchases.

Need Specificity: This is a multiple item question where subjects could select as many items as they wanted. Each item lists a selection criterion that customers could have used in their search for a movie. The item "I had no preferences..." has the lowest specificity and was given a value of 0 and the item "I knew exactly..." has the highest specificity and was given the value of 5. In all other cases, the sum of the items checked (with possible values between 1 and 4) was the measure of need specificity.

Number of past visits: Customers self-reported how many times they had visited the video store in the past on a 5-point Lickert scale (ranging from "never" to "16+ times"). This was used to distinguish new from repeat customers.

Search mechanisms used and search mechanism preferred: A multiple response question was used to determine which search mechanisms the customer used. Due to the lack of resources, we depended on self reports rather than web log files to determine which search features customers used.

Shopping Enjoyment: In order to measure shopping enjoyment we adapted two of the items used by Ghani et al. (1991) to reflect the customer experience at the video store.

Perceived Control: We measured perceived control by using an item used by Ghani et al. (1991). We adapted it to reflect the customer experience at the video store.

Challenges: We measured the challenges presented by the video store web site as self-reported by the customers with three items adapted from Novak et al. (1998a).

Involvement: In this study we take a uni-dimensional view of involvement, albeit a reduced one, while also considering one of its often mentioned sub-dimensions as an

important antecedent. McQuarrie and Munson (1992) reduced the Personal Involvement Inventory (PII) from 20 items to 10 and identified two important dimensions of involvement: interest and importance. The authors do not take a stand on whether these two are both facets or antecedents of involvement. For the purpose of this study, we agree with Schneider and Rodgers (1996) who consider interest (measured with items such as Dull...Neat, Boring...Interesting) to be an antecedent and importance (measured with items such as Important...Unimportant, Relevant...Irrelevant) a facet or measure of involvement. We, therefore, used the 10-item Revised Personal Involvement Inventory (RPII) proposed by McQuarrie and Munson (1992).

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