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# **RESEARCH AND** WORKING PAPER **SERIES**

# **ONLINE TRUST THROUGH HUMANIZED** WEBSITE DESIGN: RESEARCH MODEL AND EMPIRICAL STUDY

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By

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Working Paper # 457

September, 2002



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## Submitted to the International Journal of Human-Computer Studies Special Issue on Trust and Technology

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### Online Trust Through Humanized Website Design: Research Model and Empirical Study

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#### Abstract

Trust is an essential component for any business transaction, and is particularly critical and challenging in the online environment, which is characterized by de-humanized business transactions. If online vendors are not able to establish trust with their customers, business-to-consumer electronic commerce will not realize its full potential. This paper presents an online trust model which distinguishes between product, company and referee trust. This model can help further our understanding of online trust, provide online vendors with approaches to help build customer trust, and direct research in this emerging economy. The concept of humanized website design is introduced as a potential trust instiller along the product, company and trust dimensions. Subsequently, an empirical study is outlined, and results are analyzed to determine the effects of website humanization. Results from this study are shown to be significant, indicating that there is a connection between human elements in design and trust in an online environment. Conclusions from this research are discussed and areas for future research are proposed.

Keywords: online trust, electronic commerce, website design, humanization

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#### 1. Introduction

With the rise of the Internet, businesses have found a new medium through which to sell their products and services and interact with customers and trading partners. Although electronic commerce (e-Commerce) promised significant potential to revolutionize the way business is conduced, online business is still relatively insignificant. In particular, business-to-consumer e-Commerce transactions have not reached a point of critical mass, largely due to a lack of online consumer trust (Görsch 2001; Corritore et al. 2001; Head et al. 2001; Baldwin and Currie 2000). Trust is a critical component for any business transaction, and is particularly essential in the e-Commerce environment, where transactions are more impersonal, anonymous and automated. Trust is vital to fostering and improving customer relationships (Speier et al., 1998), and if vendors are not able to instill customer trust in their e-Commerce operations, they are doomed to online failure.

The structure of the paper is as follows: An overview of trust, as described in the literature, is presented in Section 2. Focus is made on the distinctions between online and offline trust and the elements that engender trust in the online environment. An online trust model is presented in Section 3, where three online trust dimensions (product trust, company trust and referee trust) are identified. The concept of humanized design is then introduced in Section 4. Hypotheses are presented to evaluate the impact of humanized design on the online trust dimensions introduced in our model. Section 5 outlines the methodology and Section 6 presents the data analysis of the experimental study designed to test the impacts of humanized website design on trust. Finally, conclusions and areas for future research are summarized in Section 7.

#### 2. An Overview of Trust

Trust is a complex concept that has been widely studied. However, it remains a difficult concept to describe due to its dynamic, evolving and multi-faceted nature (Ambrose and Johnson 1998; Lewicki and Bunker 1996; Rotter 1980). In defining trust. some researchers have focused on the risk involved (Johnson-George and Swap 1982; Bhattacharya et al 1998; Salam et al. 1998), the vulnerabilities of the parties (Boss 1978; Mayer et al. 1995), and the presence of significant incentives at stake (Kee and Lnox 1970). Yet others have focused on the dimensions of credibility and benevolence (Roy et al. 2001; Ambrose and Johnson 1998; Doney and Cannon 1997; Ganesan 1994), and predictability (Hwang and Burgers 1997). In the context of commerce, trust has been defined as the willingness to depend on an exchanging partner in whom one has confidence (Moorman et al. 1993). Trust can be applied to relationships between individuals (Rempel et al. 1985), between individuals and organizations (Moorman et al. 1993; Geyskens et al. 1996) and even between individuals and objects/entities (Fogg and Tseng 1999). For example, a lack of trust can severely hinder personal interactions with other people, result in the loss of potential customers, and can hinder the growth and potential of new technology.

Although there may be many ways to describe this complex concept, common elements across many definitions of trust are vulnerability, control and time. According to Mayer et al. (1995), trust is the "willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trustor". Hence, vulnerability is not just risk-taking, but the willingness to take the

risk (Ambrose and Jahnson 1998). The more trusting we are, the more willing we may be to take the risk of engagement/interaction. For example, consumers will be more willing to purchase products from a vendor if they can trust that the vendor's word can be relied upon and the vendor will not take advantage of the consumer's vulnerabilities (Geyskens et al. 1996).

In order to build a trusting relationship, an element of control must often be present for both parties to trust one another. For example, in a business environment, trust is best achieved by allowing the balance of power to shift towards a more cooperative interaction between a business and its customers (Hoffman et al. 1999). If the balance of power tilts more heavily towards one party, the other party will perceive a heightened sense of risk and vulnerability, leading to a lower level of trust.

Time is another important element common among most trust definitions. Trust is a dynamic process that deepens or retreats based on experience (Head et al. 2001; Roy et al. 2001; Lewicki and Bunger 1996; Ravald and Grönroos 1996). In both human and business relationships, trust may be difficult to build, as it may require much time and effort. On the other hand, trust could be lost quite easily. For example, Cheskin/Sapient Research (1999) outlines a trust life cycle, stressing that consumers experiencing a breech of trust may easily revert back to a non-trusting state, where future trust is more difficult to reestablish. In this paper, we focus on the trust of the consumer in the e-Commerce environment. Applying the Cheskin/Sapient Research (1999) model, Head et al (2001) developed a framework for online trust, in which time is a critical component. Here,

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consumers may at first feel a sense of chaos in the e-Commerce environment, where they may fear that their personal information will be insecure or that online businesses may be fraudulent. Over time, trust is established as consumers become more familiar with the new technology and marketplace. Trust is then further enhanced with successful transactions that meet consumer expectations. However, at any point during this life cycle process, consumers may easily revert back to a state of chaos if their trust is breeched.

#### 2.2 Offline vs. Online Trust

As described above, trust is important for the success of any business. This is especially true for online businesses (Corritore et al. 2001; Head et al. 2001; Cheskin/Sapient 1999). Consumers expect the Internet to support a level of trust they do not observe in their everyday lives. For example, most people do not hesitate to pass credit card information to unknown waiters, store clerks, or even on the phone. However, they are very skeptical about passing this information through electronic means on the Internet.

In examining online trust, Head et al. (2001) distinguish between "hard" and "soft" trust. Hard trust centers around technical solutions to provide secure interactions. Consumers that hold this type of trust feel confident that their personal information will be safely transmitted to online vendors, who will keep this information secure from potential violators. In contrast, soft trust encompasses privacy and quality of service dimensions. Consumers that hold this type of trust feel confident that their personal information will not be sold to others, that online businesses accurately represent themselves (authenticity) and that their transactions will be honored as agreed (non-repudiability). Issues of hard trust can be more easily resolved through technological developments, such as encryption techniques and firewall protection. However, soft trust issues are more complex and difficult to moderate. They can be addressed by devising, implementing and closely adhering to specific policies that are designed to alleviate specific consumer concerns in these areas.

