

## **Atmospherics in the Cyber World**

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### **Abstract**

The field of study which addresses the store environment and its impact on retail sales is known as atmospherics. Store atmospherics impact emotional reactions, which in turn affects consumers' attitudes towards the store. Ultimately, these elements have direct influence on the popularity and success of the store. This paper explores how the ideas of retail atmospherics may be applied to website designs. In the 12 plus years since the introduction of commercialism to the Internet (1994) the nature of atmospherics has only been limitedly addressed. Physical stores provide the yardstick (and context) for studies on retail environmental atmospherics. However, there are substantial differences in the way that people behave in the physical and in the virtual world. This paper includes an investigation of the attributes in the physical world (Brick and Mortar) which can be directly translated to the web and offers the Cyberspace Atmospherics Model (CAM) as a method to facilitate design decisions.

### **Introduction**

Retailers spend a great amount of effort and resources focusing their activities on attracting consumers, building relationships, and enticing people to make purchases (Babin and Dardin, 1996). Most retailers are not capable of surviving, let alone flourishing on just a single sale. Consequently, anything that a retailer can do to improve the consumers' experience will help solidify a relationship between the consumer and the retailer. In this regard, the store's layout (lighting, ambiance, and associated environments) has long been recognized as being important in creating shopping atmosphere and the right ambiance for consumers. Boris Emmet (1930) found that department stores focus a great deal of attention and resources on providing consumers with the utmost in ornate and exotic shopping environments. Kozinets et al. (2002) indicates that the importance of store environments to retailers' success is unsurpassed.

The field of study which addresses the store environment and its impact on retail sales is known as atmospherics. Kotler (1973-4, p.50) defines atmospherics as "the conscious designing of space to create certain effects in buyers that enhance the purchase probabilities." Donovan and Rossiter (1982) indicate that store atmosphere impacts emotional reactions, which in turn affects consumers' attitudes towards the store. They found that atmospherics had an effect on consumer spending, enjoyment, engagement, amount of time within the store and the likelihood of returning.

The present state of research examining store environments draws its theoretical underpinnings from environmental psychology and the Stimulus-Orgasmic-Response (S-O-R) paradigm (Turley and Milliman, 2000). The S-O-R paradigm is used to explain and present evidence pertaining to numerous environmental cues (e.g., color, lighting, music, crowding, and fragrance) and the related effects on buyers' internal states and responses. Basically, "store atmospherics" are the elements of a store's environment that have the ability to influence consumers' moods and behavior (Swinyard, 1993). Donovan and Rossiter (1982) first empirically tested the S-O-R framework. The atmospheric elements were operationalized as "stimuli," individuals' (or shoppers') emotion changes as "organism," and the resulting behaviors as the "response."

A variety of metrics have been used to try to capture the effect of atmospherics on consumers (Donovan and Rossiter, 1982; Havlena and Holbrook, 1986). The de facto standard is "*P-A-D*" - Pleasure, Arousal, and Dominance (Mehrabian and Russell, 1974). The P-A-D framework specifies individual reactions toward environment stimuli along the three prescribed dimensions. These responses determine the desire to remain within or leave a setting and the willingness to spend money while there (Bennett, 2005, p. 133). In the literature, the three dimensions are commonly used to represent the "organism" aspect of the S-O-R framework

- a) The Pleasure aspect entails whether individuals perceive the environment as enjoyable or not enjoyable.
- b) The Arousal dimension assesses how much the environment stimulates the individual. Playing slow instrumental music, for example, may result in slower customer movement and might attribute to a decrease in arousal.
- c) The Dominance element relates to whether individuals feel dominant (in control) or submissive (under control) in the environment. Mehrabian and Russell (1974, p.19) indicate dominance is contextual that "an individual's feeling of dominance in a situation is based on the extent to which he feels unrestricted or free to act in a variety of ways."

Empirical evidence shows that the pleasure and arousal dimensions are related to the consumer reactions toward environment stimuli in both retail and non-retail environments, but the effect of the dominance dimension is unclear (Russell, 1980; Yalch and Spangenberg, 2000). For example, Donovan and Rossiter found that shopping behaviors were related to only the pleasure and arousal dimensions. Even with the inclusion of the dominance dimension, Yalch and Spangenberg found mixed results for the relationship of shopping time and the three dimensions. As a result, the dominance is either considered a minor factor or is simply not measured (Russell, 1980).

"Flow" is another aspect of atmospherics. According to its founder, Mihaly Csikszentmihalyi (1977, 1988) flow is "the holistic sensation that people feel when they act with total involvement" – the point when everything comes together. Flow happens when a person engages in an activity with total involvement, a high degree of concentration, and great interest. According to Chen, H., Wigand, R. and Nilan, M. (2000), the characteristic of being in a "flow state" within a web environment, includes a high level of focus on the interaction, a loss of self-awareness, absorption in the immediate task, and intense interest in the activity. The "flow state" is pleasurable and causes individuals to feel they are fully in control (Bennett, 2005, p. 135). Bennett indicates that flow is important even within charitable websites, where images are often less than pleasurable, "the viewers still can become engrossed with a site's subject matter and

begin to share the charity's passion, commitment, and desire to make a difference in a troubled world" (p. 136).

