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The Impact of Web Experience on Virtual Buying Behaviour: An Empirical Study

This paper examines the effects and significance of various controllable marketing factors likely to influence the online consumers' behaviour and buying decisions. The study is based on a proposed taxonomy of these factors, classified as elements of what is commonly called Online or Web Experience.

The paper analyses the results of a consumer survey held in a realistic online shopping environment and ascertains the influence of the various elements of the Online Experience on the choice of a virtual vendor.

Next to evaluating and validating the various elements of the proposed classification the study identifies the relative importance of these elements and their effects on the online consumers' decisions when acting in combination. The statistical analysis of the survey results leads to the conclusion that the usability and the trust-building elements of web sites are the most significant influencing factors of online customer behaviour.

Introduction

The spectacular growth of the Internet, its economic importance and potential as a present and future commercial environment are subjects frequently analyzed and debated by academics and practitioners alike. During ten years of commercial presence, more than nine hundred million web users worldwide (ClickZ Statistics 2004) have gained access to a vast

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virtual high street displaying a wide assortment of products, services, information, entertainment, education offered for browsing or sale on a ubiquitous, global basis. Having broken all previous adoption rates records of technological innovations, the Internet and more specifically its multimedia hypertext component better known as the Web, is widely considered as the motor behind the extraordinary high-tech boom and bust of the 1990's. Despite fears as to the future of the networked marketplace, the economic fall-out that followed the high-tech collapse of 2000 and 2001 does not seem to have left many scars on the Web's image; today the vast majority of consumers, managers and scholars consider the Internet as an essential parameter of economic and social life as well as one of the main constituents of the future commercial landscape. Internet-mediated commerce, commonly described as E-Commerce, is increasingly regarded as a mainstream commercial activity (Kraemer and Dedrick 2002; Presutti 2003; Drew 2003) and as a valuable marketing tool (Lynn et al. 2002). Next to becoming a major retailing channel [3]for both pure-plays and click-and-mortar firms (Van den Poel and Leunis 1999, Michalak and Calder 2003, Adelaar et al. 2004, Keen et al. 2004) the Internet has also evolved to an important element of the corporate marketing program (Sharma and Sheth 2002; Urban and Hauser 2003) and organisational strategy (McBride 1997, Sadovski et al. 2002).

The positive attitude of academics and practitioners towards the Internet is supported by forecasts as to the future of the virtual commerce. A recent study of Forrester Research (2004) predicts that online sales could account for 12% of US general merchandise retail spending by 2010. According to research of the Pew Internet and the American Life Project (Ecommerceguide.com 2004), two-thirds of the US adult Internet users were active online shoppers in 2004 (up from 47,8% in 2000), corresponding to 134 million purchases. The number of online buyers in the EU is also rapidly increasing with more than 30% of European Internet users buying products and services online, while similar trends are visible in other parts of the world. (The e-tailing Group 2004).

Understanding the Online Consumers' Behaviour

Factors affecting the propensity of consumers to engage in online business have been extensively studied and analyzed (Cappel and Myerscough 1996; Cockburn and Wilson 1996; Spiller and Lohse 1997; Jarvenpaa and Todd 1997; Degeratu et al. 2000; Childers et al. 2001, Dahan and Hauser 2001; Eastin 2002; Liu et al. 2003; Corbitt et al. 2003). Many researchers emphasise that the quality of the online presence is an important influencer of the online

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[3] The Internet is today one of the three major retail channels according to a recent research report published by the Aberdeen Group (2004)

consumer's behaviour, something also confirmed in research conducted by non-academic parties (Nielsen/Net Ratings 2002).

In order to deliver the virtual quality that online customers expect, e-marketers and web site designers should understand not only the markets they operate in but also the online consumers: their needs, motives and buying behaviour. Virtual marketers should also recognise the nature, power and function of the available online marketing tools and learn how to use these efficiently in order to positively influence the customers' decision-making process and choices.

The issue of mapping the virtual customer's needs, motives and buying behaviour has attracted a good deal of academic interest, with hundreds of research papers published during the last years. Researchers are typically interested about the effects of different marketing factors on the online consumers' behaviour but relatively little attention has been paid to classification of these factors, their simultaneous effects on the decision making processes and the identification of similarities or differences between the physical and virtual consumer. Cheung et al. (2003) review a large number of research papers and conclude that the underlying principles shaping the virtual consumers' behaviour are not fundamentally different from those shaping the behaviour of the physical, traditional consumers (Harrel and Frazier 1999; Czinkota and Kotabe 2001; Dibb et al. 2000; Jobber 2001; Boyd et al. 2002; Solomon and Stuart 2003; Kotler 2003). In broad terms, both types of buyers are subject to influences beyond as well as under the control of marketers. While the influencing elements beyond the marketer's control are quite similar for both traditional and virtual consumers (i.e. environmental factors and personal characteristics of the consumer), some essential differences can be found when one examines the nature of the controllable[4] inputs influencing the decision-making process.

