

Generating Web Site Traffic:
An Empirical Analysis of Web Site Visitation Behavior

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INTRODUCTION

Although there exists a variety of hierarchical models detailing the process by which advertising influences consumer behavior and purchase decisions (Vakratsas and Ambler 1999), empirical work that would document the validity of these theories in practice is relatively scarce. The original Lavidge and Steiner (1961) hierarchical model, the FCB grid, and the Rossiter Percy Grid are some examples of the widespread attempt by academic and marketing practitioners alike to clarify the stages that consumers go through during the purchase process: from high involvement products to low-involvement products (e.g. homes vs. facial tissues) and from highly informational searches to more affective/emotional acquisitions (e.g. computers vs. perfume). Researchers have debated within the literature which models apply to which purchase situations and how these models change from product-type choice situations to brand-choice situations.

In this paper, we attempt to empirically determine which hierarchical model seems to most accurately describe the process behind consumers' choice of which Web sites to visit on the Internet, and also to assess the relative effects of the communications channels which initiate this process. Billions of dollars are spent promoting brands every year, and Internet brands, in particular, are (or at least at one time, were) competing against each other feverishly to establish brand recognition and consumer awareness. Table 1 shows the amounts of money spent in the first half of 2000 supporting Internet sites. While the vast majority of it is in offline media, millions are being spent online as well. Other than advertising, commonly used communications vehicles consist of public relations to stimulate word-of-mouth, sales promotions and partnerships directing

consumers to Web sites, direct e-mail, and a variety of other methods. However, little is known about how different communications devices affect both Web site usage and the quality of the brand name. In this “Internet age,” marketers and dot-commers alike would like to know, “What gets people to visit my site, and how can I get them to keep coming back and using my site?” As researchers, we are interested in exploring the process by which this new medium attracts its audience.

Throughout the literature on advertising hierarchies, three stages have been almost universally acknowledged: thinking, feeling, and doing. Our cross-sectional study of about ninety Internet firms addresses the issue of how consumers choose which Web sites to visit and which sites they prefer, as well as the cognitive, affective, and conative mechanisms that constitute this process. Using a unique data set combined from several different sources that monitor the activities of Internet companies, we are able to operationalize measures for each of these commonly denominated stages and then to test whether, indeed, consumers do progress through them in the order hypothesized by Lavidge and Steiner or whether some other ordering is used. In this study, we use *awareness* to signal the beginning of the thought process: we assume consumers can only evaluate Internet sites of which they are aware. Then we use a measure of *brand equity* to assess the underlying preferences, feelings and thoughts of consumers toward each web site. Finally, we measure *visits* as an index of conative action. In the course of this analysis, we also investigate the comparative success of the online, offline, and public relations dollars these companies spend to promote their existence and advance their brand equity.

BACKGROUND LITERATURE

Lavidge and Steiner (1961) were the first to establish the foundations for the model now commonly known as the “hierarchy of effects” or “persuasive” model (Ambler and Vakratsas 1999). In their seminal paper, they detailed the steps, or hierarchy, that they believed consumers progressed through to translate advertising into purchase behavior (see Figure 1). They divided six hypothesized stages into three behavioral dimensions: cognitive, affective, and conative. The *cognitive* domain encompasses all the thought processes that a consumer has about a certain product or brand; the *affective* domain addresses the emotions and attitudes which a consumer possesses or displays towards a product or brand, while the *conative* dimension denotes the motives that a consumer has and the behavioral actions he performs with respect to a product or brand.

There have been very few studies testing the complete hierarchy as most have focused on the first two stages. Those that have tested the complete hierarchy have used sales as measurement of the conative dimension. In the context of Web sites, however, sales is not necessarily the appropriate ultimate measure of the success of a communications program. Many of the sites examined in our data analysis do not sell any products; a number of Internet sites exist primarily to provide informational content to the viewer. These sites continue to advertise for a higher share of “eyeballs,” nonetheless, making their desired outcome of advertising, increased visits, not increased sales. While Internet e-tailers do use advertising to pursue higher revenues, visits to these firms’ Web sites are a necessary precursor and thus should be highly correlated with these firms’ measures of success, customers and sales. What our analyses purport to

measure, therefore, is the route through which advertising influences both site visits and preference, and the effectiveness of different advertising media in furthering this goal.