Research has shown that store environmental attributes have an affect on "stickiness"- the ability of the store to attract, entice, and encourage customers to purchase products initially as well as repeatedly (Sharma & Stafford, 2000; Fiore, Yah & Yoh, 2000). From the retailers' vantage, the more consumers visit and the more time they spend at the store; the more they will be exposed to the organization's products, services, and messages (Korgaonkar and Wolin, 1999). Korgaonkar et al. found that the amount of time users spent online to be positively correlated to individuals' intention to shop online. Intentions are important. They are an indicator of the consumers' willingness to: 1) stay in the store, 2) repurchase, 3) purchase more in the future, and 4) recommend the store to others (Baker et al. 2002; Hightower, Brady and Baker 2002; Macintosh and Lockshin 1997). Sanchez (2001) puts it into perspective: "stickiness = relationships = loyalty = revenues."

A weak point in the traditional retail environment is that it is relatively fixed. It takes great effort to rearrange product layouts to keep them fresh. It is literally impossible to match a physical store's environment to the taste of each potential consumer. Further, stores no longer compete in just local markets; today retailers also need to be concerned about their Internet competitors. To compensate, many physical retailers have adopted a "reactive" strategy, with the introduction of their own sites, or a "proactive" strategy of doing business solely through Internet channels (e-tail) (Turban, 2006).

### **E-Tail vs. Physical Environment**

E-tail is not catalog sales and there are clear differences. Some of the differences include: the method consumers use to do product comparisons, product delivery time, supplier delivery cost, supplier facility cost, and personal/social interactions (Alba, Lynch, Weitz, Janiszewski, Lutz, Sawyer, and Wood, 1997).

While the physical store atmospherics is very inflexible and expensive to manipulate this is not true with e-tailing (selling over the Internet). The Internet permits businesses to present products in a way that are deemed interesting to individual viewers based on each user's specific preferences. These preferences can be adjusted allowing the users to update their own profiles, or by company monitoring of user behavior (what sites are visited, which terms are searched for, and what pages have been visited) though intelligent techniques. These techniques range from "mining" the merchant's web server logs to monitoring through intelligent software agents.

Another important difference includes the ways consumers are exposed to the products – images on the Internet are not limited in quality or quantity based on traditional economic production cost. Therefore, with little cost to the retailer, a variety of images can be presented and the images can be manipulated using color, brightness, enlargement, rotation, as well as additional product description, research, and information on use and maintenance.

Within the traditional physical environment, organizations have tremendous control on which elements they chose to use and how they present them. The organization can use this power to overwhelm the senses if they so desires; this can not be said about the online environment.

Internet based sales (e-tailing) offers some tremendous advantages; however, it suffers from the high cost of customer acquisition, low customer commitment, intense price pressures, time lags caused by delivery, and uncertainty due to the invisibility of the other party. Further, consumers might allow the online organization to have 17 inches of viewable (monitor) space surrounded by potentially hundreds of “real world” distractions, which can take the consumer out of “the flow”.

The use of the Internet for commercial purposes has led many practitioners to discover that the concept of customer (or user) focus is difficult to achieve. Just the concept of defining a customer is often troublesome. Is a customer someone that visits a website, or someone that makes a purchase online? What if information was gathered online to make a purchase at a physical location? Thus, the traditional focus toward the customer is difficult at best, causing many developers to view their sites in terms of users or visitors rather than customers.

The consumer brings to the website many cultural and psychological dimensions. Keen and McDonald (p.19) indicates that an important aspect of creating customer wealth and value requires that an organization’s website should “provide information and interaction in an intuitive and flexible manner.” The site must demonstrate “a focus on designing the customer experience rather than on the customer being subordinate to the company’s administration and operations.”

### **Forms of Cyber Atmospheric**

Physical stores provide the main context for studies on retail atmospheric. Because e-tail stores differ meaningfully from physical stores, e-tail atmospheric is a distinct research area.

“Eroglu, Machleit and Davis (2001, 2003) laid the conceptual foundations for the extension of the S-O-R paradigm to e-tailing. They provided empirical support for significant effects of site atmospheric on shopper attitudes, satisfaction, and a variety of approach/avoidance behaviors” (Sautter, Hyman and Lukošius, 2004, p.14). An important often ignore construct is that online shoppers operate simultaneously in two distinct environments:

- 1) the physical environment in which human-computer interaction occurs, and
- 2) the online store environment that is virtually experienced.

The challenge is to integrate knowledge of these online atmospheric effects into a broader model of shopping behavior. Marketing exchanges in virtual stores bridge two distinct environments:

- 1) the online store environment, the website aesthetics, navigation, flow, and
- 2) the operator’s personal space where s/he sits when interacting with a website. While this dual environment directly and indirectly affects the way consumers respond to shopping experiences, the organization only has control of the virtual component. Consumers can view the same website at two distinct locations (one at work and one at home) and have two entirely different experiences.

### **Signage**

The physical stores need to be concerned with things such as: restaurants, restrooms, elevators, product location, exits, etc. Signage for these features is very important. In the virtual store it

could be argued that symbols are more important than that of the physical store, because shoppers do not have physical cues or access to store clerks for help. Signage has been expanded in a virtual store to promote navigation, to enhance site credibility, and sponsor integrity/reputation. Additionally, graphic brand marks from certification and rating services; such as eTrust, Verisign and BizRate, are used to indicate their stamp of approval on certified sites. Credibility can also be derived from design elements such as affiliate linkages (Putch, 2001).

Eroglu, Machleit and Davis (2001, 2003) proposed that, like in the offline context, eRetailers create an atmosphere that affects shopper reactions. They developed and tested a “P-A-D” online model which confirmed that online atmospherics play a similar role to that of offline atmospherics in a physical store. Childers et al. (2001) and Mathwick, Malhotra and Rigdon (2001) confirm that “although utilitarian qualities of online shopping (ease and convenience) are important predictors of attitudes and purchase intentions, the hedonic aspects of the Internet play at least an equal role in determining these factors” (Broekhuizen and Jager (2003, p12-13).

