Disconfirmation on E-commerce: Implications of Using Multimedia Technology

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Ⅰ. Introduction

Over the past several decades, models regarding determinants of customer satisfaction and dissatisfaction have been widely studied for consumer goods and services in the conventional market (Bemis, 1996; LaBarbera and Mazursky, 1983; Oliver, 1980; Spreng et al., 1996). Cust- omer service in the traditional market is one of the most important issues in the fields of business and information systems (Zwass 1996; Zwas, 1999). Consumers expect a certain level of service to accompany their purchases of goods and services (Heskett et al. 1994; Watson et al. 1998). Sufficient information about product/ service features and warranties and guarantees, ease of return or exchange, technical support, and the convenience of the purchase experience itself are good elements for customer service.

Numerous researchers have come forth with various studies in the area of multimedia over the past several decades. Multimedia is defined as any kind of computer-based system that uses text with one or more other media types graphics, images, animation, sound, or motion pictures (Shim and Chun, 1994; Callahan, Shim and Oakley 2000). Multimedia technology is a useful tool for firms because such applications can have an endless range of available and easy-to-comprehend information. Today, the multimedia technology can provide strategic opportunities by harnessing the technology (i.e., video/ audio, 3D image, and animation) to create connections for real time contact and call back customer services.

However, little attention has been given to the factors of multimedia technology-based customer service provided by Internet marketers for online consumers.

A research report indicates that more than 300 million people will have Internet access by 2005 (Data Monitor, 1999; OShea, 1999). Marketers have been competing to gain advantage of potential sales and revenue growth through on-line marketing for consumers. With explosive growth of conventional marketers offering their products and services on-line, as well as new businesses proliferating solely for on-line marketing, research is warranted to examine the key factors in consumers customer-service experiences in this new marketing channel. Research that contributes to the under- standing of consumer experiences with on-line shopping has important implications for researchers as well as business and information systems managers (Adam et al., 1999).

The primary objective of this paper is: First, to apply the customer service theory and disconfirmation of expectation theory to the field of electronic marketing. Second, it describes research methodology demonstrating the value of triangulating quantitative and qualitative techniques for inquiry and analysis of data. Finally, this paper offers new insights that can aid information systems managers and Internet marketers in improving their on-line presentations to consumers.

II. Theoretical Development

The disconfirmation of expectation theory has been found to be an important conceptual model in the field of consumer satisfaction research. This theory suggests that customer satisfaction relates to size and direction of disconfirmation, which is the difference between pre-purchase expectations and post-purchase performance of the product/service purchased (Olson and Dover, 1979;

Patterson, 1997; Swan and Trawick, 1980). The research presented here has applied the disconfirmation of expectation theory for the study of consumer on-line shopping experiences; in this case, applying disconfirmation of expectations theory helps to explain why on-line shoppers retain certain sites and reject others when selecting among the readily available Internet marketing sites for purchases.

Empirical research of the disconfirmation of the expectations model has found that disconfirmation is positively correlated to and has the strongest direct effect on customer satisfaction. In turn, customer satisfaction is strongly and positively associated with repeat intentions (Patterson, 1997). Future purchase intentions have been found to be a function of prior intention (LaBarbera and Mazursky, 1983 and of customer satisfaction and dissatisfaction (Oliver, 1980). As shown in Figure 1-a, the *Search and Evaluation Model* (Mowen, 1995) *of Alternative Steps of the Consumer Decision Process* presents considerably more options for the online shopper than for the conventional shopper. The user, by performing a search on the Internet, can select from instant results listing numerous and possible sites. Unlike conventional shopping, the user can readily move back and forth between the listed or competing web sites to compare options.
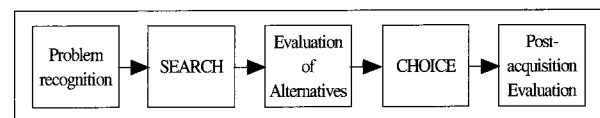
〈Figure 1-a〉 A Conceptual Model for the Search and Evaluation of Alternatives steps for Conventional Shopping