Regarding controllable marketing tools it can be argued that the decision-making process of online consumers can be influenced not only by online but also by physical marketing in the form of mass advertising, sales promotions, publicity or direct marketing. Such tools are traditionally employed for a variety of reasons: establishing brand or product awareness, creating goodwill, attracting potential customers to the firm's sales outlet or boosting product demand. Yet traditional, physical marketing activities are not likely to play a significant role in acquiring and retaining online customers. This because of the diminishing effectiveness of mass marketing (Sharma and Seth 2004; Urban 2004), the changing nature of the virtual consumer (Urban and Hauser 2003) plus the fact that the reach of traditional marketing tools is rather limited, considered the geographically dispersed or even global

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[4] Elements of the online marketing where E-marketers can exercise full control

potential virtual audience targeted. Moreover plenty of anecdotal evidence suggests that word-of-mouth – at least in the beginning of their virtual presence - rather than any other form of advertising has help these to become dominant online players (Yahoo, Amazon, Ebay, Google etc.) A logical assumption here is that the main marketing influences on virtual customers surfing the web in search for a certain product of service are likely to be experienced online. This situation is similar the one experienced by a traditional shopper who during a walk through a shopping mall stops outside a shop he has never seen before; whether the customer will enter the shop, look around and complete a transaction there will depend on a number of elements like the shop's atmosphere, the product presentation and assortment, the friendliness of personnel, the product quality, the prices etc., in short the elements that create together the customer's shopping experience.

The online consumer likewise will find a company's web presence interesting, attractive and reliable enough to interact and possibly transact with it, depending on the impact of a number of virtual marketing elements shaping the customer's online shopping experience or Web Experience (Wan 2000; O'Cass and Fenech 2003; Tamini et al. 2003; Constantinides 2002 and 2004).

The relationship between success in online business and Web Experience has been often a subject of research and discussion by scholars and practitioners and according to a recently published report the overwhelming majority of leading commercial web sites score the highest in online customer experience (Internet Retailer 2004).

The positive impact of a Web shop on the potential customer – and mainly the first-time visitor - must be powerful and immediate in order to be effective. Web sites failing to capture the attention of the virtual potential customer in a very short time could risk losing substantial online business. According to a recent report of DoubleClick.com while the average number of web pages viewed per session is up by 12% in 2004 against 2003, the average consumer now spends 29 seconds per page, down from 32,5 last year. The report suggests that virtual consumers are now more active in the shopping process and marketers have less time available to attract attention (ecommerceinternet.com 2004). Furthermore studies based on analysis of click-through patterns indicate that the average time Internet users spend in web pages during searching can in some cases be as low as one second (Cockburn and McKenzie 2001) while the average time online customers spend per web site viewed is below the one minute (CyberAtlas, October 2003). A logical assumption is that the best way to attract and keep the online customers, particularly those visiting a web site for the first time, is to present them with attractive and compelling online content.
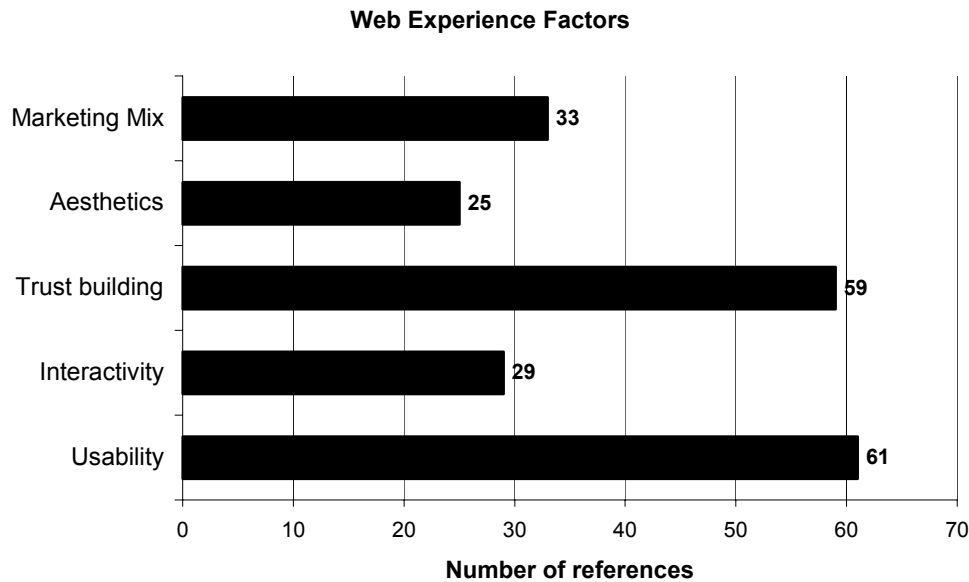
The Web Experience

While a visually appealing web site is the basic requirement for attracting virtual customers, visual attractiveness is one of several elements that combined shape the Online (or Web) Experience. The Web Experience (WE) can be defined as the total impression online customers get about the virtual firms (Watchfire 2000) as the result of their exposure to a combination of notions, emotions and impulses caused by the design and other marketing elements of the online presentation (Constantinides 2004). As such the WE is influenced by factors like searching, browsing, finding, selecting and evaluating information as well by impressions generated during interacting and transacting with the online firm.

Novak et al. (2000) based on a conceptual model of flow describing the components of "a compelling online experience" (Hoffman and Novak 1996), concluded that it is possible to define its ingredients, to measure them and relate them to important marketing variables. Other researchers have applied the flow theory (Csikszentmihalyi's 1990) as the framework of analysis of human-computer interaction and as a model describing different aspects of the online consumer's behaviour (Koufaris 2002; Pace 2004). For all intents and purposes the large number of variables affecting the WE and the constantly changing, dynamic character of the online environment underline the need for more research on the components of the WE and continuous refinement of business approaches (Kuniavsky 2003).

The medium for delivering the WE is the corporate Web site. Sites delivering high quality WE are designed and structured in ways not only addressing the customers needs, expectations and emotions but also evoking credibility, providing the right products and services, helping the customer through the steps of the buying process while offering fulfillment services, customer assistance and after-sales services (O'Keefe and McEachern 1998).