### **The Senses**

The use of environmental attributes available for web designers are severely limited compared to the traditional physical store. Elements which include a sense of smell, taste, and touch are not yet commercially viable. Typically the online environmental attributes that can be manipulated are sight and sound. Most atmospheric elements that are second nature in a traditional physical environment can not be used on the web. While three dimensional objects can be simulated, this often means trading resources such as (download) time or screen “real estate”. Another technique that seems to work well in the physical environment – product density (how close together items are located) does not necessarily translate well onto the web.

### **Interfaces**

The online “interface” impacts the consumers’ desire and willingness to shop. The interface relates to the customers sense of being in the store. The more comfortable and connected the customers feel the more willing they are to be involved. Consequently, “know thy customer” becomes the mandate. To the virtual retailer, this means that they need to pay attention to “consumer desires and behavior” picking a target population to aim for will not guarantee success. It has become extremely important for the virtual retailer to collect customer (viewer) information in order to incorporate their needs, wishes, and preferences in the design and development phase of the virtual store environment (Vrechopoulos, et. al, 2000).

According to Gehrke et al. (1999), the design of a web storefront is very important for customer satisfaction and constitutes a critical success factor to any online store. Virtual stores’ convenience features (layout, organizational features, ease of use) can help set customers’ expectations. In virtual store environments the user interface design is essentially the only thing linking the consumers to the retail store. As such, the success of the store depends on the interface and the underlying design issues (Lohse and Spiller, 1998).

The World Wide Web (WWW) permits users to easily gain and acquire information. Users can skim through websites, bypassing sites that fail to meet their needs or fail to capture their attention. If organizations want users to come and stay at their site, they need to make their websites “sticky.” Net lingo dictionary defines stickiness as the notion that the website has a compelling reason for users to frequently come back (<http://www.netlingo.com/>). When it comes to making a site sticky, “Content is king” (Nielsen, 1999).

### **Personalization**

Personalization, or the ability to give individualized attention, is often cited as an important driver of satisfaction in traditional service settings (Bitner, Booms, and Tetreault, 1990; Brown and Swartz, 1989). Suprenant and Solomon 1987 (p. 87) offer complex definitions of personalization that “refer to any behaviors occurring in the interaction intended to contribute to the individuation of the customer”. Studies on personalization have focused on customization of website content and shopper communications (Coner, 2003). Given the predictiveness in the retail settings, application of traditional approaches to personalization as a socially dependent construct should augment knowledge of e-tail atmospherics (Mittal and Lassar, 1996; Suprenant and Solomon, 1987).

Customers want to feel special. They do not want to be just a name or a number. They want personalization in their business interactions. In this regards, the success of new marketing campaigns, sales promotions, and customer support initiatives must focus on the customer rather than the product. In the long run, success hinges on an organization understanding its customers (Firstlogic p.1). “Technology enabled”, customers can easily be offered “full-capability” in the creation of a shopping environment based on their own preferences and wishes (Vrechopoulos et al., 2000). E-Customers have very low costs associated with a website, simply enter a new URL address, and they are on a competitor’s website (Turban, 2006). Given these disadvantages and the current competitive realities, the store (and website) environments clearly play a significant role in the differentiation of individual retailers.

### **Satisfaction**

Ho and Wu (1999) were among the first to empirically study e-satisfaction. They suggested several antecedents of customer satisfaction of the online shopping environment: including logistical support, technological characteristics, information characteristics, homepage presentation, and product characteristics. Szymanski and Hise (2000) study of e-satisfaction found that convenience, site design, and financial security were dominant factors in determining consumer satisfaction (McKinney, 2004).

### **E-Tail Atmospherics**

The entire subject of retail atmospherics is a result of the application of environmental psychology in retailing. Store atmospherics are sensory or environmental cues used to influence a consumer’s evaluation of the retail surroundings to elicit a behavioral response (Hedrick, Oppewal and Beverland, 2004). Analogous to brick-and-mortar retailing, in e-tailing, factors like website organization, server performance, product data, search options, and shopping carts have all been found to influence shopping behavior (Falk, L., Sockel, H., and Chen, K. 2003; Turban,

E., Lee, J., King, D. and Chung, H.M. 1999). Atmospheric effects include increased “visit” time (Lacher and Mizerski 1994; Yalch and Spangenberg 1990), mood (Swinyard 1993), and purchase intentions (Babin and Attaway 2000; McGoldrick and Pieros 1998). Store atmospherics encompass cues such as color, lighting, scents, sounds, layout and furnishings. Bitner (1992) proposed that consumers view the store environment as a composite of three dimensions: ambience, space/function and signs, symbols and artifacts (Hedrick, 2004).

Maintaining a consumer friendly shopping site is essential to the success of internet retailers. Therefore, it is important to understand the variables that contribute to satisfaction among internet consumers (McKinney, 2004). Two major dimensions of variables that affect shopping behavior are:

1. External variables -- window displays, entrances, etc.
2. Interior variables -- the layout and design of a store (e.g., traffic flow, allocation of floor space, layout of merchandise, traffic patterns etc.) as well as music, odor, and lighting.

External variables greatly affect store traffic and sales. Interior variables have been found to impact sales, increase time spent in the store, encourage unplanned purchases, and influence perceptions of price value. Eroglu, Machleit, and Davis (2003) categorized online atmospheric variables in two ways, high task relevant and low task relevant where:

1. High task relevancy is defined as cues that facilitate and enable consumers to achieve their goals: examples include merchandise descriptions, price, terms of sale, delivery / return policies, and pictures of merchandise.
2. Low task relevant atmospheric cues include site information not relevant to the shopping task, such as colors, borders, background patterns, typestyles and fonts, animation, music, and decorative pictures.