To maintain high customer-satisfaction levels, firms have been recommended to choose different combinations of interactive functions that fit well into their
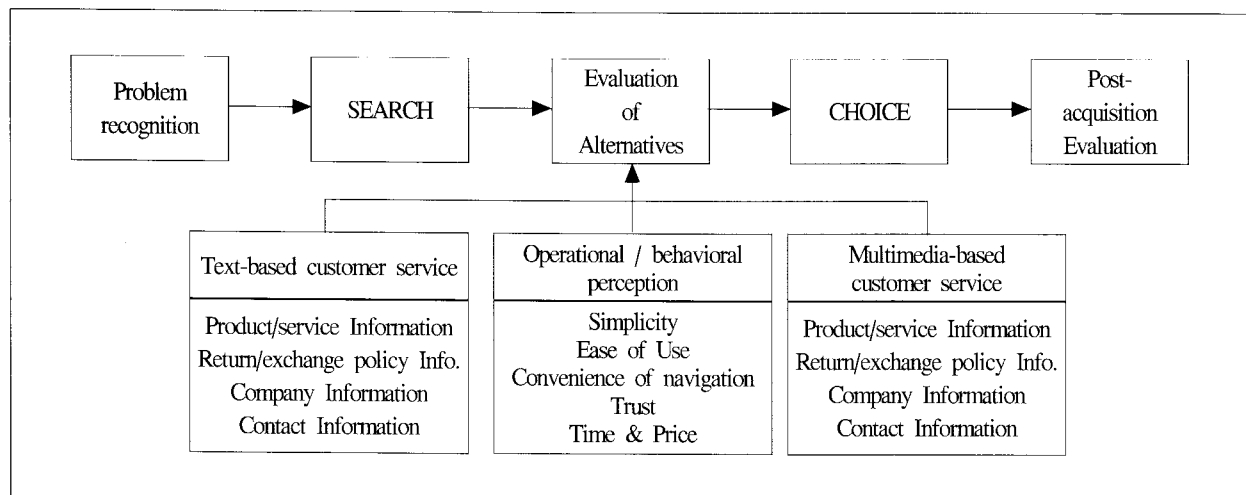
〈Figure 1-b〉 A Revised Search and Evaluation of Alternatives Steps for On-line Shopping

web communication strategy and site goal (Ghose and Dou, 1998). A model of the Internet shopper's purchase decision process is derived (see Figure 1-b), based on these customer-oriented factors and web-based marketer's efforts to improve customer satisfaction.

The authors have examined, from the consumer's viewpoint, the key factors impacting consumer experiences through *search and alternative evaluation consumer decision steps* (Mowen, 1995) as applied to on-line shopping. Since consumer electronic shopping (Baty and Lee 1995; Jarvenpaa and Todd 1996/1997; Quelch and Klein, 1996) is an experience vastly different in many ways from conventional shopping, the research described here proceeded first from a qualitative paradigm, using methods of existential phenomenology to learn about consumer's Internet shopping experiences.

III. Electronic Market Review

In 1999, an estimated 45 percent of United States households had a personal computer. It is estimated that 25 percent of homes in the United States have access to the Internet, which is the primary use of the personal computer for 46 percent of households with

computers (Yankee Group, 1999; Beatty *et al.*). The 1996 MasterCard International report surveyed "heavy web users," finding that web users shopping on-line were concerned more about convenience rather than discount prices. Fewer than 50 percent of the respondents cited lower prices as a motive for on-line shopping. Approximately 86 percent cited 24-hour availability, and 83 percent cited "accessibility from any web-ready PC" as their chief motives. Slightly fewer—76 and 73 percent respectively—named no travel required and time saved as leading benefits of Internet shopping.

Although Internet sales in 1997 were less than 1 percent of all non-store shopping, on-line shopping has the potential to alter the fundamental manner of shopping (Schiesel, 1997). Forecasts of electronic shopping sales have ranged from $5 billion to $300 billion annually by the year 2003 (Reda 1995; Wilensky, 1995). An Internet user survey (Georgia Tech, 1998) reported that 70.8 percent of its respondents spent more than $100 through Internet shopping in the previous six months. More than 85 percent of these respondents expect to spend more or the same level of spending through Internet shopping during the next six months. Slightly more than 50 percent of the respondents listed easy handling of returns/

refunds, customer services and after-sales support, and ease of contacting vendors as the most important factors in their decisions to shop on-line (Georgia Tech, 1998).

IV. Research Methodology

Since early in the 1930's, existential phenomenological methods have been employed widely in research. This method has been found epistemologically viable in exploring human experience. As summarized by Thompson et al. (1989), the core assumptions of this method can be described through the metaphors of pattern, figure/ ground, and perspective. Within a given context (in this case, the Internet), a person experiences a view that is of pertinent pattern (i.e., elements within experience that are meaningful to the person). Through this method, rather than attempting to understand consumer on-line shopping by obtaining responses to decontextualized variables, the researcher attempts to learn the respondent's meaning of the experience within the lived context. In the contextual setting, salient experiences stand out in contrast to unreflected or unimportant experiences (Thompson et al., 1989).