Palda (1966) came out with one of the first of many attacks on the persuasive model posited by Lavidge and Steiner. Strengthened by the lack of evidence provided in a number of narrow market research studies, Palda detailed these results to support his doubts about their model: he questioned both whether consumers progressed through the stages in the order hypothesized and whether these stages occurred sequentially or simultaneously. Palda ended his evaluation by calling for a methodologically sound study to establish whether the causality inferred in the current hierarchy of effects model truly represented consumer behavioral processes.

Assael and Day (1968) provided one of the first empirical studies to refute Palda's criticisms on the aggregate level. Citing findings from previous studies that brand attitudes and attitude change are predictive of brand choice relationship on the individual level (Achenbaum 1966, Axelrod 1968, Day 1969), they endeavored to reaffirm these results with aggregate data. Using detailed survey data spanning over two years, the authors tested several models on three product categories--analgesics, instant coffee, and deodorants--to determine the effects of awareness, attitudes, and usage, on market share. While many of their regressions were inconclusive, they did find that overall, attitude was a better predictor of market share than were either awareness or usage. For a couple of the smaller, more volatile brands, however, market share was the better predictor of attitude than vice versa. This suggested that there might not be a uniform process through which advertising influences sales; hence the hierarchy might differ among product categories, and even among brands. Their findings justify an examination into which

hierarchy might best describe Internet Web site behavior. Internet businesses are a new and quickly growing sector of the economy, and it is important to understand similarities and differences in consumers' behavior between this medium and the traditional product categories.

Assael and Day were not the only researchers to respond to Palda's challenge, Aaker and Day (1971) tested a version of the traditional persuasive model (Figure 2, panel A) against a competing hypothesis of the communication process (Figure 2, Panel B) as proposed by hierarchy of effects critics. The major difference between the persuasive model and the alternative was that attitude formation, instead of preceding purchase, was conjectured to follow behavior. The authors detailed four key reasons that critics proposed a low-involvement model of Think-Do-Feel as an alternative to the traditional Think-Feel-Do model: 1) Cognitive Dissonance theory (Festinger 1957) demonstrated quite convincingly that often people infer their opinions from their behavior as opposed to only acting consistently with their attitudes; 2) many advertising messages are received under conditions of low-involvement, which leads to a change in cognition (awareness) but not attitude, that can still can increase purchase or trial probabilities (Krugman 1965); 3) many products are perceived as low-risk and these products might not require the same attitude formation and involvement suggested by the traditional hierarchy of effects before purchase, as higher-risk or more expensive products would; 4) current research practices and methodologies led to interview timing that appeared to show attitude change following, not preceding, behavior. It was unclear whether this effect was actual or only an artifact of the survey method.

Aaker and Day tested the Lavidge and Steiner model while adding additional exogenous variables to improve its predictive power. They used the established endogenous variables, awareness, attitude, and market share as dictated by the hierarchy of effects model; however they also included price as an exogenous variable to better model the variance that was unexplained by the pure hierarchy of effects variables. The study by Aaker and Day included a cross-sectional as well as time component that unfortunately we do not have in our data. The results from this examination into the instant coffee market indicated that neither the Think-Feel-Do nor Think-Do-Feel hierarchies accurately capture consumer processes. The authors offered a new hierarchy instead that represents a Think/Feel-Do-Feel model. A later individual-level choice-based study by Winer (1989) confirmed Aaker et al.'s findings that purchase does influence preference, the reverse of what the traditional persuasive model would imply.

Once empirical papers established that the traditional persuasive model did not consistently model the route through which advertising impacted market share, marketers began to question that model and search for other options. Vaughn (1979) presented one of the first unified alternatives. He created an grid, commonly labeled the "FCB grid," which suggested that consumers use different hierarchical processes for high-involvement versus low-involvement products, and a thinking versus feeling (or left brain versus right brain) approach to product consideration. Vaughn theorized that the high-involvement/thinking quadrant would lead to a traditional persuasive (Think-Feel-Do) process whereas moving towards the lower involvement quadrant might produce a Think-Do-Feel process, switching at the lowest involvement level to a Do-Think-Feel process. Vaughn then summarized some of the ideal advertising methods for products in each

quadrant. Since we only have access to advertising expenditure data and not to any ad content descriptions, we have no means of testing whether his conclusions of appropriate advertising strategies are borne out by the market data available to us.