Store environments influence shopping behavior through mediating emotional states. The store environment contains various stimuli that can be perceived by the customer's senses. Each of the stimuli can influence a person's internal (or organism) state, which can then influence the approach or avoidance responses (Mehrabian and Russell 1974). For example, store music, colors, odor (scent), lighting, and density of merchandise among various variables can all be varied to project specific images for the intended clientele -- be it an “upscale image”, a folk image, or a college image.

Fiore & Kimle (1997) indicate that affective (mood) arousal or expression is only one of many channels through which store atmospherics influence customers. They suggest that store atmospherics can also affect consumers through sensory and cognitive channels as well. The cognitive channel, involves activities associated with understanding or creating symbolic content (Fiore, Yah and Yoh, 2000). Much of the cognitive activity which can be fostered through store atmospherics has as its foundation semiotic communication. Semiotic communication involves a vocabulary based on signs and symbols. The pervasiveness of semiotic communication as it relates to products themselves has been well documented as it leads to consumption.

Effective atmospheric elements in physical stores may be unavailable or even undesirable in the e-tailing environment. For example, the layout of the store can be approximated to the display

space on a webpage; however, the physical store layout must now be standardized and any change in either environment would require a change in the other. Ideally, e-tailing marketers have endless access to product display space by creating many web pages, but spreading products across many pages increases consumers' search cost and cognitive effort. Other examples include scents, and touch (which can not be experienced online) and face-to-face interactions (in cyberspace it is not the same as in physical stores). Therefore, plausible atmospherics for physical stores must be examined for their applicability to the online world. The section below provides an assessment of atmospherics in the cyberspace.

### **Mandated Features**

Certain features have become mandates within the cyber environment, such as:

**Ambient Conditions**, which are the “background conditions that exist below the level of immediate awareness” (Aubert-Gamet, 1997, p.29). The research typically focuses on reactions to sensory cues in physical stores. In this vein, studies of ambient conditions consider visual cues (e.g., lighting and color), auditory cues (e.g., music and noise), olfactory cues (e.g., scents), and tactual cues (e.g., temperature) (Griffitt, 1970). For virtual settings, the range of ambient conditions is constrained by current technology; specifically, only visual and auditory stimuli are now used. Even though auditory stimuli are possible in e-tailing stores, its use should be cautioned. See a more elaborated discussion on music and time below.

**Cyber-Interactivity**, which is becoming a strategic tool to improve the quality of websites for attracting users and keeping them engaged at a site. Sautter, (2004, p. 16) presents interactivity as a design characteristic of virtual store environments. Interactivity is seldom considered a one-dimensional construct. One popular conceptualization is to view it in the following five dimensions proposed in Ha and James (1998): playfulness, connectedness, reciprocal communication, choice, and information collection. Chen and Yen (2004) reported in their empirical study that the playfulness, connectedness and reciprocal communication dimensions (in increasing order of significance) were related to the quality of commercial websites.

**Usability**, the ease of use in online contexts, which has also been a primary component of usability (Swaminathan et al., 1999) or efficiency (Zeithaml et al., 2000). Usability for cyberspace concerns not only the usefulness of certain offerings (i.e., website content), but also the user interface that delivers such offerings. Shoppers want sites that are valuable and easy to use. Features that aid the users can help retain visitor interest. Although interface usability is crucial for an e-tailing site to foster a pleasant online experience, caution should be exercised when overly relying on it as the sole factor to boost online sales. Since interface usability can be easily imitated, its long-term competitive edge is less salient compared to factors, such as customer confidence in the web business and relationship services (Kotha, Rajgopal and Venkatachalam, 2004).

**Navigation**, with which “factors like website organization, server performance, product data, a search option, and shopping carts all contribute to a positive web shopping experience. Easy navigation on a website for a consumer who wishes to buy through the net is a major facilitating factor” (Sivakumar, 2003). Similar to usability, navigation is a basic requirement for a functional and well-designed e-tailing site. To some (e.g., Elliott and Speck, 2005), it is part of the usability

construct that fosters ease of use and gives e-retailers a strategic tool to lower consumers' search cost. Despite the crucial role of navigation in the quality of e-tailing sites, research has been inconclusive on its effect on sales. Ranganathan and Grandon (2002) reported that navigation structure had no significant impact on online sales, but others (such as Swaminathan, Lepkowska-White and Rao, 2003) have supported such a relationship.

**Searchability**, or the friendly search options that add to the convenience of the consumer. The search feature is used in two ways:

1. finding the site through major search engines, and
2. locating information within a site.

The design of the site and how many resources are invested in the site does not matter if users can not find the site. High placement of a site in search results from the major search engines is a strategic goal for e-retailers. Most users do not have the patience to go beyond the first several pages of search results. Chen and Sockel (2001) reported that high placement on major search engines may be influenced by playfulness and reciprocal communication features on websites. These features increase link referrals (or backward links), which is one factor that carries weight in the placement results of modern search engines, such as Google and Lycos. The other aspect of "searchability" is functionality within a website. This capability is considered equally important, because if products can not be located on a website, customers will go to another site. From a consumer stand-point the competition is just a few clicks away.