A Classification of Web Experience Elements

A large portion of research done in analyzing and mapping the behaviour of the online consumer is focused on modelling the online buying process as well as identifying and measuring the effects of different controllable and uncontrollable elements (Chung et al. 2003). Constantinides (2004) summarised the findings of different studies conducted between 1997 and 2003 on the effects of the controllable marketing elements on the virtual customer's behaviour. The study, based on a review of forty-eight research papers published between 1997 and 2003, classifies the online marketing tools as elements of the WE in three main building blocks and five sub-categories. (Graph 1).

Web Experience Factors

Factor	Number of references
Marketing Mix	33
Aesthetics	25
Trust building	59
Interactivity	29
Usability	61

Graph 1. Web Experience Factors (Constantinides 2004)

The WE factors depicted in Graphic 1 can be clustered in three categories: Content, Psychological and Functionality category. In more detail:

a. **Content category:** Factors exercising a direct and powerful influence on the WE by making the website aesthetically positive and its offer tangible and attractive. They include the *Aesthetics* and *Marketing Mix* factors.

b. **Psychological category:** Web sites must communicate trust and ensure users of the vendor's integrity and credibility in order to persuade customers to stop, explore them and interact online. Building trust is possible by deploying uncertainty-reducing elements, ensuring the safety of customer personal information and transaction data, eliminating fears of fraud and building trust between the online user and the often unknown and far away located vendor.

c. **Functionality category:** Factors enhancing the online experience by presenting the virtual client with a good functioning, easy to use and search as well as interactive web site. The Functionality category includes the *Usability* and *Interactivity* factors.

As mentioned earlier the classification is based on literature references. The objective of this study was to identify and classify all factors under the E-Marketer's control found by researchers to exercise influence on the decision-making process of the online consumer during the virtual interaction. The

study did not measure the weight of these factors, therefore the number of references per category (Graph 1) does not reflect the absolute or relative importance of each of the WE factors but it is only indicative of the frequency of empirical findings that might also reflect the main research interests. What the classification clearly underlines is the complex nature of the WE as a major influencer of the online buying decision process. The complex nature of the WE is obvious if one looks to the individual components of its main elements (Table 1).

Table 1. Main Web Experience Building Blocks, Sub-Categories and their Twenty-Five Characteristics (Constantinides 2004)

Functionality Category		Psychological Category	Content Category	
Usability Factors	**Interactivity Factors**	**Trust Building Factors**	**Aesthetic Factors**	**Marketing Mix Factors**
Convenience	Customer service /after sales	Transaction security	Design Presentation	Communication
Site navigation	Interaction with personnel	Customer Data Misuse	Quality Design elements	Product *
Information architecture	Customisation	Customer Data Safety		Promotion**
Ordering/ payment process	Network Effects	Uncertainty reducing elements	Style/ atmosphere	Price
Search facilities and process		Guarantees/return policies		Fulfillment***
Site speed				
Findability /accessibility				

* Product Assortment, ** Attractive promotions, *** Reliability of fulfillment process

Objectives and Hypotheses of this Study

The proposed taxonomy of WE elements is not indicative of the relative power and importance of each factor and does not reveal much about the way these act in combination as influencers of the online buying behaviour. From the practitioner's point of view the value and usability of any such classification is useful if:
- there is empirical evidence as to the effects of these factors in combination on the online buying behaviour and
- there is a ranking of these factors in order of importance.

The prime objective of this paper is to empirically evaluate the proposed Web Experience classification and measure the relative importance of the Web Experience elements. These objectives have been translated to a number of research hypotheses tested by means of an empirical study based on a simulation of an online shopping situation and a survey.

The hypotheses tested are the following:

H1: The Web Experience factors (usability, interactivity, trust, aesthetics, and marketing mix) are significant influencers of the online buyers' preferences.

The hypothesis originated with the results of the study on the influencers of online consumer behaviour, the factors that make up the customer's online experience (Constantinides 2004). The intention is to test to what degree these elements, identified as influencing the online buying behaviour in isolation and under different circumstances, also influence the online consumer in this particular setting i.e. when considered in combination.

H2:   Online customers prefer to buy from web shops scoring better in Usability and Trust while the Marketing Mix is not the main influencer of the online buying preference.

With regard to the Marketing Mix (Borden 1964; McCarthy 1964), academics as well as traditional marketers consider the Mix elements as the main controllable influencers of consumer behaviour (Goldsmith 1999; Jobber 2001; Kotler 2003). This view has been often challenged as incompatible with more recent marketing approaches based on creating and strengthening customer relations (Lauternborn 1990; Grönroos 1994; Gummesson 1997) as well as incompatible with marketing in online environments (Constantinides 2002).

The high frequency of literature references to Usability and Trust as web experience factors (Graph 1) indicates that these are the most frequently found influencers of the online consumer behaviour. It is interesting to investigate whether the high frequency of literature references to these two factors reflects also the real importance of them as main online consumer behaviour influencers in relation to the other Web Experience factors.

H3:   The motives of online customers to buy online do not have an effect on the way the Web Experience factors influence their online vendor preference.

H4:   The degree of experience of virtual customers in online shopping

affects the importance they attribute to Web Experience factors as influencers of their product and online vendor decisions

Hypotheses 3 and 4 are meant to identify the role of user's motivation and experience on the online buying behaviour. The importance and effects of these factors on the consumers' attitudes and behaviour online has not been so far systematically investigated. If motivation and experience seem to exercise substantial influence on the way consumers behave online then marketers and web designers must pay attention to these factors as segmentation criteria.