The special feature of the Internet that makes this market quite different from traditional product categories is that unlike grocery stores, consumers are not confronted with all their options at the point-of-purchase or visitation. All the products previously studied shared similar store situations where it is reasonable to assume that awareness might not precede purchase, since a consumer might buy a completely unfamiliar product while throwing groceries into her basket (Assael and Day 1968, Aaker and Day 1971, Palda 1966, Winer 1989). On the Internet, however, consumers can only reach a Web site through links, online advertisements, or typing in the Web site address that requires awareness. The only exception to this story occurs when people inadvertently click on a banner or pop-up ad and are routed to an unfamiliar website. Half of the FCB grid as well as other hierarchies such as dissonance-attribution (Ray 1973) suggest that purchase or “Do” can take place before “Think.” While we believe awareness (the Think stage) -- whether developed through advertising, experience, or word-of-mouth -- normally takes place before visits can occur¹, some commercial studies have found a significant number of accidental mouse clickthroughs. In addition, there may be very little information processing that actually occurs before a clickthrough indicating a virtual “tie” between “Doing” and “Thinking.”

Thus, to test which hierarchy seems to be most consistent with Web site visitation behavior, we test a persuasive hierarchy, a low-involvement hierarchy, and a no-

involvement (Do-Think-Feel) model which imitates the mental processes a consumer might go through after an accidental click and Web site visitation.

CONCEPTUAL MODEL

All possible visitation routes, as explained above, are accounted for in our visitation model, which allows us the confidence to establish which model most accurately portrays consumers' progression from advertising to site visit. We continue the direction of Aaker and Day (1971) and Winer (1989) by incorporating several exogenous variables into our analysis besides advertising and price. We also examine the possibility, unlike previous models of either hierarchy, that advertising directly affects market share as well as awareness and preference. Through the creation of online banner advertising, consumers can click through to a Web site by only passing briefly, or sometimes not at all, through the awareness stage. Our proposed tests of the Internet site visitation process are shown in Figure 3.

The basic influencers of awareness are word-of-mouth, non-Internet presence measures, and advertising. Word-of-mouth represents the awareness of Internet sites that comes from the "buzz" around a site, and not any company-sponsored advertising; word-of-mouth captures the effects of personal communications and non-advertisement mentions in newspapers, magazines, and other popular media. Lagged visits is a component of word-of-mouth and should influence awareness since these visitors have already been to site and have the opportunity to tell friends and neighbors about it. Similarly, if companies have a "bricks and mortar" presence, as well as an Internet site,

¹ Although Rossiter, Percy, and Donovan (1991) suggest through their grid, the Rossiter-Percy grid, that brand awareness should be separated from cognition, unlike in the FCB grid, we believe it is logical to

we believe that increased awareness is likely to result from the additional brand familiarity and increased contact due to passing a store (i.e., Barnesandnoble.com and Borders.com), or recognizing it in non-Internet situations (i.e., ESPN.com, CNN.com). The advertising component is from both online (banner ads) and offline paid media. Finally, in the “Do-Think-Feel” hierarchy, visits affect awareness.

While many of the early advertising papers referred to the preference stage as a feeling or affective state, we operationalize this stage as brand equity. We acknowledge that brand equity incorporates some cognitive thoughts, relevance, perceived quality, etc., in addition to its primary feeling-driven or affect motivation. We use brand equity as our preference measure, however, since it is one of the primary end goals and drivers of many of these Internet companies’ ad campaigns. We believe that site quality, site loyalty, advertising, and whether a not a site is publicly traded will influence people’s attitudes towards that Web site. For quality, we feel that consumers are more likely to develop favorable attitudes towards Internet sites that they perceive as being more user-friendly and easier to navigate. Similarly, we feel that the more a consumer uses a site and ventures in-depth into its content, the more familiarity and positive affect they are likely to feel towards that site. Additionally, we hypothesize that there is more consumer confidence and good feelings developed toward firms that have taken their company public, especially if consumers equate going public with good firms and success. Again, both offline and online advertising can have a direct impact on the affect stage depending on the kind of advertising employed. Finally, in both the “Think-Feel-Do” and “Do-Think-Feel” hierarchies, awareness will impact affect. In the “Think-Do-Feel” low-involvement model, site visits will impact affect.

assume that the awareness stage can be incorporated into the cognition or think part of the FCB grid.

For the site visitation drivers, besides awareness and affect, we hypothesize that there are three possible methods by which consumers can access sites on the Web: they can type in the exact html address, they can click on an online banner ad, or they can be directed to click through to a certain site by another site on the Web. We account for the first behavior through the awareness construct, since consumers cannot type in sites they do not know. We account for the second behavior through inclusion of online advertising in the visits equation. To incorporate the last behavior into our visits equation, we provide a measure of the number of links on other sites on the Internet to each site studied.