To employ existential phenomenology in this study, the authors used the interview approach. Because the purpose of existential phenomenology is to describe experience as it is lived, the interview has been found to be a powerful tool. The interview is used to attain an in-depth understanding of another person's experience (Kvale, 1983). Research analysis of interview-derived information is considered valid because respondent's own words are used for understanding their experiences (Feagin et al., 1991). Accordingly, respondents were presented with a set of questions (Appendix A) designed to encourage them to discuss and describe their experiences with Internet shopping.

Twelve (12) participants were interviewed to obtain

detailed descriptions of their experiences. Tape-recorded responses were transcribed and analyzed according to the hermeneutic circle, with researchers reviewing response texts for evidence of common themes. Obtained themes from participants guided quantitative analyses that offered additional understanding of important factors in consumer on-line shopping. Such triangulation or a combination of qualitative and quantitative research methodologies has been found useful for revealing and examining research variables (Currall et al., 1999; Jick 1979). A sample of participants was obtained by net- working; people who were conveniently identified as having shopped for consumer goods/services on-line were asked to name additional people who had experienced Internet shopping. Aside from the requirement that convenient respondents have experienced on-line shopping, additional demographic characteristics of the sample resulted by random chance. Demographic data of the participants are shown in Figure 2.

⟨Figure 2⟩ The demographic descriptions of respondents
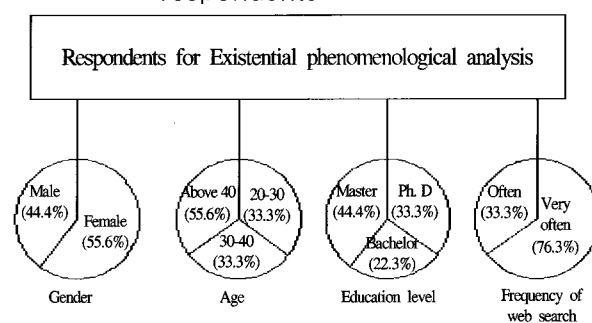
The majority of respondents, whose names were obtained through networking or referral, were well-educated, professional, affluent, comfortable with computer use, and already experienced somewhat with on-line shopping. Since this profile corresponds with the currently identified Internet shoppers (Foley & Sutton, 1998), the experiences relayed by these respondents are believed to be a reasonable representation of a random

sampling of regular Internet shoppers. Furthermore, a valid sample of known Internet shoppers ensures that the respondents' reports are based on familiarity with the use of the medium rather than the extraction from one-time or unusual attention-grabbing occurrence that is not representative of on-line shopping. Resulting reports may then be expected to have greater likelihood of generalization.

The questions presented to the respondents encouraged them to develop dialogue resembling a convertsation, with the interviewer providing the context (ground) from which the respondents could freely describe their experiences in detail. Each interview, lasting 30-45 minutes, was tape-recorded; respondents were assured of confidentiality. The opening questions were designed to establish an understandable domain for beginning the dialogue, and additional questions emerged instinctively from the ongoing dialogue. Participants thus were

encouraged to discuss not only their on-line shopping experiences but also their shopping attitudes and typical ways of shopping.

Transcriptions of the tape-recorded interviews were used for analysis using interpretive techniques explained by Thompson et al. (1989). The text of the transcribed interviews was treated as a stand-alone body of data. Preconceived notions of the researchers about the phenomenon (on-line shopping) were bracketed or held aside to ensure that interpretation would not be biased from the respondents' views of their experiences. Through use of the hermeneutic circle (Thompson et al., 1989), the authors first individually studied the texts to identify the themes expressed by each respondent. Each author then attempted to relate themes of individual respondents to global themes commonly expressed among respondents. Results were compared among the authors to attain inter-judge agreement. According to