Methodology

In order to test the hypotheses and measure the relative weight of the WE factors (Table 1) we conducted a contingent valuation survey designed to identify factors influencing the behaviour of online buyers in simulated shopping conditions. The survey was focused on perceptions underpinning choices rather than the actual search behaviour of online consumers.

a. The scenario
    Survey participants were recruited from the student ranks of a research university in The Netherlands on a voluntary basis; every participant received a small amount of money as compensation for participating in the research. Participants were recruited by means of advertisements in University media, (newspapers, bulletin boards, campus web site) and by announcements in the class. Using students as a research population is not uncommon in academic research; in this particular case the researches thought that given the experience of Dutch students as Internet users (something confirmed from the survey results if we look to the long experience of the participants in web usage) the behaviour of this group can be seen as typical of the young virtual consumers. The survey was divided in two parts (see Appendix). The first part (Form I) had to be filled in before the participants read the instructions and start with the online buying process. This part includes questions about basic demographic characteristics and questions about the participants' attitudes towards online shopping and previous experience with the Internet. Participants with previous online buying record were asked to identify from a list the three main motives for shopping online while those without online shopping record were asked to identify the three most important reasons for not shopping online. This part included also a series of questions meant to identify the subjective opinion of

participants on the importance of the five WE categories [5] when choosing an online vendor, with values ranging from 1 (unimportant) to 5 (very important).

After that participants were presented with the second part of the questionnaire that was accompanied by detailed instructions as to the rules and tasks involved in the experiment.

A fictitious amount of 300 Euro[6] per participant (covering price and postal costs) was available to spend on purchasing a digital camera online.

Limitations as to search and ordering process were kept to a minimum. As to the product there were a few minimum technical specifications that the digital camera should meet. Participants were free to buy the camera in any online shop anywhere in the world provided that delivery in The Netherlands was possible. The idea behind the free choice of the online shop was that in this way the conditions of searching and choosing the vendor and product would be as realistic as possible. Consumers searching for products or services online have – at least in theory – unrestricted choice as to virtual shop they decide to do business with. For the same reason there were no limitations as to the number of web sites one had to visit before making a final choice or how to search fro them. One important limitation was that the camera had to be new (second-hand vendors and online auctions were excluded).

After finding the vendor and the product of their preference, participants were asked to proceed with all the steps required for placing the order online, stopping the ordering procedure at the moment they were asked to activate the payment steps.

Participants were asked to identify and write down the name and URL of three online shops: These were the two shops that came in their "short list" of vendors: the shop they chose to buy the digital camera from and a second one they found good enough to consider as a second best choice even though they finally did not purchase anything there. The third choice was a web shop they came across during their search but they rejected as a possible vendor for any reason(s). For each of the three shops they had to answer a separate set of twenty-five questions meant to reveal their perceptions as to the performance of each web site in every one of the 25 individual characteristics making up the five factors of the WE (Table 1).

Participants had to indicate whether they agree or disagree with statements like " It is convenient to buy products in this online shop" by answering in a five-point scale with values ranging from 1 (Fully disagree) to 5 (Fully agree). The surveys and the whole process were tested with

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[5] Usability, Interactivity, Trust, Aesthetics and Marketing Mix
[6] Approx. US $ 360

preliminary surveys, meant to identify problems in the scenario and the questions. As to the time available to the participants this was tested in the preliminary surveys; the total time available (90 minutes) seemed to be adequate for the overwhelming majority of participants. In that sense the times allowed per survey element, mentioned in the instructions, had an informative rather than restrictive character. This was also made clear to participants before they started and in practice very few of them needed more than 90 minutes to complete the assignment. In such cases there was also no objection to work longer.

b. Participants

A sample of eighty-five persons was used, divided in four sessions. Participants were mainly recruited among the undergraduate students and to a lesser degree among PhD and post-doctoral students of the University. During the session participants could ask for assistance from the supervisor of the session if necessary.

Empirical Results and Interpretation

a. Demographics and perceptions of participants on online shopping

Most of the survey participants were male (71%); the majority of them (66%) were between 20 and 25 years of age. A large percentage of participants (84%) were experienced Internet users with more than four years of working experience: 11% of the participants had a working experience with the Internet between 3 to 4 years and only 6% less than 3 years. Sixty-five participants (77%) had previously bought products or services online and 21 % of them are spending between 50 and 100 Euros per year for online purchases. The penetration of credit cards in this group was 44 % against 16 % for those who do not buy products or services online.

Those with previous online shopping experience had to indicate the three most important reasons for shopping online choosing them from a list [7]. Likewise those without online shopping record had to indicate the three most important reasons [8] for not buying products or services in the Web. The most important reason for buying products or services online for the majority of participants (27 %) was that they might find cheaper products online than in physical shops. Saving time (11%) and the ease of comparing prices (11%) were the second and third more frequently mentioned main reasons for shopping online.

Most survey participants without previous experience in online buying (26%) mentioned the lack of physical contact with the product as the main reason

[7] Source: Jupiter Research / Ipsos-Reid, Nov 2003
[8] Source: Ipsos – Reid, June 2003

for not buying products online. 21% of the participants mentioned the preference for physical shopping and 16% the lack of trust for online merchants as the most important reasons for avoiding Internet shopping.

As to the products (digital cameras) chosen, 45 different models were "bought"; a large majority (21 participants or 25%) chose the same model. Forty-four different shops appeared to be the first choice vendors of the participants and 20% of them "bought" the digital camera in an online shop they knew form the past.

In this part of the questionnaire participants were asked to indicate in a five-grades scale the importance of the five WE factors on their choice of an online vendor. The answers per factor are plotted on Table 2, indicating the perceptions of participants (in %).