**Trust**, which early electronic commerce research (e.g., Neuman, 1996; Strader and Shaw, Gardner and Thomas, 1997) has documented that security is a major concern for most users who attempt online shopping. Online buyers are likely to lose faith in Internet security when they do not have an opportunity to examine the products, the transaction processes, and the credibility of the sellers (Chen, 1999). Trust in Internet commerce as a whole (George, 2002) and trust in target vendors (Elliott and Speck, 2005) have all been confirmed to be related to a consumer's attitude toward online purchases.

**System Response Time**, which is inversely related to computer user satisfaction (i.e., the longer the wait, the greater the dissatisfaction). Industry standard suggests that a website should load completely within 8 seconds (Falk, 2000).

### **Attracting the User**

Engaging people on the WWW can be an arduous task - various usability studies show web users to be a fickle and impatient group (Nielsen, 1997). According to the Media Metrix Jupiter December 1999 report, an "average" web user will spend less than a minute reviewing a webpage ([www.mediametrix.com](http://www.mediametrix.com)). For the most part, the Internet acts as a "pull" technology; the user goes to a website to get information. An underlining premise of the "pull" approach is that the users are capable of finding appropriate sites to obtain the information they want. In this regard, users must be able to locate a site, determine it to be of suitable value, and then have a desire to return (stickiness). To facilitate "stickiness" an organization needs to learn about the users' preferences and then relate to them with a personalized product or service. It must find a way to engage them (Yoo and Kim, 2000).

Most web browsers support graphics. Graphics can be used to enhance a website – “a picture is worth a 1000 words.” Images can also be detrimental to a site. The effects of large (or too many) graphics will slow down the display of the webpage, confuse the viewers, and dissuade the users from staying on the site. Graphics can obscure the navigation of a website, a condition that Flanders and Willis (1998) calls Mystery Meat Navigation (MMN). MMN happens when users are faced with navigational choices with no clear explanation of where a link will take them. Oftentimes, the link is not visible until the user physically moves the mouse pointer (cursor) over a clickable area on the screen.

“If you build it” is no assurance that visitors will come (Shaw, Gardner, and Thomas, 1997). Determining what to deliver through web pages is essentially an integral part of web-based projects. A vast amount of information could be relevant to a user (consumers) but delivering superfluous information can impede consumers from making good decisions (Bettman, Johnson, and Payne, 1991).

While it is clear that building the user's behavior and experience into the website is a desirable strategy; not all information or features chosen are of interest to all users (Pereira, 1999, Rosenfeld and Morville 1998). A user's behavior is partially dictated by their skills and experience. The adage is people use the things they know and understand (Krug 2000, Nielsen, 2000, Chen, Sockel, and Falk, 2003). Studies have found skills and experience to be a good indicator of user expectations (Cadotte, Woodruff, and Jenkins, 1987; Smith and Swinyard, 1983). Chen and Sockel (2001) demonstrated that features that include the dimensions of playfulness and reciprocal communication are influential to the visibility of business websites in public search engines.

Many organizations seemed to have forgotten the first rule of development, “have a goal!” The goal of a site should be decided long before a keyboard is ever touched! While presentation is important, graphics should be added sparingly and only when it adds value to the presentation and not just for the sake of “eye candy.” While there is a movement towards broadband by consumers, not everyone has it. Therefore, it is important that all graphics support the website's message.

Internet shoppers want sites that are not only easy to use but contain things that interest them. They want the site to present information in an enjoyable and easy to understand context, one that adds value to their experience (Fogarty, 2000; Eighmey, 1997).

### **Time, Music and Shopping**

Time is an important factor in retail shopping, partially because studies have shown a significant correlation between time spent shopping and the amount purchased (Isen, 1989). Also, time is argued to be as much a constraint on consumption as money. Consequently, it is reasonable to expect individuals to budget their time, including shopping times. In the end it boils down to “people simply don't enjoy waiting.”

Music in the brick-and-mortar stores is often manipulated as an environment stimulus to affect shopping time and product evaluation. The nature of music - foreground music or background music has a differential effect based on the age of the shoppers. Music also affects actual

shopping times. Individuals tend to stay longer when listening to slow music compared to no music or fast music (Milliman, 1982). The loudness of the music & song length may also make a difference. Yalch and Spangenberg (2000) reported that the relationship between store music and time spent in the store may be complicated. Individuals, who had a choice on the duration of shopping, shopped longer when listening to less familiar music. Music, however, did not have an effect on product evaluation when duration of shopping was not controlled. When subjects were listening to familiar music but were constrained by a fixed amount of time to shop, they were more likely to evaluate products. As Yalch and Spangenberg indicated, manipulating music by offering a familiar atmosphere in the hopes to increase sales may not achieve the intended effect. In a similar line of research, Sullivan (2002) reported that spending in a restaurant was not related to tempo and popularity of the music, but it was positively related to softer music. The amount of time and money spent in supermarkets were related to shoppers' degree of preference in the background music, but tempo and volume of the music did not have such an effect (Duncan, 1996). Based on the above studies, the collective effect of music on user behaviors may be mixed. Perhaps individual characteristics of music (such as liking of music, volume, and genre), rather than music in a collective way, may have a more salient effect on certain user behaviors. This effect may not necessarily be in the form of immediate sales, but may be linked to better user experience, such as satisfaction or possibility for product exploration.