⟨Table 1⟩ Browser plug-in players for multi- media technology

Type of Multimedia Technology	Plug-in Players
Audio/Video	Net2phone, RealAudio, Apple QuickTime 4 Plug-in, Bamba, Beatnik, COM One Video Plug-in, CineWeb, Crescendo, Digital Sound & Music Interface for OS/2, Eloquent Presenter, Fmaudio, IP/TV, Koan Plugin, Liquid MusicPlayer, MIO, Maczilla, Modplug Plugin, MpegTV, MusicFenie, MyVoice, NET TOOB Stream, Onflow Player, PhoneFree, PlayerPRO, Plugger, QuickFlic, SIDPlug, Sibelius Scorch, Talker, Ump, VDOLive, ViewMovie QuickTime, VivoActive Player, WebTracks, ZD-spc
3D and Animation	AnimaFlex, ClicToons, Cortona VRML client, Cult3D, DBC Moderation Client, DeepV, Entrance, Flash Player, Flatland Rover, Gig Plug-in, HyperChem Web Viewer, Hypercosm3D Player, Jutvision, Live Picture Viewer, MegaView Plug-in, MetaStream Viewer plug-in, Mirage, Octree FastView, OnLive! Traveler, Protoplay, Pulse Player, Quick3D, RealiView, SPX Plugin, Scream, Shockwave, Sizzler, Superscape Viscape Universal, Virtuoso Player, WIRL Virtual Reality Browser, WebGlide Player, WorldView, iRapid,
Image Viewers	4U2C, @OCR Tiffsurfer, Acordex ViewTIFF, BubbleViewer, CE Internet Plugin, CMX Viewer, CPC View, CSView, DjVu, Dr. DWG NetView, FastBid, GSView, GrafixView, IPIX Viewer, ImagN'Netscape Java Plug-in, ImageViewer, IsoView, Lightning Strike, Macromedia Shockwave Graphics Player, MrSID Onlind Viewer, Pagis XIFF Viewer, Pantone WebImage Viewer, Pegasus Plug-in, Prizm Plug-in, RasterNet, SVF, TIFF Surfer, ThingViewer, TruDef, Vdraft, Visual WebMap, WHIP, WebDgn, WebDocs, XVIEW Plug-in, Xara, picture-in-motion, printQuick.com plugin

Source: http://home.netscape.com/plugins

Giorgi (Thompson *et al.*, 1989), data patterns described by one interpretation can be seen by other individuals. Such identification of themes is intended to improve interpretation, not to attain validation as used in quantitative methodologies. Derived themes must not be expressed in abstract terms, but must be directly related to transcript passages that clearly point to the themes (Thompson *et al.*, 1989).

V. Qualitative Study

The respondents in this study generally use the Internet to make purchases of consumer goods including *computer hardware and software, books, videos,* and compact disks. Some of the respondents purchase *specialty food items and clothing,* but such purchases are made from already-known sellers. As described in detail in the following paragraphs, the themes that emerged from the eleven interviews include convenience, product/service information, company policy information, price, privacy, and simplicity. Respondents are identified by code.

Product/service Information and Image. In discussing her on-line purchases of special items needed because of physical disabilities, SB explained that she found that marketers' web sites "allowed me to realize what was available...more knowledgeable [than local sellers]." FC reported that second to the importance of price, he considers product information; "even more than warranty and available selection." CA is also highly influenced by available product information. She explained that "I like to know I am making the best purchase, so I study detailed information carefully and compare between brands and models. If I find a site that offers little information, I move on to another site." Similarly, DA reported that if detailed information is not available, he moves on to other sites. According to SA, "the consumer prefers to see a picture of the book. Just like

bookstores prefer to show the cover of the book instead of the spine of the book she prefers to see the cover of the book." Another respondent, SC, refers to the example of amazon.com. SC indicates that "she actually bought some books because the cover looked interesting." Some people may think that showing the cover is trivial. FB reported that "it is a disappointment if the cover of the book is not shown." Even on auction sites, such as e-bay, she prefers to go an auction site that states, "graphic available". When buying products from auctions' web-sites, she thinks that display of a picture of the product validates the credibility of the seller. These comments can be shown to relate directly to the disconfirmation of expectation theory. Online shoppers appear to have specific expectations about the convenience of using an Internet marketer's web site. If those expectations of convenience are not met, a site is quickly dismissed. Other than books, SB thinks that viewing the product is mandatory in order to picture the product that the seller is trying to describe or to see if the product suits you.

Company policy information. DA explained that he is "concerned about their shipping policy...what they ship with, like UPS or FedEx, and how much the shipping costs will be." CB reported that "I typically always look for a return policy, and I want a phone number to call if I have a problem." Other respondents, such as FC, primarily purchase items from vendors whose policies are already known and thereby avoid concern with customer-service policies on-line. As FC explained, "If I were buying from an unknown company, I would be concerned [about return/exchange policy], but I've used known companies and avoided the unknown." CA reported that "always before putting an item in my 'shopping bag,' I search for return/refund policies. If theyre not there or hard to understand, I use another vendor."