Although online and offline trust have many commonalities, they differ in some key aspects. The main differences are (Yoon 2002; Head et al. 2001; Roy et al. 2001; Furnell and Karweni 1999; Jarvenpaa et al 1999; Doney and Cannon 1997):

- The parties involved may interact across different times and locations, and the rules and regulations may vary across these zones.
- Less data control during and following its transfer
- Partners may be more likely to not know each other in an online environment, compared to an offline environment
- There are lower barriers to entry and exit for online businesses. Online vendors may be considered "fly-by-night" as there are few assurances that they will stay in business for some time.
- There is an absence of the physical element online. In offline environments, consumer trust is affected by the seller's investments in physical building, facilities and personnel. These factors are not as visible in the online environment. In addition, the physical evaluation of products is hindered in an online setting.

• There is an absence of the human element online. Electronic transactions are more impersonal, anonymous and automated than person-to-person off-line transactions

Due to the above factors, trust becomes more critical in online, compared to offline, environments (Roy et al 2001). In particular, business-to-consumer (B2C) online trust is more difficult to establish than business-to-business (B2B) online trust. B2C relationships are inherently more transaction-focused and short-term than B2B relationships. Trust is especially difficult to foster in a B2C setting with no pre-existing institutional confidence (Swaminathan et al. 1999).

#### 2.3 Trust Engenders

Since time is a critical factor to develop trust and the B2C market is still in its infancy, trust in the new marketspace is still relatively scarce. However, there are several factors that can contribute to building online trust: (i) brand; (ii) assurances; (iii) fulfillment; and (iv) Website design.

*Brand* is a promise of future performance (Deighton 1992). According to Davis (2000), a brand consists of what a company sells, what a company does and what a company is. Products with consistent positive attributes and companies with consistently high quality service are easier to brand. Brand loyalty can result in several advantages for firms, including (Delgado-Ballester and Munuera-Alemán 2001): (i) establishing substantial competitor entry barriers; (ii) higher sales and revenues; and (iii) a customer base that is less sensitive to competitor marketing efforts and tactics. In an online environment, where it is more difficult for customers to establish face-to-face relationships and evaluate products first-hand, the importance of branding is heightened. An online vendor's trustworthiness heavily depends upon the strength of its reputation or brand name (de Groote and Egger 2000; Jarvenpaa et al. 1999). In this regard, companies with an established offline presence are often perceived to be more legitimate than pure online stores (Steinfield and Whitten 1999), as they can leverage their brand equity in the online environment (Nielsen et al. 2001). Therefore, these "click-and-mortar" stores are proving to be the most successful in the electronic marketplace (Yoon 2002; Head et al. 2001).

*Assurances* of security and privacy are essential ingredients for establishing online trust. Online consumers need to feel that their transactions are safe and secure (Stratford 1999). Online consumers also wish to determine for themselves when, and to what extent information about them is used, and/or communicated to others (Agranoff 1993). These consumer concerns can be major inhibitors for e-Commerce success (Head and Yuan 2001). Detailed policies and procedures that address these online consumer concerns must be developed, implemented, clearly publicized and vigilantly followed to encourage a trusting environment. Third party individuals, groups and organizations can also play an important role towards reassuring online consumers of vendor adherence to proper business practices and policies (Resnick et al. 2000). For example, online vendor certification or authentication programs are offered by organizations such as TRUSTe, VeriSign, and BBBOnLine. The trustworthiness of third party individuals, groups or

organizations will depend on their impartiality, their industry experience, their credentials and their relationship with the consumer, to varying degrees.

*Fulfillment* of promises made by online vendors is critical to establishing trust and longterm relationships (Frazier et al. 1988). If prior customer experiences are not positive, where vendor or product expectations were not fulfilled, future customer trust in the vendor will be jeopardized. As mentioned above, a single violation in this regard can destroy the consumer-vendor trust relationship. Therefore, vendors should develop contingency plans to promptly minimize the negative impacts of any trust-reducing blunders (Head et al. 2001).

*Website design* and usability can induce customer confidence (Kim and Moon 1998) and impact the establishment of trust (Roy et al. 2001). The salesperson is a salient source of consumer trust in the offline market (Doney and Cannon 1997). However, in the electronic marketplace the salesperson is replaced by a website (Lohse and Spiller 1998). In this environment, the website mediates the relationship between consumers and vendors. Therefore, the design of the website can predict user perception of trust (Laberge and Caird 2000; Kim and Moon 1998). In a model proposed by Egger (2000) for online trust, interface properties, including graphic design and usability, play a key role in instilling consumer trust. In particular, the consumer attitudes impacting the development of trust are strongly affected by their first impressions of a system. For example, consumers tend to place more trust in websites that are easy to navigate (Cheskin/Sapient 1999; Nielsen et al. 2001), easy to search (Brock 1999; Nielsen et al.

2001), professionally designed (Sisson 2000; Nielsen et al. 2001), well-connected with other sites and agencies (Head et al. 2001), informative, timely and accurate (Egger 2000; Nielsen et al. 2001; Head et al. 2001). Therefore, web designers should pay close attention to interface issues that impact trust, as it is emerging as a potentially potent strategic element for conducting business online (Palmer et al. 2000).

#### 3. A Model for Online Trust

As discussed in Section 2, the concept of trust has been found to be closely linked to that of risk (Mayer et al., 1995). In this context, risk refers to the customer's perception of the uncertainty and negative consequences of engaging in online transactions. As already discussed, many factors have been cited as increasing the level of uncertainty and consequently the perceived riskiness of doing business online. In such an environment, trust becomes more critical for mitigating the customer's perception of the risks associated with a purchasing decision (Jarvenpaa et al., 1999). Hence, customers are generally more inclined to buy if they possess trust in the product they are seeking and/or the company that is selling it. Salam et al. (1998) also argue that increasing institutional trust reduces the perceived risk associated with online transactions.

The main goal of instilling and nurturing trust with customers is to facilitate their purchasing decisions, so as to sustain a mutually rewarding relationship between them and vendors. Hence, in developing a model for trust it is advantageous to examine the customer behavior when engaged in business transactions and to consequently identify the points at which trust is critical for achieving the above goal. A six-stage model for consumer behavior was proposed by Guttman, Moukas and Maes (1998). This model encompasses the stages of: (i) need identification; (ii) product brokering; (iii) merchant brokering; (iv) negotiation; (v) purchase; and (vi) after purchase evaluation. O'Keefe and McEachern (1998) proposed a model involving five decision processes which correlate closely with the above stages. These decision processes are: (i) need recognition; (ii) information search; (iii) evaluation; (iv) purchase; and (v) post purchase evaluation. The evaluation process in the O'Keefe and McEachern (1998) model clearly corresponds to the product brokering and merchant brokering stages in the Guttman et al. (1998) model.