While our study uncovers which type of hierarchy of effects is most consistent with Internet site behavior, it also has important implications for the future of Internet firms. Aaker and Jacobson (1998) showed that brand equity is a significant component in the calculation of stock price for high technology firms. Our study both illuminates the precedents of visitation as well as exploring the precedents of brand equity for high technology firms. Since brand equity has been demonstrated to be important to the financial success of a firm, it should be of great interest to researchers and practitioners alike as to what *does* determine brand equity for these Internet firms.

MODEL SPECIFICATION AND ESTIMATION

Traditional Persuasive (Think-Feel-Do) Model

We operationalize the conceptual model of the traditional persuasive hierarchy of effects model shown in Figure 3 in the following way:

$$(1) \text{ AWARENESS} = \alpha_0 + \alpha_1 \text{ONLINE} + \alpha_2 \text{OFFLINE} + \alpha_3 \text{PRBUZZ} + \alpha_4 \text{VISITS}_{t-1} + \alpha_5 \text{BRICKS} + \varepsilon$$

$$(2) \text{ BRANDEQ} = \beta_0 + \beta_1 \text{ONLINE} + \beta_2 \text{OFFLINE} + \beta_3 \text{AWARENESS} + \beta_4 \text{QUALITY} + \beta_5 \text{PGVIEW} + \beta_6 \text{PUBLIC} + \varepsilon$$

$$(3) \text{ VISITS} = \delta_0 + \delta_1 \text{ONLINE} + \delta_2 \text{OFFLINE} + \delta_3 \text{BRANDEQ} + \delta_4 \text{LINKS} + \varepsilon$$

where the variables are defined as:

ONLINE/OFFLINE: the advertising dollars spent on each type of communications media for the past three quarters (9 months) prior to awareness/visits/brand equity measurement.

PRBUZZ: a measure of the mentions an Internet firm receives in the mass media.

BRICKS: an indicator of whether or not a firm has a “bricks and mortar,” as well as Internet presence.

VISITS_{t-1}: a measure of lagged visits.

PGVIEW: the average number of pages viewed on a Web site, a measure of the interest and attention consumers display towards different Web sites.

PUBLIC: an indicator of whether or not a firm is publicly traded.

LINKS: the number of links to a site from all other Internet sites.

Given that higher values of awareness, brand equity, and visits are all favorable indications for an Internet company, we would expect that all α , β , and δ s would be positively valued.

Alternative Low-Involvement (Think-Do-Feel) Model

In this alternative model, the awareness equation remains the same, but the order and included variables of the brand equity and visits equations are changed. The three equations are as follows:

$$(1) \text{ AWARENESS} = \alpha_0 + \alpha_1 \text{ONLINE} + \alpha_2 \text{OFFLINE} + \alpha_3 \text{PRBUZZ} + \alpha_4 \text{VISITS}_{t-1} + \alpha_5 \text{BRICKS} + \varepsilon$$

$$(2) \text{ VISITS} = \beta_0 + \beta_1 \text{ONLINE} + \beta_2 \text{OFFLINE} + \beta_3 \text{AWARENESS} + \beta_4 \text{LINKS} + \varepsilon$$

$$(3) \text{ BRANDEQ} = \delta_0 + \delta_1 \text{ONLINE} + \delta_2 \text{OFFLINE} + \delta_3 \text{VISITS} + \delta_4 \text{QUALITY} + \delta_5 \text{PGVIEW}_t + \delta_6 \text{PUBLIC} + \varepsilon$$

where the variables are as described above. Once again, as above, we would expect that all α , β , and δ s would be positively valued.

Alternative No-Involvement (Do-Think-Feel) Model

In this alternative model, the visits equation becomes the first equation and offline advertising influence is removed since inadvertent mouse clicks are never the result of

offline advertising. The awareness and brand equity equations remain the same except that the lagged visits in the awareness equation is the visits from the first equation, it is no longer an exogenous variable. The three equations are as follows:

$$(1) \text{ VISITS} = \alpha_0 + \alpha_1 \text{ONLINE} + \alpha_2 \text{LINKS} + \varepsilon$$

$$(2) \text{ AWARENESS} = \beta_0 + \beta_1 \text{ONLINE} + \beta_2 \text{OFFLINE} + \beta_3 \text{PRBUZZ} + \beta_4 \text{VISITS}_t + \beta_5 \text{BRICKS} + \varepsilon$$

$$(3) \text{ BRANDEQ} = \delta_0 + \delta_1 \text{ONLINE} + \delta_2 \text{OFFLINE} + \delta_3 \text{AWARENESS} + \delta_4 \text{QUALITY} + \delta_5 \text{PGVIEW}_t + \delta_6 \text{PUBLIC} + \varepsilon$$

where the variables are as described above. Once again, as above, we would expect that all α , β , and δ s would be positively valued.