Audio and video streaming: FA says, "sound files are important. For example, CDNow.com provides links to the songs and this helps her decide on whether to buy the CD or not." However, GB finds it annoying that he is required to upgrade the version of the software that he currently uses. GC recently downloaded the Real player and the MP3 player. Other respondents, such as SB, reported "when shopping it really annoys him when the message tells him the current version of the software he has cannot play the file and he needs to upgrade." He experienced that message from a record company from Scotland. Along a similar vein, GA explained "if she really likes the product, she upgrades and listens to the product. But if not, she just doesn't go back to the site." These comments relate directly to the disconfirmation of expectation theory (lost sales). Web sites not able to recognize a customer's current software require downloading new software from their web site can really frustrate the user. As shown in Table 1, there are a number of plug-in application software for animation, audio/video.

Similarly, FC has not run into a lot of video bytes; he buys most of the videos because he see it on TV. FC reported "if sound bytes were there on the web, I would probably see it." He thinks it would be good if somebody alleviated the problem of obtaining the required software. In discussing FB's online navigation of special items needed, she explained that "for people with physical disability would be best benefited by the use of videos." GA highly emphasizes that "people could use the camera to talk to someone instead of typing something out." Using voice-activated systems would be of great help to customers with physical disabilities. Consumer shopping on the Internet should be made acceptable to everybody such as people with disabilities; also, companies should take care to see that their pages are compatible with various browsers. Streaming video links have helped SB purchase a product. But he found it hard to navigate and it took a while to load because of net congestion.

Voice over IP technology: SB experienced customer services that answered his questions through e-mail. He hasnt seen any real-time chat with the CSR. GC used videoconferencing just this past Christmas because it was offered as a package deal. GC feels that "desktop videoconferencing has become a standard." She used the text feedback but she had a tough time explaining her question. As mentioned by respondents, this new tech- nology enables customers with questions to click a button and be connected directly to a custo- mer service agent for a voice call or an on-screen chat. Web-based stores such as Cyberian Outpost Inc., CDNow.com, and Amazon.com are leaders in adopting these technologies.

Simplicity. The issue of simplicity emerged repeat- edly and emphatically through these respondents' descri- ptions of their Internet shopping experiences. As illu- strated in the following discussion, simplicity is a critical variable in on-line shopping. CA reported that "because I don't have all the latest in fast computer equipment, I need sites that are not garbled up with so much demonstration of web-page design expertise that I can't even download the site. I only use sites that I can receive in a few seconds." FC's remarks, previously discussed, about inconvenient order forms also speaks of the need for simplicity; he found that if an order form was not easy to complete, he considered it "too much work." FC said that he wants sites that are "easy to navigate. I like to find pictures of products, but a site doesn't have to have movement or be of entertainment value. It has to provide an easy shopping environment with information I need.

VI. Quantitative Study

The qualitative analysis of interviews about on-line shopping experiences of consumers points to variables of interest that have not been examined in any other researches. As suggested by Jick (1979), "the use of multiple measures may also uncover some unique variance which otherwise may have been neglected by single methods" (p. 603). In contrast to the usual triangulation method of using qualitative techniques, such as interviewing to gain additional insights into survey responses, triangulation can also employ the approach of deriving quantitatively testable hypotheses from themes expressed in interview text. Accordingly, the themes uncovered in Internet shopper's descriptions of their experiences have led to quantitative research hypotheses regarding the relative successes of Internet marketing sites and their presentations on-line. Three themesin—formation, multimedia technology, and simplicity—were