The customer's main objective in both the pre- and post-purchase evaluation stages is to minimize their risk in both the current and future purchase decisions respectively. During the pre-purchase evaluation decision, customers attempt to minimize their risk through one or a combination of the following three means: (i) a product that they possess some trust in which addresses a need they have identified (e.g. a well-known brand); (ii) a company they trust that supplies the type of product that they are looking for (e.g. a nation-wide department store); (iii) a recommendation by a referee(s) that they trust for a particular brand or company that will supply the product to satisfy their identified need (e.g. a product review by an independent third party). Once a purchase has been made, customers will engage in a post-purchase evaluation stage to assess the quality of the product, the company and/or the referee(s) that were involved in facilitating their purchase decision. This process will result in strengthening or weakening their trust in the product, company or referee(s). Customers will then utilize their new beliefs about the product brand, the company and the referee(s) during future pre-purchase stages

while shopping for other products. It could be argued therefore, that trust should be analyzed along the three dimensions of product, company and referees.

Many models for online trust have been proposed in the literature (Egger 2000; Åberg and Shahmehri 2000; Lee et al. 2000; Roy et al. 2001; Salam et al. 1998; Ambrose and Johnson 1998; Yoon 2002; Papadopoulou et al. 2001; Head et al. 2001). These models generally treat online trust as a unified whole concept. This approach may be valid for identifying how particular factors impact online trust in general. However, taking a holistic view of online trust does not allow the exploration of how various factors may affect trust along the different dimensions identified above.

In this work we propose the *Circles of Online Trust Model* that takes a finer look at the concept of online trust, by examining it along the three trust dimensions of product trust, company trust and referee trust. The model proposes that developing trust along these three dimensions is critical to instilling trust in online customers. We argue that these three online trust dimensions are sufficiently differentiated to warrant separate investigation in terms of what instills trust for each and how they interact with one another to impact the overall success/failure of online vendors.

The *Circles of Online Trust Model* is depicted in Figure 1, where the three dimensions of online trust (product, company and referees) are represented by overlapping circles. The aggregation of the trust gained through each of these specific dimensions reflects the overall trust level that a customer holds for an online vendor. Trust is engendered along

each of these dimensions through the elements shown in the *Trust Engenders* box feeding that particular circle. These trust engendering elements were outlined in Section 2 above and are selectively applied in our model to infuse trust in each of the online trust dimensions. Some of these elements are common to more than one online trust dimension (e.g. brand), while others are unique to a single dimension (e.g. referee credentials). Although the three online trust dimensions are distinct, they can influence one another where the trust gained/lost through one dimension could strengthen/weaken trust along the other dimensions. For example, positive reviews by trusted referees could facilitate the development of product or company trust. Similarly, product trust gained through experience could facilitate the development of trust in the referees that recommended that product.

# <INSERT Figure1.jpg ABOUT HERE> Figure 1: Circles of Online Trust Model

Within the context of the proposed model, online vendors will attempt to draw new customers into their trust circles. This allows online vendors to initiate meaningful relationships with those customers. As those customers start interacting with a particular online vendor they may gain/loose online trust along the various trust dimensions identified by our model. At the early stages of interaction with a customer, online vendors should try to establish a high level of trust along as many of these three dimensions as possible, as quickly as possible. At any given point, a customer may exhibit varying degrees of trust along one, two or all three online trust dimensions for a particular vendor.

Although having trust in any one dimension is better than having no trust at all, customers exhibiting trust in only one dimension ( $T_c$ ,  $T_p$ ,  $T_r$  online trust types) may lack the necessary trust level to engage in meaningful long-term relationships with the online vendor. For instance, a customer who highly trusts a particular brand of computers (i.e. possessing  $T_p$  type trust) might be quite reluctant to buy this computer from an online vendor for whom he/she lacks online trust. However, customers possessing trust along two of the online trust dimensions ( $T_{cp}$ ,  $T_{cr}$ , or  $T_{pr}$ ) are better positioned to have a successful business relationship with the online vendor. In the previous example, if the customer was exposed to positive reviews about the online vendor from trusted referees (i.e. exhibiting  $T_{pr}$  type trust) he/she would be more inclined to start interacting with that vendor. In this case, the trusted referees played a critical role in building a minimal level of trust to allow these customers to initiate their first interaction with this online vendor. Once the customer starts interacting with this online vendor, the onus is on the vendor to instill company trust, so that the customer is more inclined to conduct future business with that vendor.

The ultimate goal of online vendors is to establish a high level of trust with their customers along all three online trust dimensions. This will position customers within the intersection area of the three trust circles in Figure 1. Customers who fall in this area exhibit a  $T_{cpr}$  type of trust and are therefore believed to be loyal. Such customers represent the most profitable segment for that vendor and are less likely to be lured away by competitors (Deepak, et al. 2002; Lee et al. 2000). In addition, they may even act as trusted referees that can engender trust in other customers. It should be clear, however,

that although  $T_{cpr}$  type customers are loyal, the vendor must continuously strive to reinforce trust with these customers along all the three online trust dimensions. This will help ensure their continued loyalty.

#### 4. Trust Through Humanized Design

As outlined in the Introduction, B2C e-Commerce has not met the hyped expectations in terms of sales figures or growth rates. Although more users have been engaging in e-Commerce transactions, a critical mass has not yet been established for this relatively new shopping medium. A significant hurdle facing e-Commerce success continues to be the major differences that exist between the online and offline shopping experiences. One such difference is that in the online environment, a lack of consumer trust continues to prevail (Cox, 1999; Levin, 2000; Westin and Maurici, 1998). Without this trust, development of e-Commerce cannot reach its potential (Cheskin/Spient 1999).

Another significant difference between online and offline environments, is that the offline shopping experience encompasses a wide range of emotions involving various types of interactions with humans through multiple sensory channels (Institute of Korea Science and Technology, 1996). The online shopping experience, on the other hand, is primarily geared towards reducing the user's cognitive burden through functional and performance-based website design heuristics (Nielsen 2000, Brinck et al. 2000, Head & Hassanein 2002). As such, e-Commerce may be viewed as being de-humanized, since it is more impersonal, anonymous and automated than traditional person-to-person commerce (Head et al. 2001). Dormann (2000) states that emotions "play a large role in problem

solving and decision making by providing information on the emotional desirability of the options available, thereby reducing and limiting reasoning to only those that induce positive feelings". Therefore, it is important that emotions be considered when designing e-Commerce sites.

#### 4.1 Humanized Website Design

Consumers who use the Internet to purchase items are mostly faced with de-humanized product images and descriptions. Here the term "de-humanized" is used to refer to products that are displayed with little or no emotional appeal. Such products are usually accompanied by descriptions that are functional, attribute-based, and at the very least, unemotional. It is important to note that web designers who develop such pages are following the advice of usability experts, such as Jacob Nielson, who's heuristics are well regarded in the industry. This is not to suggest that Neilson's guidelines are inaccurate, however, they tend to only address functional and performance aspects of websites. Such a de-humanized approach will likely not facilitate a trusting environment online.