Table 2.   Perceptions of Internet Users on the Importance of Web Experience Factors on Choice of an Internet Vendor (in %)

Web Experience factors affecting the choice for online vendors				
Very Important			**Not important**	
Factor 5	**4**	**3**	**2**	**1**
Usability 22	53	22	2	
Interactivity 5	35	46	12	2
Trust 81	18	1		
Aesthetics 8	34	41	15	1
Marketing Mix 26	47	16	5	6

In table 2 it is evident that following the subjective opinion of the participants all five WE factors are important influencers of their choice for online vendors. Effectively the single most important WE-factor is Trust, whereas Interactivity is the second most important WE-factor. Atmosphere (aesthetics) is perceived as the least important.

b. Statistical Results and Research Hypotheses

Each of the three websites chosen by the respondent has been evaluated on the role the WE elements have played in the decision to buy, include it in the short list or categorically reject it as possible online vendor. The evaluation was done with 25 evaluative theses with which the respondent could (totally) agree, neither agree nor disagree, or (totally) disagree. The results of the measurement of the five WE dimensions are reported in table 3. The quality of the measurement fulfills the usual standards. Only the consistency of the measurement of interactivity is somewhat low, something expected given the broad conceptual area covered by each of the interactivity characteristics. Deletion of items however doesn't improve this scale. In

Table 3: Overview of Measurement of WE factors

Label	Example question	# of indicators	First Eigen value	Cronbachs Alpha
Usability	q5. Convenient to buy	7	3.449	.82
Interactivity	q9. Easy interacting with staff	4	2.062	.67
Trust	q13. Guarantees for protection of data	5	3.028	.81
Aesthetics	q17. Superb site design	4	2.855	.87
Marketing Mix	q23. Reliable fulfillment process	5	2.385	.72

Table 4 Dimensions of Web Experience Explaining Buying Preferences

Dependent variable	Preference		
Hypothesis	H1 /H2	H3	H4
Nagelkerke	.31	.33	.48
Hoshmer Lemeshow	48.89 (8)	34.57 (8)	11.06 (8)
Area under the ROC curve	.70	.70	.75
Usability	.74 (.22) *	.74 (.22)*	1.07 (.26)*
Interactivity	-.27 (.20)	-.28 (.20)	-.36 (.21)
Trust	.24 (.18)	.23 (.18)	.35 (.20)
Aesthetics	.11 (.20)	.12 (.20)	.16 (.22)
Marketing Mix	.55 (.22) *	.56 (.21)*	.72 (.25)*
Find products not available in stores **		-.76 (.39)*	
Years Internet Usage			-.26 (.09) *
Online Buyer			.11 (.31)

Legend:
- Proxies of standardised regression parameters are presented in the cells
- Between brackets are the standard errors
- Proxy of the explained variables is the Nagelkerke criterion (Pseudo Rsquare)
- Hoshmer Lemeshow is X^2 with degrees of freedom (all are significant)
- Asterisk (*) indicates statistical significance on 5% level
- ** This is the motive to buy on line with the highest impact. (the rest of the identified motives are not reported in this table)

further analysis the component scores (regression method) of the five constructs is used.

In order to test the hypotheses a logistic regression was executed with the five WE-factors per web site as explanatory variables and the buying behaviour as the dependent variable. The design of the survey requires that the product would be bought at one third of the evaluated websites. The dependent variable is therefore a dichotomy (buy = 1, not buying = 0).

H1:   The Web Experience factors (usability, interactivity, trust, aesthetics, and marketing mix) are significant influencers of the online buyers' preferences.

With the exception of interactivity all other the WE factors have a positive effect on buying preferences as predicted. Yet despite the fact that the subjective opinion of online customers is that all five WE factors are significant influencers of the online vendor choice the results indicate that only the Usability and the Marketing mix play the predicted positive and significant role in this decision (Table 4). The hypothesis predicting that all five Web Experience factors would play a significant role in the on line buying behaviour is rejected.

The parameters do not change if we restrict the model only to the factors Usability and Marketing Mix because for all intents and purposes these are independent predictors of the online buying behaviour.

H2:   Online customers prefer to buy from web shops scoring better in Usability and Trust while the Marketing Mix is not the main influencer of the online buying preference

As predicted Usability exercises more influence on the online buying behaviour than the Marketing Mix but contrary to the prediction, Trust does not play an important role in the online buying preference. The hypothesis is rejected. Possible reasons for the unexpected poor performance of trust as behaviour influencer are discussed in the conclusions.

H3:   The motives of online customers to buy online do not have an effect on the way the Web Experience factors influence their online vendor preference.

We identified nine different statements as motives for shopping online (examples are: saving time, shopping when shops are closed, ease to compare prices, see appendix Q 3.1). The most common motive for shopping online is "Might be able to find better prices" followed by "Easier to compare

prices" and "To save time by not going to store". None of the participants chose two of these statements as motives for shopping online ("Winning bonus points" and "Avoid the weekend or holiday crowds"). None of these motives has any influence on the effect of the WE factors on the online buying preference as seen in the comparison of the results of H1/H2 and H3 in table 4. The hypothesis is accepted.

H4: The degree of experience of virtual customers in online shopping affects the importance they attribute to Web Experience factors as influencers of their product and online vendor decisions

We define experience in three ways:

a. We make a distinction between those who have previously bought or not bought products and services online. In this case there is no effect observed as expected.
b. We looked to the number of years that someone is actively using the Internet and
c. We asked the participants whether or not they knew the web shop(s) they evaluated (on this issue is earlier commented, in chapter "Understanding online consumer behaviour).

Controlling for the number of years of experience we found that the effect of this type of experience on the importance attributed to Usability and Marketing Mix is slightly stronger than the rest of the WE factors. Looking to the relation between the years of Internet usage and the Web Experience factors we observed that the longer people have been using the Internet the more critical (i.e. the more difficult to be satisfied) they are with respect to the Interactivity and Aesthetics of web sites while the years of internet usage have no significant effect on the appreciation of the other three WE factors (Usability, Trust and Marketing Mix).