In the online e-tailing environment, background music could have a very different effect on user behavior. First, background music increases bandwidth consumption. This will slow page loads and can hamper user experience, especially on low-end Internet connections (e.g., dial-up connections). Second, background music exposes a shopper's online activity to his current environment, which may possibly cause embarrassment. Unlike shoppers in physical stores, online shoppers visit e-tailing sites at their convenience. This may be during the time between meetings, short breaks at work, or even during important events. Even though the shopping may occur in a legitimate environment for an understandable reason, background music could still distract others in the same work environment. Third, some music characteristics are outside of the e-retailers' control. For example, the volume of music is typically in the hands of online shoppers. Music quality could be affected or even distorted depending on the quality of speakers on the shopper's end. Fourth, empirical findings (e.g., Abdinnour-Helm et al., 2005) suggest that background music on e-tailing sites is considered annoying and could result in low user satisfaction and low perception of ease of use. For the above reasons, e-retailers are recommended not to use background music, unless it is the target of interest for consumers.

### **CAM - A Cyberspace Atmospherics Model**

Presented to this point in the paper, though not exhaustive, has been a list of items crucial to the development of an e-tailing environment that will attract and persuade consumers (users). The Stimulus-Organism-Response paradigm, with "*P-A-D*" (pleasure, arousal, and dominance) as the description of the organism, established the behavioral framework for the discussion of e-tailing atmospherics. The forms of cyber atmospherics, e-tailing atmospherics, mandated features for cyber environments, and elements attracting the users (consumers) were detailed. In an attempt to both capture the e-tailing design elements and provide a usable tool for e-tailers, a cyberspace atmospherics model (CAM) is proposed.

CAM is constructed around four well-recognized marketing ideas:

- 1) The targeted website consumers (as identified by demographic or self-select)
- 2) The consumer's value set
- 3) The design (or atmospheric) elements of the website
- 4) Mass customization – personalization & culturalization

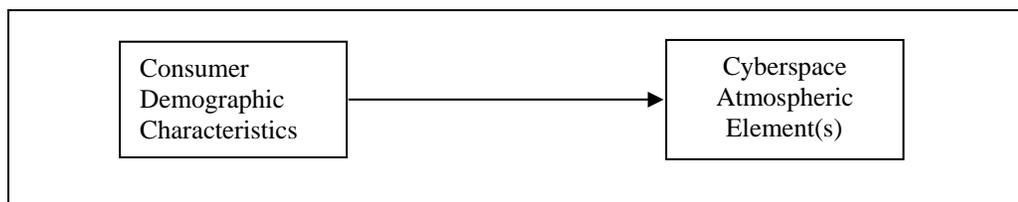
### **CAM and Demographic Characteristics of the Targeted Consumers**

One of the weak points of the traditional retail environment was that it is fixed. It was what it was, the same for everyone. Within the traditional environment, the organization had tremendous amount of control on how they presented their atmospheric elements. This gave the organization the power to overwhelm senses, if they so desired. The same can not be said about the online environment, where the customers might allow the organization to have 17 inches of viewable (monitor) space, shared with the distraction of the surroundings. Slight distractions can cause consumers to be taken out of the realm of influence.

While a horde of constraints exist for e-tailing, Internet based online sites have a power that most physical environments do not, that is they can tailor the presentation to a particular user. This ability to customize the website concurrently to different consumers via things such as the forms of cyber atmospherics, e-tailing atmospherics, mandated features for cyber environments, and elements attracting the users (what will hereinafter be referred to as cyberspace atmospherics) enhances the organization's ability to attract and benefit the users.

The classic marketing concept indicates an organization should try to satisfy the needs of customers through a coordinated set of activities. These concepts are fully compatible and applicable to e-tailing and website design. In short, the elements used in a website's design (its cyberspace atmospherics) should try to give the targeted cyberspace customer a pleasurable experience. These individuals tend to view the selected market's demographic characteristics only as a referent to decision making. To make it clear that a market's demographic characteristics need to be considered before making cyberspace atmospherics decisions, CAM uses the following scheme 1:

**Scheme 1 - Classic Approach**



Scheme 1 by itself could lead designers to consider the market to be homogeneous. This could lead designers to think that some e-tailing environmental atmospheric elements or stimuli (S) such as navigation, pictures, background colors or music will influence most people within the target group similarly. Further, this may lead to the belief that these stimuli will trigger in each individual market member's organism (O) and its pleasure, arousal, and dominance to produce an approach or avoidance response (R). CAM proposes that to determine the "right" mix of stimuli for the desired result from individual market members, designers need to look beyond demographic characteristics to focus on the market's values.

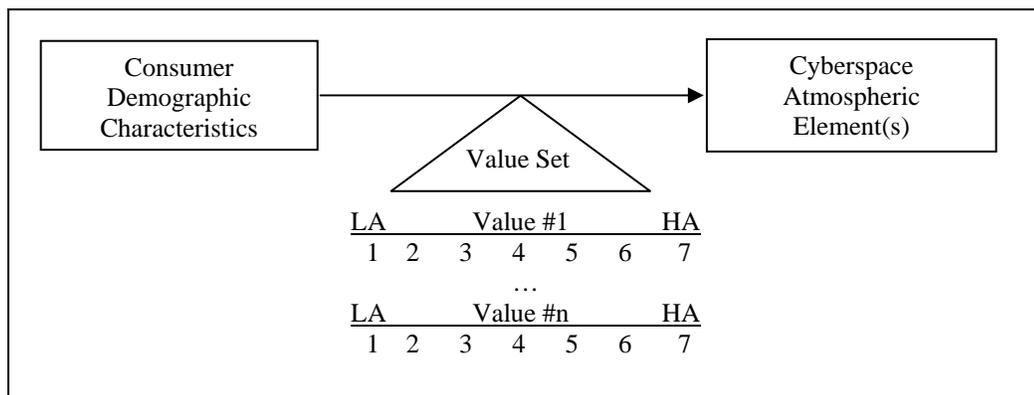
## CAM and the Value Set of the Targeted Market

The consumer brings to the website many individual cultural and psychological dimensions; especially the behavioral component called values. To capture the fact that demographic characteristics possess personality and other psychological-social factors that, in turn, have an influence on attention to, comprehension of, and emotional reaction to the cyberspace atmospheric elements, CAM incorporates values into its operational process. While consensus is yet to be reached in terms of how to measure values, there appears to be a generally accepted definition of values. Howard and Woodside (1984 p. 4) defined values in two parts enduring beliefs that:

- 1) a specific mode of conduct is personally or socially preferable and
- 2) a specific end-stage of existence is personally or socially preferable.