selected for analysis. The hypotheses suggest comparative presentations of these three factors between "successful" and randomly selected Internet marketers. "Successful Internet marketers" is operationalized as those appearing in Lycos' "Top 5% Firms," a list maintained by the Lycos search engine. This list is a "selective directory of top-shelf sites rated by the web's most experienced reviewers" (www.point.lycos.com, 9/22/99). As explained by Ghose & Dou (1998), the Lycos Top 5% Firms is a rating method similar to Consumer Reports, derived from reports by experts who review web sites. The reviews are based on specific guidelines that allow comparison among sites. Guidelines include content (thorough, broad, accurate, up-to-date), presentation (beauty and original design), and experience (intangible representation of the site's unique personality). These guidelines apply to each of several categories of listings, such as business or education (Ghose & Dou, 1998). The sample of randomly selected
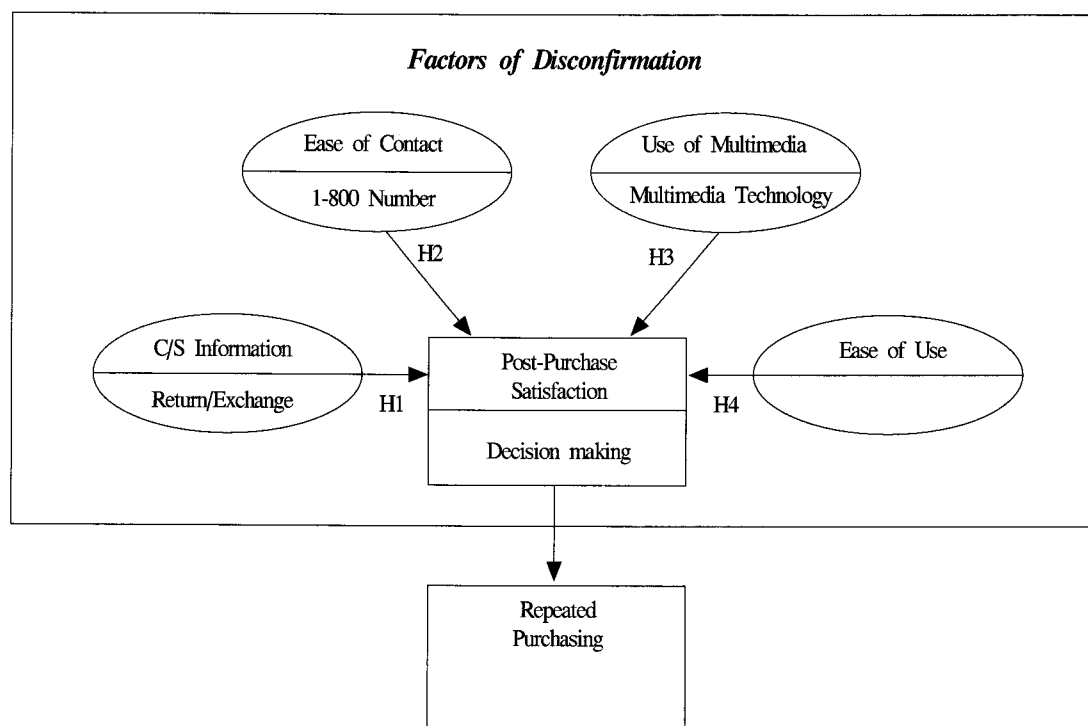
〈Figure 3〉 Research Model for possible disconfirmatory factors from themes

Internet marketers was obtained from the selections that are resulting from topic searches in the search engine Yahoo.com.

Based on final research model shown in Figure 3, hypotheses 1 and 2, respectively, deal with the importance of product and customer-service information provided by on-line marketers. Hypothesis 3 tests the use of multimedia technology. Hypothesis 4 deals with the importance of user interfaces (effortlessness: ease of finding wanted information and simplicity).

H1: Successful Internet marketers provide customer-service information such as refund/exchange policy.

H2: Contact information (i.e., phone numbers, addresses, e-mail) of successful Internet marketers is readily available.

H3: Multimedia technology is efficiently and effectively used by successful Internet marketers.

H4: The number of mouse clicks required for accessing policy or product/service information of successful Internet marketers is significantly less than the number of mouse clicks for randomly selected Internet marketers.

To investigate these hypotheses, 38 individual firms among the sites identified by Lycos Top 5% (auction type sites were eliminated) were selected from four industries (9 firms selling computer hardware and software, 8 selling books, 9 selling videos and compact discs, and 12 selling toys and games) used by the respondents previously interviewed. As comparison, 51 Internet marketers in these same industries (14 selling computer products, 12 selling books, 14 selling videos and compact disks, and 11 selling toys and games) were selected at random from the lists resulting from a search of Yahoo.com, excluding those that appeared in the Lycos Top 5% list. Table 2 presents the differences of means and standard

〈Table 2〉 Mean and standard deviation comparison

Variable	Lycos' Top 5%		Random	
	Mean		Mean	
No. of Click	2.421	1.11	3.961	1.17
Policy	0.895	0.31	0.275	0.45
Phone	0.816	0.39	0.471	0.50
Multimedia	0.184	0.039	0.3928	0.196

* denotes the figures for mean are interpreted as percentages of the number of sites which have information.

deviations between observations in both groups.

Setting variables from the qualitative analysis was used as covariates, logistic regression analysis was utilized for this study. The constructs (variables) come from the themes through study phase one (qualitative analysis). Because the independent variables are a mixture of categorical (in this case, return/exchange policy information, 800 toll-free number, and multimedia technology variables) and continuous variables (number of mouse clicks), the multivariate normality assumption does not hold. When the dependent variable has only two categories, logistic regression is affected less by the variance/ covariance inequalities across the groups. Additionally, logistic regression can easily handle the categorical variables.