A humanized approach to website design would incorporate various human-centric elements, such as emotive textual descriptions, relevant pictures of people, appropriate audio and video clips, virtual communities, virtual and real shopping agents, among others. Some recent studies have explored the relationship between humanized website design and users' satisfaction levels. Kim and Moon (1997) reported that manipulation of visual elements of the interface (such as color and clip art) can affect the user's level of trust for an e-Commerce interface. Friedman et al. (2000) argue that people trust other

people, not machines. Åberg and Shahmehri (2001) showed that human web assistants have a positive influence on users' attitudes towards websites. Papadopoulou et al. (2001) propose that e-Commerce trust can be more easily formed within a humanized agent-mediated environment. Mackay et al. (1997) argue that purchase decisions could be based on symbolic elements of the product as conveyed in pictures rather than on their actual features. Based on this, Dormann (2000, 2001) suggests that paying attention to picture effectiveness can be a key factor to the success of electronic commerce.

From the above research, there appears to be strong support for introducing humanized elements in website design. This literature indicates that humanized design may be linked to online trust and warrants further study.

#### 4.2 Hypotheses

In order to evaluate the impact of humanized design on the online trust dimensions, introduced in the *Circles of Online Trust* model, we propose the following hypotheses. These hypotheses are also generated from the humanization research surveyed in the previous subsection.

#### H1: Humanized website design has a positive impact on product trust

McCabe (2001) found that customers were more willing to purchase material products online when emotive descriptions of touch properties were provided, compared to a basic attribute listing. For example, a towel that was described as: "its soft-looped design feels smooth and comfortable against your skin", was more appealing to customers than the same towel described as: "100% Egyptian cotton, white, 30" x 54". Mackay et al. (1997) also suggest that product purchase decisions can be influenced by their pictures and imagery. Thus, we hypothesize that humanized textual descriptions and pictorial depictions have a positive impact on product trust.

#### H2: Humanized website design has a positive impact on company trust

A recent study by Nielsen et al. (2001) found that users were interested in finding information about the companies whose sites they browse. Users also expressed an interest in seeing pictures and biographies of the founders and key players in the company (Nielsen et al. 2001; Fogg et al. 2001). Thus, we hypothesize that humanized textual descriptions and pictorial depictions have a positive impact on company trust.

#### H3: Humanized website design has a positive impact on referee trust

Online customers are interested in finding out whether companies are recognized by any independent reputable third parties (Nielsen et al. 2001). If a vendor's site is linked from independent sites, the customer interprets this as a signal of trust (Palmer et al., 2000). In addition to third party sites, referees may include previous customers or contacts that are familiar with the products or services of the vendor. For instance, within a humanized virtual community, customers can gain trust in such referees through interaction and exchanging of opinions (Papadopoulou et al. 2001). Thus, we hypothesize that humanized textual descriptions and pictorial depictions have a positive impact on referee trust.

H4: Humanized website design has a positive impact on the overall trust towards that site

Fogg et al. (2001) conducted an online study to assess the impact of various website elements on people's perception of credibility. In this study "real-world-feel", including pictures, ranked at the top of factors affecting users' perception of website credibility, where credibility is highly correlated with trustworthiness. Thus, we hypothesize that humanized textual descriptions and pictorial depictions have a positive impact on the overall trust towards that site.

#### **5.** Methodology

An experiment was conducted to investigate the influence of humanized design on online trust, within the context of the proposed *Circles of Online Trust Model*. Subjects examined different websites that exhibited varying degrees of humanization and data was subsequently collected and analyzed to evaluate the impact of humanized design on their product trust (H1), company trust (H2), referee trust (H3), and overall trust (H4).

#### **5.1 Product Selection**

Prior to designing the websites that were used in the experimental study, it was necessary to carefully select the appropriate product as the object for this study. Some product categories naturally lend themselves better to offline shopping, while others are amenable to both online and offline environments (Alba et al. 1997; Lal and Sarvary 1999; Degeratu 2000; McCabe 2001). Several classification schemes for categorizing products have been proposed, some of which include: search versus experience products (Nelson

1974; Wright and Lynch 1995; Görsch 2001); digital versus non-digital products (Lal and Sarvary 1999); geometric versus material products (Klatzky et al. 1991; McCabe 2001). In the last classification, geometric products are those which consumers evaluate on a visual basis (i.e. sculptures, house wares, stereos, etc.), whereas material products are typically evaluated with the sense of touch (i.e. towels, clothing/material etc.). McCabe (2001) found that, as a consequence of being evaluated on a visual basis, geometric products were better suited to an online environment compared to material products.

Several studies (Commercenet and Nielsen Media Research 1999; King et al. 2000; HarrisInteractive 2000), report top selling online products to include books, CDs/videos, computers, electronics, travel, clothing and software. As expected, products with geometric properties (books, CDs/videos, computers, electronics, travel, software) maintain a majority position in these statistics. It is interesting to note that clothing (a material product) appears within these lists, albeit towards the bottom. For this study, clothing was identified as the online product to apply the humanized design process to. As a material product, it lends itself well to the application of humanization. It is also a product that all consumers would be familiar with and has the potential for mass online appeal.

#### **5.2 Websites**

In order to isolate the impact of humanized design on online trust, multiple websites were created for a fictitious clothing company. A fictitious company was chosen to avoid any potential bias from previous branding or experiences. These sites incorporated three

levels of humanized design for the three trust dimensions (product, company, referee), as per the online trust model and hypotheses presented above. Table 1 outlines the humanized characteristics of the three websites developed for this study. As previously mentioned, this study was restricted to humanization of textual and graphic information. Example screen shots of the study sites are shown in Figures 2 through 9.

		Humanized Design Characteristics										
Site Name	Humanization Level	Product	Company	Referee								
Site-1	Low	Products are shown in a solitary format with point form, functional descriptions	Employee names and positions are identified	No referee information								
Site-2	Medium	Products are shown on people's torsos with short, enhanced descriptions	Employee names and positions are identified with short, functional biographies	Textual customer reviews								
Site-3	High	Products are shown worn by people in emotional, dynamic settings with descriptions aimed at evoking positive emotions	Candid pictures of employees are added to personal autobiographies	Textual customer reviews included with pictures of reviewers								