Vinson, Scott, and Lamont (1982) identified four ways that values may be used in marketing: market analysis and segmentation, product planning, promotional strategy, and public policy. Howard and Woodside (1984) looked at the different roles that values play in terms of extensive problem solving, limited problem solving, and routine response behavior and stated that, "values affect a buyer's recognition of a problem. Values are the broad functions common to all personalities. A value is either consciously or unconsciously a standard or criterion for guiding behavior," (p. 4), and they (1984) concluded that, "different consumers form different choice criteria according to their value systems," (p. 5). Similarly, Pitts and Woodside (1984) stated that, "values also appear to hold promise as useful market segmentation variables," (p.55). Specifically in the context of retailing, a few research projects (Allen, 2001; Erdem et al., 1999; Kim et al., 2002; Shim and Eastlick, 1998) have examined the relationship between values and attitudes and behaviors pertaining to consumers' choices of product classes, brands, store outlets, and shopping malls. CAM uses scheme 2 to depict how values may be viewed as mediating the consumer's attention, comprehension, and emotional response to cyberspace atmospheric elements.

**Scheme 2 – Approach mediated by the Consumer Value Set**



Scheme 2 informs the designer that the target market has demographic characteristics accompanied by a particular set of values that will operate in assessing cyberspace atmospheric elements. Research relating demographics and values support this scheme. As an example, a study by Crosby, Gill, and Lee confirmed earlier findings that, "there are age group differences

in values," (1984 p. 209). They concluded that, "cohort-historical, maturational, or some other age-related influence on values is present," (1984, p. 214).

Though there is no fixed list of values, CAM provides 69 values that the designer may use (see Table 1). These values are compiled from Rokeach's (1973) terminal and instrumental personal values and Hawkins, Best, and Coney's (2001) self-oriented, environmental-oriented, and other-oriented values. CAM provides the designer an ordinal continuum to select values that may be deemed to best represent the market. CAM uses a semantic differential scale with extremes from 1, meaning Low Applicability (LA), to 7 indicating Highly Applicable (HA). CAM does not set any rules for defining the meaning of a value or how the designer determines the applicability of a value to the market. Indeed, given that the meaning of a value can have inter- and intra-cultural differences this permission affords the designer the opportunity to identify unique domestic or global markets. Once a value is defined for the targeted consumer(s), the designer is to determine (by intuition, experience, or consumer surveys) the degree to which a value is applicable to the targeted consumer(s). After scaling all 69 values, clearly those values rated in the low applicable range (say 1 to 3) should be eliminated from consideration. Arguably, a risk avoiding designer may choose to lower the cutoff rating's range (say 1 to 2), while the risk taking designer may increase the cutoffs (1 to 5). In the end, the designer will have a data base concerning the values to be used in the design of cyberspace atmospheric element(s).

This scheme represents how the designer is to first identify the demographic characteristics of the target consumer(s), second assess the degree to which a value is applicable to the target consumer(s), and third recognize that the selected applicable values are to be used in designing cyberspace atmospherics.

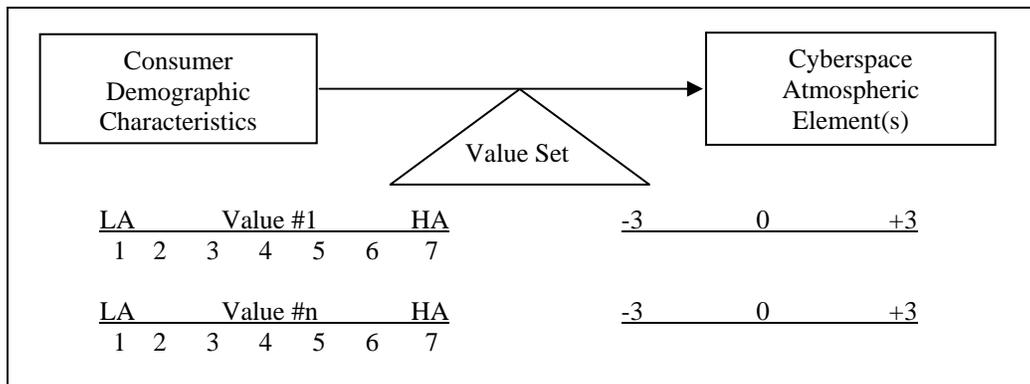
### **Recoding Consumer Value's Reaction to a Cyberspace Atmospheric Decision**

The operationalization of this aspect, of CAM proposes that successful cyberspace atmospheric decisions result from properly determining whether the applicable values of the targeted consumer(s) will respond in a favorable or unfavorable way to the decisions. This is in line with value-attitude-behavior hierarchy which proposes that within any given consumption choice situation, abstract values affect midrange attitudes that lead to specific consumer behaviors (Homer and Kahle, 1988). Relating marketing decisions to values is also in line with Reynolds and Gutman's (1984) means-ends chain research: ".....a means-ends chain is a model that seeks to explain how products or services are linked to ends, which are a person's values," (p. 156). Furthermore, the means-end chain, "offers a view of how values guide behavior by formulating a model of how values, which are very general in nature, relate to consumer choice, which is very specific," (p. 156).