In our logit model, the success/failure in the Lycos top 5% online marketers was set as a dependent variable. The stepwise model was performed by the logistic method in SAS, for each entrance of a covariate into the model. Table 3 presents all the steps of each independent variable in the model (p=0.0001) contributing significantly at 0.1 alpha level. Association of predicted probabilities and observed responses indicate that the fit of this final model is better than the previous models of previous steps of independent variable inclusion within the model (64.9% at Step 1 when Policy entered, 77.6% at Step 2 when Click entered, and 85.9% at the final step when Phone entered into the model). As Cronbachs alpha is typically

⟨Table 3⟩ Stepwise logistic model fitting information and significant variables

Stepwise	Variable entered in the model	-2Log L			Residual			Concordant rate
		Chi-square	d.f	p-value	Chi-square	d.f	p-value	
Step 0	Intercept				40.2910	4	0.0001	
Step 1	Policy	37.311	1	0.0001 *	10.9269	3	0.0121	64.9%
Step 2	Phone	43.513	2	0.0001 *	4.7987	2	0.0908	77.6%
Step 3	Click	47.505	3	0.0001 *	0.7748	1	0.3787	85.9%

* denotes significant contribution to the model fit at 0.1 level of significance.

⟨Table 4⟩ Analysis of maximum likelihood estimates comparing variables for Lycos' top 5% sites

Variable	d.f	Parameter estimate	Standard error	Wald Chi-square	Pr > Chi-square
Intercept	1	-0.7630	1.3436	0.3225	0.5701
Click	1	-0.5903	0.3063	3.7146	0.0539 *
Policy	1	2.2053	0.7327	9.0596	0.0026 *
Phone	1	1.3832	0.6311	4.8042	0.0284 *

* denotes significant contribution to the model fit at 0.1 level of significance.

used for internal consistency in non-dichotomous data, the proportion of variance attributable to the true score of the latent variable (success/failure classification), scale reliability, is checked by concordant rate (Table 3) for this study.

The final model is expressed as:

Ln $(p/(1-p))$ = - 0.7630 - 0.5903(Click) + 2.2053(Policy) + 1.3832 (Phone)

From this equation (See table 4), it can be seen that the log of the odds of being a Lycos Top 5% firm is positively related to Policy and Phone and negatively related to a number of Clicks. In other words, the log of the odds of being a randomly chosen Internet marketer is positively related to a *number of clicks* and negatively related to *policy and phone*. The equation, $P/(1-p)$ = $e^{-0.7630} \cdot e^{-0.5903} \cdot e^{2.2053} \cdot e^{1.3832}$, gives the relationship between odds and the independent variables. From the equation, we conclude that everything else is held constant. The odds of being a Lycos Top 5% firms are

increased by a factor of 9.073 (i.e., $e^{2.2053}$) for a unit increase in the refund/exchange information, by a factor of 3.988 ($e^{1.3832}$) for a unit increase in the 800 toll free phone number, and by a factor of 0.554 ($e^{-0.5903}$) for a unit decrease in the number of mouse clicks.

⟨Table 5⟩ Classification table for cutoff value of 0.5

Actual	Predicted		Total
	Significant	Non-significant	
Random	12	39	51
Lycos Top 5%	30	8	38
Total	42	47	89

The validation of the logit regression model is accomplished by the same method used for holdout samples and in multivariate discriminant analysis (MDA). The holdout sample (15 firms selected from each group) was identical for logistic regression. Table 5 gives the classification matrix, which was obtained by

using a cutoff value of 0.5. From the table it is clear that the overall classification rate of 77.7 is lower than that of MDA (79.77), meaning the logit model is much more conservative (see Table 5).

Summary of stepwise procedures indicates that all the fit statistics except multimedia technology indicate good model fit and a statistically significant relationship between the independent and the dependent variable. As illustrated in Table 3, this analysis serves to uphold hypotheses 1, 2, and 4.

VII. Discussion

This study was originally designed to learn directly from on-line consumers about web site factors influencing consumer decisions to purchase from a particular Internet marketer. Analysis of interview texts revealed several common themes (product/service and customer service information, multimedia technology, and simplicity) that were judged to warrant further investigation.

Based on overall results from the qualitative and quantitative analyses, it appears that three independent variables (information provided, number of mouse clicks, and simple navigation) are key factors in identifying successful Internet marketers. Interviewed respondents were found to proceed with an intended purchase from the first accessed site where customer service information is provided; they continued their purchase activities unless/until the site proved too complicated to navigate. Quantitative analysis confirms that a site may be dismissed from consumer consideration if too many mouse clicks are required for the consumer to find salient information.