As to the previous familiarity with the web shop(s), twenty five percent of the experienced participants (four or more years of previous Internet usage) knew one or more of the evaluated web shops already. The effect of this factor was the same as the reported effect of the years of experience on the parameters (Table 4, H4) but when both of these factors - years of Internet experience and familiarity with the web shop(s) - are introduced together in the model their effect is not significant anymore due to their high correlation. The observed effects of these three dimensions of experience might explain why Interactivity and Design do not play the role one should expect based on the high number of references of these factors in the literature (Constantinides 2004).

Research Limitations

Considering the many different types of customers' interaction with web sites, the findings of the study must be limited to situations whereby online consumers are searching the Internet for a physical product with the intention to buy it online. There must be some caution with the applicability of the findings to non-tangibles or to situations where consumers are using the web for other than transactional purposes. The scenario of the survey was focused on a buying situation typical for specialty products (Kotler 2003) rather than a buying situation of products frequently and routinely purchased online. Also the fact that there are no financial risks involved might have exercised some influence on the buying behaviour of participants undermining the importance of trust.

Furthermore the survey was primarily focused on investigating the parameters influencing the choice of the online vendor on the basis of perceptions and impressions of the users about the web shops rather than identifying and explaining the search behaviour of the participants. Despite the original intention of the researchers to investigate the online search behaviour (it was mentioned in the instructions that the log-files would be recorded and analyzed) technical problems prevented the log-file registration.

Finally the demographic composition of the sample requires some caution and careful interpretation of the conclusions.

Conclusions and Issues for Further Research

In this study three of the five Web Experience factors (Interactivity, Trust and Aesthetics) were not found to have substantial influence on the choice of online vendors. Usability of web sites is the most important criterion for choosing an online vendor followed by the Marketing Mix; the higher the (combined) impact of these two factors, the higher the probability that a virtual customer will chose the site to place an order. (The prediction improvement based on the area under the ROC curve is 37%). Usability and Marketing Mix are two WE elements very often named by researchers as important influencers of the consumers' behaviour. Motives, familiarity with online shopping and the years of web usage do not seem to play any significant role on the online buying process.

Research in the past has occasionally indicated discrepancies between perceptions of online consumers as to what influences their buying decisions and their actual buying behaviour. This study identifies one such discrepancy. Despite the perception of the vast majority of the participants in the survey that Trust as the most important WE factor affecting their choice

of an online vendor their actual buying behaviour does not indicate that. The same remark can be made for Atmosphere and Interactivity where the participants' perception as to the importance of these factors is not reflected in their actual behaviour.

The unexpected results concerning the low effect of Trust on buying behaviour made us wonder what the reason for that could be. We therefore looked at the precise answering patterns on all five characteristics of trust. It must be mentioned here that web sites where the participants would never buy the product were evaluated in a negative way in this dimension. Web shops where the participants "bought " the camera were rarely evaluated in a negative way as to their trustworthiness [9].

The item with the highest impact on buying behaviour was the assurance for transaction safety, with product warranty policies as second more important item. This despite the fact that many of the positively evaluated sites did not display any guarantee cues (like safe transaction seals) neither had explicit guarantees for protection of customer data against misuse. It can be that the design of the web site has played also an important role as a trustworthiness cue, something that has been found in previous research (Fogg et al. 2002).

Other reasons for the relative low importance of trust as an influencing factor of the online buyer can be the design of the experiment and the limited risk perception of the participants due to the fact that no real purchase was involved and the prospect of dealing with an unreliable vendor did not weight much in the final decision. Also lack of risk considerations could be attributed to the fact that the majority of participants are experienced online shoppers 20 % of them even knew the online shop they chose to buy the camera from previous transactions. A third factor likely to have reduced the importance of Trust was the requirement to order the digital camera from a vendor who could deliver in the Netherlands, therefore the order was subjected to the strict Dutch consumer protection laws, something presumably reducing the consumers' perceived risk.

In view of the above it could be argued that the influence of this factor on the online buying behaviour depends heavily on circumstances, therefore it is important that the role of Trust is further investigated in different buying conditions and contexts.

An interesting finding is that the Interactivity of web sites, considered as one of the most important benefits of using the Internet as a commercial channel, does not seem to have a decisive effect on the decision-making process. This finding is not totally unexpected since previous research has

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[9] 10% of the participants evaluated the site where they would buy as negative on all 5 measured aspects of trust

indicated [10] that customisation, personalised offers and personalised recommendations are online marketing tools that motivate very few customers to visit/patronise or buy more from the site. In this particular survey the low appreciation of Interactivity could indicate that web buyers are not willing to engage in time-consuming activities when working under time pressure. A second possible explanation for this fact is that according to our findings experienced Internet users apply higher standards in evaluating the Interactivity (as well as the Aesthetics of web sites).

The exact role of interactivity of web sites on the decision making process is an issue requiring further research. It is interesting for example that the role of Interactivity of web sites is tested in conditions where no time restrictions are imposed as well as when more elaborate user profiles are used. If indeed Interactivity is not essential for the online user then one of the most important industry assumptions must be carefully revisited.

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APPENDIX

Below the Form I, instructions and Form A of the questionnaire. Forms B and C are similar to A (without the segments 1, 1.1.1, 1.2, 2, 3 and 4) which also list a number of indicative questions in the section 5.