**Table 1: Humanized Design Characteristics of the Test Websites** 

<INSERT Figure2.jpg ABOUT HERE>

**Figure 2: Site-1 Product Information** 

<INSERT Figure3.jpg ABOUT HERE>

#### **Figure 3: Site-2 Product Information**

<INSERT Figure4.jpg ABOUT HERE>

**Figure 4: Site-3 Product Information** 

<INSERT Figure5.jpg ABOUT HERE>

**Figure 5: Site-1 Company Information** 

<INSERT Figure6.jpg ABOUT HERE> Figure 6: Site-2 Company Information

<INSERT Figure 7.jpg ABOUT HERE> Figure 7: Site-3 Company Information

<INSERT Figure8.jpg ABOUT HERE> Figure 8: Site-2 Referee Information

<INSERT Figure9.jpg ABOUT HERE> Figure 9: Site-3 Referee Information

#### 5.3 Subjects and Procedure

A total of 51 subjects voluntarily participated in this study. The majority of subjects were business students from undergraduate and graduate programs, and the female - male split was 25 - 26. Subjects were asked to complete an initial questionnaire, which was designed to gain an understanding of the subjects' prior exposure to the Internet and e-Commerce transactions. On average, the participants in this study had made 6 previous online purchases (female average: 5.1; male average: 7.2). Table 2 summarizes the online familiarity of the 51 subjects. Generally, this group was Internet-savvy, where males exhibited slightly higher Internet usage and online purchasing experience than females. Interestingly, when subjects were asked why they would not buy online, the majority of female participants (54%) cited "lack of trust" as a barrier to online shopping, whereas the majority of male participants (56%) cited the "appeal of shopping offline". Nonetheless, lack of trust was the second most common reason (33%) provided by the males in this study for not shopping online.

Question	Total (%)	Female (%)	Male (%)		
Hours online/week					
Less than 3	14	16	12		
Between 4-6	10	8	12		
Between 7-10	20	28	12		
More than 10	56	48	64		
Previously purchased online	73	68	77		
Average online purchase amount					
\$1-\$25	8	12	5		
\$26-\$50	16	12	20		
\$51-\$75	38	35	40		
\$76-\$100	27	29	25		
More than \$100	11	12	10		
Reasons for buying online					
Convenience	33	36	31		
Not available offline	20	15	24		
Price	19	21	18		
Selection	13	18	8		
Prefer to buy online	8	5	8		
Other	7	5	11		
Reasons for NOT buying online					
Lack of trust	45	54	33		
Appeal of shopping offline	41	30	56		
No credit card	5	8	0		
Other	9	8	11		

**Table 2: Subjects' Prior Online Experience** 

Following the initial questionnaire, subjects were directed to a homepage where the three test websites were located. They were asked to view the three websites under the

pretense of wanting to buy an item of clothing for either themselves or for a friend. Subjects were allowed to examine the sites for as long as they required and were then asked to complete a post-test questionnaire. The post-test questionnaire consisted of both open and closed ended questions which were designed to identify the subjects' attitudes towards the humanization elements and how they affected their perceived trust towards the website. More detail on these questionnaires is provided in the following data analysis section.

#### 6. Data Analysis

The study hypotheses centered on user perceptions of trust and were analyzed by subjective measurements collected from questionnaires. The closed ended questions solicited opinions on site appeal, willingness to purchase and trust. These three constructs are closely linked and were used to evaluate the impact of humanized design on the three trust dimensions identified by our model. For example, *appeal* has been proposed as a design requirement of trust (Egger 2000), and *willingness to purchase* has been found to be highly dependent on trust (Görsch 2001; Jarvenpaa 1999; Yoon 2002). Eight out of the nine closed ended questions collected ordinal data on a 5-point Likert scale. The ninth closed ended question forced subject to decide which of the three sites they would be most willing to purchase from. Soliciting feedback on appeal, trust and willingness to purchase for humanized descriptions and pictures for each of our hypotheses would require at least 24 questions. However, this questionnaire was purposely kept relatively short to maintain the attention of the subjects and to permit more focus on open ended questions. Open ended questions can provide much insight for

exploratory studies in emerging fields, such as this. Therefore, two closed ended questions (one for humanized descriptions and one for humanized pictures) and one open ended question were used to test each of H1, H2 and H3. Hypothesis 4, which addressed the overall impact of humanization, was tested with three closed ended questions (appeal, willingness to purchase and trust) and one open ended question.

For the product trust (H1), company trust (H2) and referee trust (H3) scales, the Cronbach alphas were .73, .66 and .74 respectively. Low Cronbach alphas can be expected when there are few items per scale, however even with only 2 items, these scales are within an acceptable range. Rivard and Huff (1988) suggest that this measure for reliability should be higher than 0.5 (and ideally higher than 0.707).

# 6.1 Impact of Humanized Design on Product, Company and Referee Trust (H1, H2, H3)

Table 3 clearly illustrates that all measures for product trust, company trust and referee trust were shown to be very significant (p<0.001 or p<0.01). This means that the respondents agreed that humanized elements (descriptions and pictures) had a positive impact on their perceived trust of the websites. With respect to product humanization, subjects commented that they enjoyed seeing "happy people wearing the clothing", "clothing in dynamic settings", and "people that can be related to". Subjects also suggested that the humanized approach provided for richer information such as: "what type of weather the clothes are for", "the type of people who can wear the clothes", "how the clothes look in motion" and "how the clothes can be combined in various outfits".

However, some subjects also commented that the product could get "lost in the overall scene". Site-2 provided more focus on the clothing rather than the scene, but was found to be "unsettling" by several subjects due to the "omission of body parts". Site-1, which did not have a humanized component, was "clean and crisp" but was also often cited as being "boring" and lacking "motivation to purchase". One subject went so far as to say Site-3 "gave a personality to the item of clothing, whereas in the other two sites, the items were merely objects".

Subjects also commented on the different approaches used to display company information. Site-1, which only listed management names and positions, was generally thought to be "a cold approach", having "insufficient information" and being of "little value". In contrast, Site-3 provided many subjects with a "feeling of closeness", "a face to the company", where employee pictures helped build "a company image". One respondent commented that the "candid pictures" made her feel like she "knew something about the people – without reading a lot of text". Others did not "care about who works at the company or what their life stories were". They felt Site-3 displayed "too much superfluous personal information" that even "seemed fake". These subjects indicated that Site- 2 was "more professional" and "business-like", whereas Site-3 "made it look like the employees were more interested in having fun than running a business".

For referee trust, most subjects indicated they "appreciated" the customer reviews, and while the "photos were fun" they also made the reviews seem "less likely to be fabricated". In particular, one subject commented that he knew "the photos could be of anybody but they did lend an illusion of reality". On the other hand, some subjects viewed customer reviews "with skepticism", as the company could be "making them up". A couple of respondents indicated they would prefer to view "customer reviews from other sources" and one asked: "why should I trust a stranger's opinion rather than my own".

Interestingly, when the data was broken down according to sex or Internet usage, the only significant difference was in the impact of humanized referee pictures on trust. Website trust of male subjects was significantly impacted by pictures of customer reviewers (p<0.05), whereas the trust of female subjects was not influenced (p>0.05). Similar findings were discovered between subjects that used the Internet for more than 10 hours/week (p<0.01) and those that were online for less than 10 hours/week (p>0.05). This finding seems to contradict a cross-cultural study performed by Jarvenpaa et al. (1999), where Israelis, who were less experienced with the Internet, exhibited higher online trust than Australians, who had more experience in this environment. However, more recent work by Yoon (2002) indicates support for our finding, where individuals with prior e-Commerce transaction experience were found to be highly correlated with online trust.