Likewise, respondents reported that they expected to locate all the product/service and customer-service information on a site; if all the information was not found, they would not intend to buy from the site.

Quantitative analysis confirms that a significant difference exists between Internet marketers that do and those that do not readily provide customer-service information, such as a toll-free telephone number and return/exchange policy.

Finally, respondents indicated that they were likely to dismiss consideration of an Internet marketing site if it were too complicated. Although the multimedia technology factor was not found to be significant in distinguishing "successful" from randomly selected Internet marketers, the number of mouse clicks (four or fewer clicks for "successful" simplicity) did make that distinction. Significantly, more of the Internet marketers in the Lycos Top 5% than those in the randomly chosen lists were in the four-or-fewer-mouse click category.

An era of transition from text-based to multimedia-based full service has been launched. For example, 'Push to Talk' of Efusion Inc. integrates telephone into e-commerce sites, along with browser sharing between site visitors and customer service agents (Drucker, 2000). The service lets consumers or business partners initiate a phone call to a customer support or sales representatives by clicking a button on a web page. The service automatically detects whether a PC can support a voice-over-IP call. If it can not, the application initiates a call to the user on the public phone network.

Internet marketing is found to include a mix of conventional marketing distribution and advertising variables, combined with a mix of emerging electronic communication variables including human-assisted e-commerce (e.g., harnessing IP voice technology to create icons and connections for live contact and "callback" customer assistance) (Decina and Trecordi, 1999). Fitting these variables within a model of consumer behavior promises to be a daunting task. The authors believe the multimedia-based service in web-based firm is an alternative approach to communicate

with their customers in business-to-customer (B2C).

This study began with a limited number (twelve) of interviewed respondents, and the themes resulting from qualitative analysis. Their textual responses certainly may not be representative of a larger population. Most of the interviewed respondents had a relatively sophisticated level of comfort with computer use and Internet navigation. Interview research of additional on-line consumers, including those with varying levels of on-line shopping experience and more diverse demographics, can add to the findings of the present study. Laboratory experiments may offer additional in-depth understanding of critical factors that impact on-line shopping decisions.

VIII. Conclusion

This study has been an exploratory step with the question of whether the key Internet marketer web-site factors influence on-line shoppers in their purchase decisions (and thereby in their confirmation or disconfirmation of satisfaction). Through the investigation of four hypotheses concerning only three of numerous possible independent variables, the research has resulted in important implications for researchers and Internet marketers alike. The qualitative interview technique identified variables not yet emphasized or investigated by researchers; the interview demonstrated the value of qualitative inquiry in research streams generally dominated by quantitative inquiry. Likewise, the study has added a growing awareness to the value of triangulating qualitative and quantitative techniques. Finally, the research suggests that Internet marketers should emphasize on the ease of navigation, the ease of finding critical information, and the quality of the detailed information provided on their web sites.

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Appendix A
Interview Question Guide

Interviewer:

"_____ (name) has told me you have experience in purchasing consumer products on the Internet. I will be asking about your experiences and your opinions about Internet shopping."

1. How long have you been buying products on Internet sites?

2. What types (classes) of products have you purchased through the Internet?

3. How many times do you estimate you have purchased consumer products on the Internet?

4. Why have you chosen to use Internet sites to purchase these products?

5. How do you choose a company's site to use for shopping?

6. Can you tell me about a recent shopping experience on the Internet?

7. Can you tell me about your first shopping experience on the Internet?

8. What things are important to you in your decision to make a purchase on the Internet?

9. What things would lead you to decide NOT to make a purchase from a particular site?

10. What kinds (classes) of products would you NOT consider purchasing from Internet sellers, and why?

11. What would you like Internet sellers to do differently in their Internet presentations of the products they offer for sale?

12. Do you have any additional comments or observations about your Internet shopping experiences in terms of multimedia technology being used in WWW?

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If no, mention of company policies on returns, refunds, exchanges, ask about these;

13. Are you concerned about company policies such as for returns, refunds, exchanges?

    How do you handle these concerns when you shop on the Internet?

14. Are you concerned about being able to contact company personnel directly if you have questions, concerns, problems? How do you handle these concerns when you shop on the Internet?

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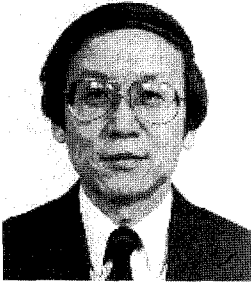
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