FORM I
Max time 5 min.
Name: St. Number: Participant nr.
Email:
Please fill in the following information
1. Demographics
1.1 What is your age: ………years
1.2 Sex: Male □   Female □
1.3 Study (or occupation):…………………………………………………

2. Internet usage
You have experience with the Internet of

2.1 Less than 1 year   □
2.2 Between 1 and 2 years   □
2.3 Between 2 and 3years   □

2.4 Between 3 and 4years   □
2.5 More than 4 years   □

Have you ever bought any products or services online?

2.6 Yes   □ go to question 3.1
2.7 No   □ go to question 3.3

3.1 How much you spend approximately in online products / services per year? Euro:………………

What are the main reasons for you to buy products online? (Indicate with the numbers 1,2,3 the three most important ones: 1 is the most important, 2 and 3 the following in importance)

3.1.1 □ To save time by not going to store
3.1.2 □   I can shop when shops are closed
3.1.3 □ To avoid the weekend or holiday crowds
3.1.4 □ Might be able to find better prices
3.1.5 □ Can find products more easily
3.1.6 □ Find products not available in stores
3.1.7 □ Easier to compare prices
3.1.8 □ Have gifts send directly to recipient
3.1.9 □ Can earn loyalty points
3.1.10 □ Other …………………………………………………….

Do you have a credit card?
3.2.1 Yes   □
3.2.2 No   □
Continue with question 4

3.3 What are the reasons that you do not buy products or services on the Internet? (Indicate with the numbers 1,2,3 the three most important ones: 1 is the most important, 2 and 3 the following in importance)

3.3.1 □ Prefer shopping in other ways
3.3.2 □ Can't touch or see the product
3.3.3 □ Shopping costs
3.3.4 □ Follow up concerns (complaints/returns/problems)
3.3.5 □ Taxes / duties
3.3.6 □   I do not trust online shopping
3.3.7 □   I do not trust the online merchants
3.3.8 □ No Dutch (or English for English speakers) language sites to purchase from
3.3.9 □   Slow delivery
3.3.10 □   Limited selection
3.3.11 □ Hard to find what you are looking for
3.3.12 □ Other……………………………………………………

Do you have a credit card?
3.4   Yes   □
3.5   No   □

4. Imagine that you want to buy a product (ex. a digital camera) online. What of the following elements you think will be important when you choose an online vendor?

Indicate your answer on a scale of 5 (very important) to 1 (unimportant) with an x

4.1   Ease of using the site
Very important   Unimportant
      5 □   4 □   3 □   2 □   1 □

4.2.   Interactivity of the site
Very important   Unimportant
      5 □   4 □   3 □   2 □   1 □

4.3.   Trustworthiness / credibility of the site
Very important   Unimportant
      5 □   4 □   3 □   2 □   1 □

4.4.   Atmosphere of the site
Very important   Unimportant
      5 □   4 □   3 □   2 □   1 □

4.5.   The Product/Price/Promotion/ Distribution mix of the site
 Very important   Unimportant
      5 □   4 □   3 □   2 □   1 □

Instructions to participants: Please read the instructions carefully   (Time required 5 min)

GENERAL ABOUT THE SURVEY

You are participating in a research experiment, part of an empirical study aiming at mapping the behavior of Internet users. The experiment simulates the situation experienced by Internet users shopping on line. It is not important if you are a regular, experienced buyer of online products and services or not; what is important is that as participant in this survey you act reasonably and realistically, that is, act the same way that you would act in real life when searching, comparing, evaluating information and deciding about buying a product or service on the Internet.

THE SCENARIO

You have an amount of money that you intent to spend for buying a new digital camera. You do not have any idea what the type or model should be; you only have some basic requirements in your mind and you want to find and buy the camera in the Internet.

The amount available is a fictitious budget of **Euro 300,00** to "spend" in buying a new digital camera online. As mentioned earlier it is very important that searching, comparing and "ordering" must be done in the same way one would act if he/she would actually intend to buy such a product online in real life. The process of searching you follow will be registered by means of log files[11]. You are furthermore asked to fill in a short introductory questionnaire (**I**) and three more questionnaires (**A, B, C**) identifying your experiences form this online purchase.

THE TERMS

You are interested to buy a **new** digital camera online. Your basic requirements are the following: The camera you need must have a resolution of at least 3 Mega Pixels (MP), a minimum of 16 MB memory and at least a x3 Optical Zoom.
Your budget available to spend for the digital camera (including postal costs) is Euro 300,00 (approx $ US 360,00). It is no problem is you spend less but exceeding this budget is not allowed.
You must find and buy the digital camera online. You are free to choose the model and the shop yourself. There is also no restriction as to how you search for the product. Two restrictions are however important to remember:
- You will not buy the camera in an online auction (like ebay).
- You will buy a new (no second hand) camera.
You have a maximum time of **30 minutes** to complete your search and decide about the product and the online vendor/shop. Your online activities will be registered in a log file as part of the research.
There is no limitation as to the location of the online shop you buy the product. Internet allows you to choose the online vendor from the whole world provided that delivery to Holland is possible.
After you find the digital camera you would like to buy and decide about the vendor, you must start the ordering process until the point that you have to confirm the purchase by giving your credit card number or any other personal information necessary for the payment.

DO NOT ORDER THE PRODUCT: At this point you must interrupt the ordering procedure.

In order to be able to give us the feedback we need for this research you must comply with the following instructions.

1. When you finish searching for the camera and before you begin the ordering procedure (see e), you must have **a short list of two online shops** that you consider good enough to place your order. (you will "buy" the camera in one of them). The camera model does not have necessarily to be the same in both shops.
You must write the exact web address of these 2 shops (The home page) in **Form A** and then print the Web page where the camera you have chosen is depicted.