Item <sup>1</sup>	m	med	sd	р	sig.
Product Trust (H1):	<u>1</u>				
Humanized descriptions positively impact site appeal	3.7	4	0.9	.000	***
Humanized pictures positively impact site appeal	3.8	4	1.0	.000	***
Company Trust (H2):					
Humanized descriptions do not impact willingness to purchase	2.3	2	0.9	.000	***
Humanized pictures positively impact trust	3.7	4	0.8	.000	***
Referee Trust (H3):					
Humanized descriptions positively impact willingness to purchase	3.5	4	1.0	.000	***
Humanized pictures positively impact trust	3.4	4	1.0	.004	**

Table 3: Impact of Humanized Design on Product, Company and Referee Trust(H1, H2, H3)

1. Questionnaire questions asked users to indicate the degree to which they agreed with the scale items. A 5-point Likert scale, which ranged from "strongly disagree" (Likert score = 1) to "strongly agree" (Likert score = 5), was used.

Notes:

a) m = sample mean, med = sample median, sd = sample standard deviation, p=significance level, sig. = ns (not significant), \* (.05 level), \*\* (.01 level), \*\*\* (.001 level)

b) 1-tailed t-test used, with the following null and alternate hypotheses:

*Null Hypothesis* (H<sub>0i,j</sub>):  $\mu_{i,j} \le 3$  or  $\mu_{i,j} \ge 3$ , where  $\mu_{i,j}$  is the mean of responses to item i of hypothesis j.

Alternate Hypothesis (H<sub>ai,j</sub>): either  $\mu_{ij}$ >3 or  $\mu_{ij}$ <3, depending on the direction of the item.

#### 6.2 Overall Impact of Humanized Design (H4)

Table 4 shows a comparison of the three sites for their overall impact of humanized design. Respondents agreed that humanization had a positive impact on appeal, trust and willingness to purchase. In most cases, when a less humanized design was compared with a more humanized design, the more humanized site was significantly preferred (p<0.01 or p<0.001). The only exception was the comparison of Site-1 with Site-2 for willingness to purchase. To impact decision making behavior, the website had to be fully humanized for the tested humanization elements (textual descriptions and pictorial depictions).

Although some subjects commented that they enjoyed the "simplicity" of Site-1 and Site-2, where the "focus was on products", the vast majority (65%) of subjects were most willing to purchase from Site-3, which was "more informative", "more appealing to look at" with a "friendlier atmosphere". Respondents stated that Site-3 was "more personal, like an actual store with actual people", and had a "very positive projection of image" where they were "selling the idea rather than the stuff". Many agreed that adding human elements to site design "made the site more personable" and it "was easier to trust a site that had real people on it". One subject went so far as to say that the "photos suggested brick-and-mortar stability", which is often lacking with online vendors.

#### Table 4: Overall Impact of Humanized Design (H4)

:	Descriptive Statistics									Paired Comparisons								
[tem <sup>1</sup>	Site-1			Site-2			Site-3			Site-1 vs. Site-2		Site-1 vs. Site-3			Site-2 vs. Site-3			
	m	med	sd	m	med	sd	m	med	sd	_ <u>p_</u>	sig.	Pref.	p	sig.	Pref.		sig.	Pref.
Appeal	2.9	3	1.2	3.3	3	1.1	4.1	4	0.8	.049	**	Site-2	.000	***	Site-3	.000	***	Site-3
Trust	2.7	3	1.0	3.3	3	0.9	3.8	4	0.9	.000	***	Site-2	.000	***	Site-3	.000	***	Site-3

#### 4 a) Appeal and Trust Items

1. Subjects were asked to rank each site in relation to its appeal and trust on a 5-point Likert scale, which ranged from "no appeal"/"no trust" (Likert score = 1) to "very appealing"/"very trusting" (Likert score = 5). Notes:

a) m = sample mean, med = sample median, sd = sample standard deviation

b) Paired comparison t-test used for comparison of scores between humanized site designs to test for significant differences, with the following null and alternate hypotheses:

Null Hypothesis (H<sub>0i,j,k</sub>):  $\mu_{i,k} - \mu_{j,k} = 0$ , where  $\mu_{i,k}$  and  $\mu_{j,k}$  are the means of the Site-i and Site-j scores respectively, for item k.

Alternate Hypothesis ( $H_{ai,j,k}$ ):  $\mu_{i,k} - \mu_{j,k} < 0$ c) p=significance level, sig. = ns (not significant), \* (.05 level), \*\* (.01 level), \*\*\* (.001 level), Pref. = the site that was significantly preferred in the given pair testing.

#### 4 b) Willingness to Purchase Item

	D	istributio	Paired Comparisons									
Item <sup>1</sup>	Site-1	Site-2	Site-3	Site-	1 vs. S	Site-2	Site-	1 vs. S	Site-3	Site-2 vs. Site-3		
LCU11	Sitt-1			_ p_	sig.	Pref.	p	sig.	Pref.	_p	sig.	Pref.
Willingness to Purchase	13%	22%	<sup>-</sup> 65%	.359	nS	-	.000	***	Site-3	.000	***	Site-3

1. Users were asked which site they would be most willing to buy from.

Notes:

a) 1-tailed sign test used for paired comparisons between humanized site designs to test for significant differences, with the following null and alternate hypotheses:

Null Hypothesis (H<sub>0i</sub>):  $\theta_i = 0.5$ , where  $\theta_i$  is the probability of Site-i obtaining a plus sign. Alternate Hypothesis (H<sub>ai</sub>):  $\theta_i < 0.5$ 

The sign test was used for this analysis since there were no quantitative magnitudes collected for the *willingness to purchase* item. Only the signs (positive or negative) of observed differences were collected. b) p=significance level, sig. = ns (not significant), \* (.05 level), \*\* (.01 level), \*\*\* (.001 level), Pref. = the site that was significantly preferred in the given pair testing.

#### 7. Conclusions and Future Research

Several design guidelines have been suggested to facilitate online interactions and potentially enable e-Commerce transactions (Brinck et al. 2000; Nielsen 2000; Theng et al. 1997; Sklar 2000; Slaybaugh 2001; Head and Hassanein 2002). However, these guidelines tend to focus on functionality and performance, rather than human elements, such as emotion. In the offline environment, marketers would not achieve their goals without addressing these human elements, which are essential to establishing a trusting relationship between vendor and customer. This paper proposes that these human elements are also important in the online environment. Online transactions are more impersonal, anonymous and automated than person-to-person transactions made offline. This de-humanization of business relations can be a major inhibitor for e-Commerce to reach its potential success. To overcome some of the negative consequences of this dehumanized medium, humanization elements can be incorporated into site design. Humanization elements may include emotive textual descriptions, relevant pictures of people, appropriate audio and video clips, virtual communities, virtual and real shopping agents, among others.