When the designer contemplates the use of a specific cyberspace atmospheric element or set of elements, s/he needs to determine how each of the selected HA values might react to the element(s). Essentially, this allows the designer to put him/herself in the consumer's position and think about (and react to) the element(s) from the consumer's perspective; this is often an ignored state in marketing decision making. In this regard, CAM has the designer view each of the target consumer's values as if they are gatekeeper reading and interpreting a cyberspace atmospheric element(s) (this gate-keeping activity represents the cognitive component of behavior). CAM argues that as a designer thinks and feels from the consumer's perspective

about how a particular value might interpret or read the atmospheric element(s), intuitively the designer will come to recognize whether the value produces an acceptance, rejection, or apathetic reaction to the element(s) (the affective component of behavior). To help the designer record the affectation, CAM modifies scheme 3 by attaching to the right of each value continuum and under the cyberspace atmospheric element(s) a disposition continuum. The disposition ranges are from a strong liking (+3) to a strong disliking (-3). The center location of the disposition continuum represents ambivalence or apathy (0). Further, this approach depicts how each value performs the gatekeeping activity and has an emotional response to the element(s).

**Scheme 3 – Approach mediated by the Consumer Value Set**



Scheme 3 is the decision tool that facilitates the designer in determining final cyberspace atmospheric elements(s). CAM gives the designer a worksheet to analyze the target consumer's overall perceived response towards proposed specific cyberspace atmospheric element(s). To further the decision design, the designer can quantify the overall perceived response towards any one element or set of elements (PRa) under consideration for the website by summing the recorded disposition (D) of each value times the applicability rating of the value (V):

$$PRa = \sum (V \times D)_n \text{ where } n = \text{the total number of values selected the in the scaling process of scheme 2}$$

Given the total number of values selected (n) there will be an upper limit (assuming all value's V have a D = +3) and lower limit (assuming all value's V have a D = -3) between which PRa will fall. Though the risk taking and risk avoidance mentality of the designer will be a factor in using PRa, CAM suggests a general decision rule:

Consider any cyberspace atmospheric element(s) that has a positive PRa within 75% of the upper limit; reject any element under 75% of the upper limit.

### Discussion

Following the operational aspect provided by the CAM model allows the organization greater insight into how values can be used to select specific cyberspace atmospheric elements. Using

the overall scheme of the CAM model should allow it to be employed as a worksheet for cyberspace atmospheric decisions.

A viable organization is constantly making cyberspace decisions concerning the forms of cyber atmospherics, e-tailing atmospherics, mandated features for cyber environments, and elements attracting the users (consumers). In a number of cases, as the literature indicates, these decision-makers tend to consider one atmospheric element in isolation of other elements. Consumers seldom respond to isolated atmospheric elements. What consumers do respond to is holistic interrelationships between atmospheric elements (an interrelationship that has synergistic dimensions). The results from the CAM model are often for the entire webpage of cyber atmospherics, not just the individual elements that compose the combination. Therefore, CAM could be used to explore various interactions between and among selected cyberspace atmospheric elements.

CAM was introduced to facilitate holistic assessment and to be used as a decision making tool concerning cyberspace atmospheric elements within website designs. CAM uses a discovery approach when contemplating the processes and elements in website design. Users of websites experience each separate atmospheric element within an interrelated local set of atmospherics. This local collection of cyberspace atmospherics can be unique depending on the site. CAM allows the users to separate these interrelated cyberspace atmospherics and evaluate them. CAM also affords the website designers the opportunity to make cyberspace atmospheric decisions within the context of the sensory (seeing and hearing the elements), cognitive (the gate-keeping activity of the each value relative to the element(s), and affective (overall feelings towards the element(s) (PRa)) components of the consumer.

The CAM model can be used by large corporations or small operations. Although CAM has a simple mathematical construct (PRa), a small operation can ignore measuring the values (using the 1 to 7 scale) and the degree of disposition a value feels towards an atmospheric element(s) (using the -3 to +3 scale). CAM is just as effective as a decision making tool when it encourages a small operation to intuitively determine the consumer's values and intuitively judges the reactions that the values may have towards the contemplated website design.

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## APPENDIX

**Table 1 Atmospheric Matrix's 69 values**

Comfortable life	Exciting life	World of peace	Equality
World of beauty	Family security	Freedom	Happiness
Inner harmony	Mature love	National security	Pleasure
Salvation	Self-respect	Wisdom	True friendship
Social recognition	Ambitious	Broad-minded	Capable
Cheerful	Clean	Courageous	Forgiving
Helpful	Honest	Imaginative	Independent
Logical	Loving	Obedient	Fatalistic
Polite	Responsible	Self-control	Individual
Collective	Adult	Romantic	Child
Masculine	Feminine	Competitive	Cooperative
Youth	Hero worship	Work to live	Performance
Status	Tradition	Change	Risk taking
Safety	Problem solving	Nature loving	Active
Passive	Materialistic	Leisure	Hard work
Technology	Information	Abstinence	Humor
Serious	Immediate gratification	Sensual gratification	Sense of accomplishment

The sixty-nine values were compiled from various literature on values (e.g., Rokeach, 1973; Hawkins, Best, and Coney's, (2001) list of other-oriented, environment-oriented, and self-oriented values).