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[11] . There was an initial intention to identify elements of the search behaviour by means of log files (see appendix), something that was not possible due to a last moment technical problem

2. You must also make a "**blacklist"** of online shops that you would rather not buy the
product from. In the **Form A** you must write the name and Home page URL of the online shop where **you would never order this product** because of different reasons (did not like it, did not trust the vendor etc).

The following step is to complete the survey by filling in three questionnaires (Forms A, B, C). While completing these forms it is possible that you need to go back to the pages for some details. The three forms are the following:

Form A: this form is registering your general impressions about the product and vendor of your choice with specific questions about the choice you made (see f.1).

Form B: this form is registering your impressions about the product and the vendor that
came to your favorites list but finally you did not "buy" the product from (see f.1)

Form C: This form is registering your impressions about the shop in your black list, the one that you would never choose to buy the product from (see f.2).

THE PROCEDURE IN SHORT

The research will take place in three stages:

Stage 1. Before you log in and start searching the web for the digital camera: Fill in the short survey (**FORM I**) and after reading the instructions you can start. In case of questions you can ask the supervisors. Maximum time: 10 minutes.

Stage 2. You can now log in the PC.
Search the Internet for a digital camera according to the previous instructions and "buy" it online. Three different online shops must be identified: The one you order the product, a second one that you found very good but you did not order the product from and one you dislike and you would never buy a digital camera from (see f.1 and f.2).

Do not forget to print the web page with the information about the product you have chosen.
Maximum time available 30 minutes

Stage 3. Fill in the three questionnaires:
Form A (See e.), form B (See f.) and form C (See g.)
Maximum time available 20 minutes

DO NOT FORGET TO FILL IN ALL INFORMATION REQUIRED <u>IN ALL FORMS.</u>
FAILING TO DO SO MAKES THE FORM USELESS FOR THE RESEARCH

We would like to thank you for participating in the survey.

Disclaimer: Any personal information made available during this survey will not be disclosed to any commercial or other party and will be exclusively used for the purpose of academic research.

FORM A

Name: .
Please fill in the following information.

1.   What   is   the   model   of   digital   camera   you   bought?
…………………………………………..

1.1 **Shop 1:** What is the web shop you chose to buy the product online? **(See f.1. in instructions)**

Name………………………………………
URL OF HOME PAGE www. …………..……………………………………….

1.1.1 Did you know this online shop before this session?

1.1.2   Yes   □
1.2.3   No   □
Pls make a printout of the camera you "bought" with the information available on the site and give it to the supervisor together with the surveys
1.2 What is the price you paid for the camera including postal costs?
     Euros :…………
     $ US   ………..
     £ UK   ………….
2. What was the **second web shop** in your final short list? **(See f.1. in instructions**)

2.1. Shop 2:
Name………………………………………
URL OF HOME PAGE www …………………………………………..

2.2 What is the online shop you would never chose to buy the camera from? **(See f.2. in instructions)**

2.3. Shop 3:
Name………………………………………
URL OF HOME PAGE www …………………………………………..

Product Choice

3. What of the following factors have influenced your decision for choosing **this digital camera (1)**? Indicate the **three most important factors** for your choice with an **x** and indicate their importance with the numbers 1,2,3 (1: the most important, 2: second important, 3: third important) in the rank column. Also indicate with an x the

three most unimportant factors for this choice.

	Most Important	Rank (1,2,3)	Most Unimportant
3.1 It was the cheapest	□	( )	□
3.2 I trust this brand	□	( )	□
3.3 I liked the camera very much	□	( )	□
3.4 I trust the shop that sells it	□	( )	□
3.5 It was the best I could find for this money	□	( )	□
3.6 I reed positive comments about the camera	□	( )	□
3.7 I know this camera	□	( )	□
3.8 The shop's product assortment was very good	□	( )	□
3.9 Ordering by this vendor was very simple	□	( )	□
3.10 The site offers good warranties	□	( )	□

Online shop choice

4. What of the following factors have influenced your decision for choosing **this online shop (1.1)?** Indicate the **three most important factors** for your choice with an **x** and indicate their importance with the numbers 1,2,3 (1: the most important, 2: second important, 3: third important) in the rank column. Also indicate with an x the **three most unimportant factors** for making this choice.

	Most Important	Rank (1,2,3)	Most Unimportant
4.1 The web site's convenience of use	□	( )	□
4.2 The web site's interactivity	□	( )	□
4.3 The online shop's reliability	□	( )	□
4.4 The web site's aesthetical qualities	□	( )	□
4.5 The quality of the product in relation to the price	□	( )	□
4.6 I know this online shop	□	( )	□
4.7 I have bought products in this online shop before	□	( )	□
4.8 The shop's prices	□	( )	□
4.9 The shop's promotions	□	( )	□
4.10 The ease to find the online shop	□	( )	□

5. The following questions refer to the online shop you decided to buy the digital camera and you indicated in question 1.

Read carefully the following statements and specify in the scale of 5 (Fully agree) to 1 (Fully disagree) to what degree the issues mentioned below played an important role in your choice for the online shop.
5.1 It is convenient to buy products in this online shop.
       Fully agree   Fully disagree
       5 □   4 □   3 □   2 □   1 □

5.6 The site's pages are loading very fast
       Fully agree   Fully disagree
       5 □   4 □   3 □   2 □   1 □

5.8. The shop offers excellent customer service
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

5.12 The site offers adequate guarantees for the safety of online transactions
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

5.15 The site displays prominently seals or logos of organisations that guarantee secure online shopping (like Thuiswinkel Waarborg, VeriSign etc)
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

5.17 The site's design is superb
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

5.22 The site offers a wide and deep product assortment
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

5.24 The web shop offers very competitive prices
     Fully agree   Fully disagree
     5 □   4 □ 3 □ 2 □ 1 □

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