This paper presents a new model for online trust, which differentiates between product, company and referee trust. This model can help to further our understanding of online trust, provide online vendors with approaches to build customer trust, and direct research in this emerging economy. Humanized design was introduced as a potential trust instiller along the product, company and trust dimensions. A study was performed that explored the effects of two humanized design elements: textual descriptions and pictorial depictions. Results from this study were significant, indicating that there is a connection between human elements in design and trust in an online environment. This is a factor that is largely ignored in usability guidelines. It is recommended that online retailers consider the emotional appeal of their websites, as these emotions may ultimately influence existing and potential customers' attitudes towards trust.

Although the experimental results supported our proposed hypotheses on the positive impact of humanized design for online trust, some limitations of this study must be considered. This study was conducted in a laboratory setting where the measurement of actual trust is difficult. For example, there may be a significant difference between asking subjects if they would be willing to buy from a particular website, versus observing their natural behavior and asking them to place the order with their credit cards. This is a limitation in any such study. In addition, the subjects for this study were primarily university students. These may not have been representative of the typical online customer. Their types and levels of trust may be different from other customers since they are younger and less experienced as consumers. However, they may also be more experienced as Internet users, potentially resulting in some further biases.

Future research is needed to further our understanding in this new and emerging field. Although this is not a comprehensive list, the following are some areas that remain to be examined.

- Our study entailed 51 participants, who were primarily university students. Although our results strongly indicated there was a connection between the humanized elements on websites and a customer's perceived trust, further research must investigate these principles on a larger, more diverse test group.
- The product used in our study was clothing. Future study can evaluate the impact of humanized design on other product categories. Although it may seem likely that the humanization of material goods' sites is more beneficial than the humanization of sites selling goods with geometric properties, this remains to be validated through empirical research. Additionally, other material goods should be evaluated within the context of this research, as they may display be some significant differences in humanization impacts.
- The analysis for this study was based on subjective measures for perceived trust. Richer data could be collected by tracking the time spent on various

web pages and various elements within the web pages. It would be of value to explore which level of humanization resulted in longer viewing times. After all, a common objective of most sites is for visitors to stay there as long as possible.

- Our study only examined the impacts of emotive textual descriptions and pictorial depictions. The effects of higher levels of humanization (such as audio and video clips, virtual communities, virtual and real shopping agents) should also be explored.
- Preferences for information display vary across cultures and websites may be perceived differently by customers in different parts of the world (Sears et al 2000). Therefore, it would be of value to investigate the effectiveness of humanized design across different cultures.
- Our study focused on B2C e-Commerce applications. Future research could investigate the appropriateness and effectiveness of humanized design on the business-to-business and consumer-to-consumer market.
- In future research, humanization can be further extended to personalized humanization. Humanization involves adding human elements to site design, where the humans are typically strangers. However, personalized humanization would incorporate humans to the site that are known to the user

or share similar characteristics. For example, user preferences and demographics can be employed to dynamically select human elements in the site design that more closely match the personality of the user.

Our study focused on the impact of humanized design in e-Commerce.
 Mobile commerce (m-Commerce) is a natural extension of e-Commerce that allows users to interact with other users or businesses in a wireless mode, anytime/anywhere. Although the usability issues are quite different in the m-Commerce environment where display size is very limited, humanized design should also be explored in this context.

Trust is critical to the success of e-Commerce. We have shown that humanized site design may be one means of facilitating a trusting relationship between online customers and vendors. However, we must continually explore new approaches to instill this trust. After all, if online customers do not possess trust, clicks will not translate into sales and the revolutionary potential of e-Commerce may never be realized.

#### Acknowledgements

This work was supported by a grant from the Natural Sciences and Engineering Research Council of Canada.

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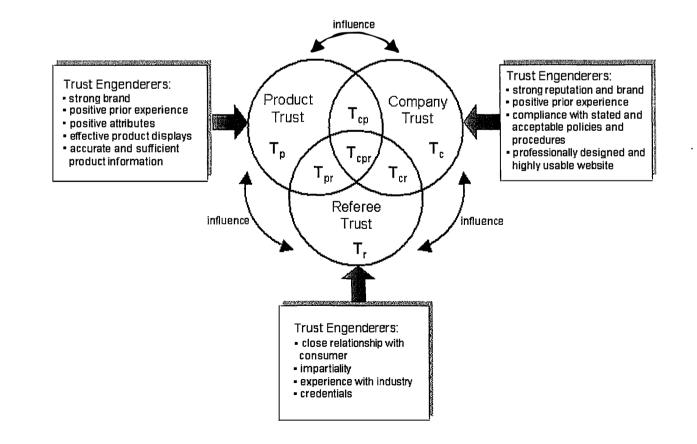
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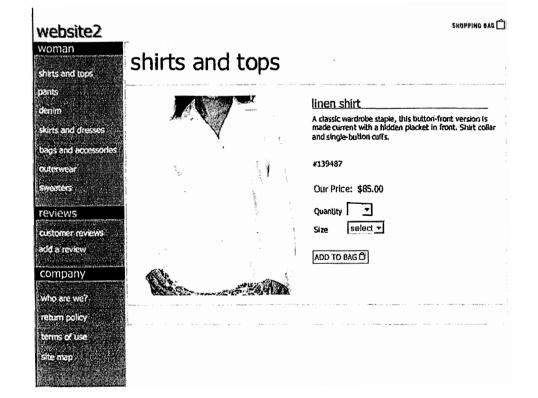
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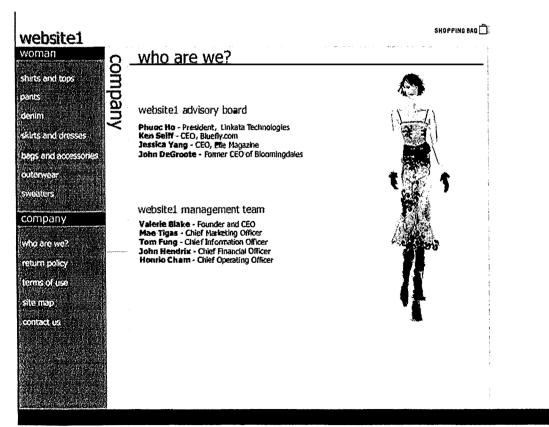
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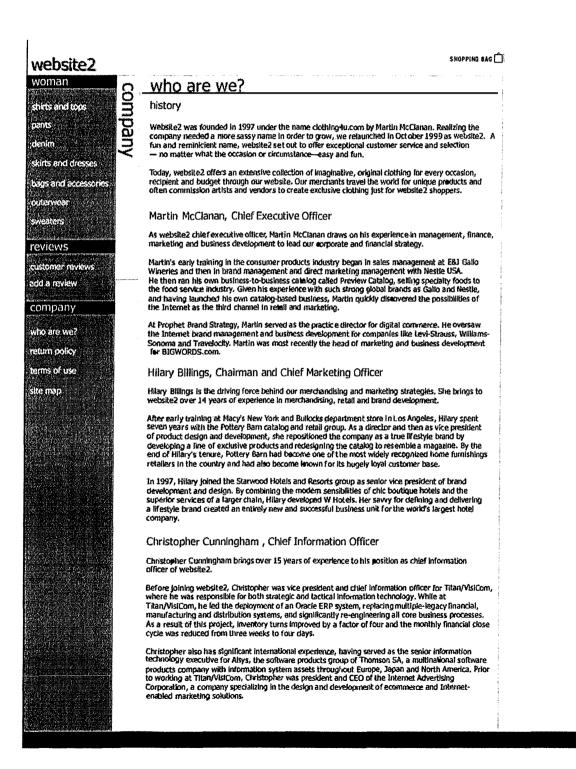
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#### SHOPPING BAG website3 woman shirts and tops shints and tops. pants summer pullover #193847 denim Building sandcastles with that special someone. The perfect summer day. The tides coming in and it's getting a little cold outside. Not to work though, because you've brought along our summer pullover. Wort keep you too warm or too cold. Perfect, Just like the day! skirts and dresses bags and accessories outerwear Our Price: \$39 sweaters reviews Quantity customer reviews sølect 🕶 Size add a review ADD TO BAG D company who are we?

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#### website3 woman

pants

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#### SHOPPING BAG

who are we? company shirts and tops a message from our ceo It's hard to believe website3 has had its third successful year, espenially given the turbulence of the markets and the obstacles any startup faces. Throughout the roller-coaster ride, there was something we always understood about our business: it depends on one thing — the people who love shopping our site. Website3 has thrived for one major reason — you, our customer. skirts and dresses The Internet revolution has been unpredictable and explosive. And since website 3 is a publicly traded bags and accessories The internet revolution has been dispecticable and explosive, and since recesses is a publicly robed company (NASDAQ: web3) with thousands of shareholders and hundreds of media organizations following our every move, we've been building our business during some pretty exciting times. Regardless of the extraordinary diversions, the website3 team has steadfastly focused all of its energy on providing you the best experience possible. outerwear sweaters Our goal is to make website3 the best of all worlds. By combining the quality and customer service of an upscale department store and the convenience of a catalog, were creating the ultimate shopping experience. Were trying to create an experience that offers much more than any full-price or off-price retailer could hope to offer. If you try us, we hope you'll agree to make us your "store of further entailer could hope to offer. If you try us, we hope you'll agree to make us your "store of the total the total to reviews customer reviews first resort" --- your first destination for designer fashion. add a review Thank-you for shopping with us first. company Robin Peaker Founder and Chief Shopper who are we? please click on one of us below for a detailed description return policy terms of use site map robin peaker john degroote chief financial officer mae young chief marketing officer founder and chief shopper paul smith chief information officer vicity kardon customer service representative

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## website2

shirts and tops

skins and dresses bags and accessories

woman

pants

denim

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add a review company who are we?

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# customer reviews reviews How Do I Love Thee ... by LRGuis

#### rating: \*\*\*\*\*

Realty an excellent site with good product info and easy ordering. Shipping within the U.S. is what one would expect, Canadian and foreign shipping costs are high though. In terms of their clothing, I love ilight. It's not quite generic like other brands out there but it's not so far out that people give you strange looks as you're walking down the street. In terms of my experience here, I haven't really had one yet. I've been ordering from light for the past 2 years and have always been breaked with the blobb denotes the product of the product of the past 2 years and have always been breaked with the strenge looks. highest respect and regard for a customer one could hope for. As for shipping, I've received a couple of packages that were damaged but I'm sure that was not their fault and the goods were unharmed. Overall, a very pleasant experience.

SHOPPING BAG

Indulge yourself. You deserve it! by jander01

ratino: \*\*\*\*

Now that the holidays are over and your bills are all paid, why not treat yourself to the things that you didn't get? I did! : ) I've always liked light.com. Their clothes are always designed with a great taste and I find that it's easy to wear anywhere. But if there is one reason why I gave them a rating of Gur stars is beause for last purchase from them arrived 2 weeks last. I waited two weeks and then called and they said it would arrive very soon. Well, I month after I order, my purchase finally arrived. I called customer service and they refunded 50% of my purchase just for the hastie. Although I was a little annoyed by the whole incident, I'm really impressed at the way that they handled my situation. Always being curteous and thoughtful when speaking to me.

One Satisfied Customer, by alfyboy

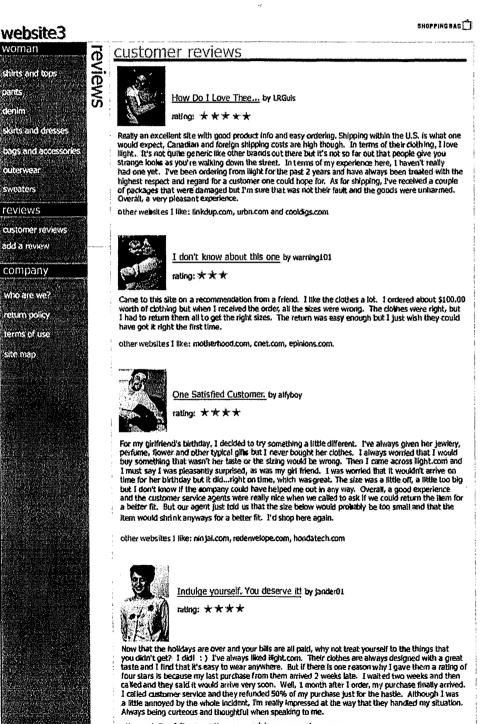
rating: \*\*\*\*

For my giffriend's birthday, I decided to by something a little different. Twe always given her jewiery, perfume, flower and other typical gifts but I never bought her clothes. I always worked that I would buy something that wasn't her taste or the sizing would be wrong. Then I came across light.com and I must say I was pleasantly surprised, as was my girl friend. I was worked that I wouldn't arrive on time for her birthday but it did...right on time, which was great. The size was a little off; a little too big but I don't know if the company could have helped me out in any way. Overall, a good experience and the customer service agents were really nice when we called to ask if we could return the item for a better fit. But our agent just toid us that the size below would probably be too small and that the litem would think anyways for a batter fit. I'd chon here area. Item would shrink anyways for a better fit. I'd shop here again.

I don't know about this one by warning101

ratino: \*\*\*

Came to this site on a renormandation from a friend. I like the clothes a lot. I ordered about \$100.00 worth of dothing but when I received the order, all the sizes were wrong. The dothes were right, but I had to return them all to get the right sizes. The return was easy enough but I just wish they could have got it right the first time.



other websites I like: egreetings.com, epinions.com, and con.com

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