Model Estimation

To test these models, we analyzed each sets of three equations simultaneously using three-stage-least squares (3SLS) estimation. We feel 3SLS is appropriate since the process we are modeling is a causal hierarchy where each stage influences the next and that the error terms between the three equations are correlated. If the factors above indeed describe the data, 3SLS will provide more efficient estimates. In the case that regressions or errors are not at all related, this generalized least squares procedure will produce the same estimates as OLS.

We chose these model specifications above based on their superiority for analyzing multiple hierarchical stages simultaneously as well as their computational feasibility, given our data set. In the past, two cumulative effects models had been commonly used to test the accuracy of a traditional hierarchy of effects model. (Assael and Day, 1968) The linear cumulative model ($Visits_t = c_0 + c_0BE_t + c_1BE_{t-1} + \dots + c_{n-1}BE_{t-n} + e$) was not an option, given the cross-sectional-- not time series-- nature of our data. The second model, Koyck's distributed lag model ($Visits_t = c_0 + c_0BE_t + \lambda Visits_{t-1} + e$) was unhelpful since there was such a high correlation between site visits in time t and $t-1$ that the importance of any other variables in the distributed lag model paled in comparison. Given the previous research, our model is equally attractive to those with cumulative effects: it produces high system-wide R^2 s and explains much of the variance inherent in site visit behavior, even without extensive lagged effects.

DATA

Our data set contained eighty-eight Internet companies spanning a broad spectrum of Internet company types: search engines, specialized interest sites, retail e-commerce sites and business-to-business e-commerce sites (for a complete listing see Table 2). The time period, t , we are examining in our analysis, is September 1999. The variables were compiled from several different sources. This allowed us to avoid any spuriously high significance between visits and awareness or visits and attitudes due only to measurement techniques. (Assael and Day, 1968) We briefly discuss each regression variable below.

Advertising (Online, Offline) – These measures recorded the spending by each Internet company on a variety of online and offline media for the 9 months preceding the endogenous variables’ measurement. The offline media included radio, television, cable, outdoor media, newspapers, and magazines. These figures were collected by Competitive Media Reporting.

Brand Equity (Brandeq) – The brand equity measure is the weighted compilation of many measures of Web site attractiveness -- distinctiveness, relevance, familiarity, and personal appeal – collected by Landor Associates, a consulting firm specializing in measuring brand equity. This measure was collected by a random sample of over 6,700 respondents in the summer of 1999.

Web Site Visits (Visits) – This measure was compiled by Media Metrix and provided the number of visits in thousands that a Web sites received over the course of a month from the Media Metrix panel. Media Metrix randomly selects Web users from around the country to participate in their panel through the installation of Web-monitoring software onto their computers, both at home and at work, so that they can accurately measure the relative popularity of hundreds of Web sites.

Public Relations Mentions (PRbuzz) – This measure is the number of mentions in the top five of six nationally relevant² publications. The buzz measure provides a word-of-mouth measure that reflects the relative amount that the average Web user might have heard in the month immediately proceeding measurements about the different Internet companies studied.

² These publications were determined by *Business Week* in a ranking of Hottest Tech Media: The Influencers (June 2000).

Average Pages Viewed (Pgview) – This measure was also collected by Media Metrix from their panel and indicates the average number of pages viewed by visitors to each Web site. This value provides a relative measure of the loyalty and attention of Web site users by giving the depth of interest they displayed at the site.

Average Web Site Quality (Quality) – Using data collected from two independent undergraduate judges unaware of the purpose of this study, we were able to collect and average many different measures of the quality of each individual Web site. Measures included, but were not limited to, ease-of-use, display of information, search capabilities, ease-of-download, technical support (if applicable), and login speed and ease (if applicable).

Publicly Traded Companies (Public) – This is an indicator variable that represents whether these Internet companies or their parent companies were publicly traded companies on the NASDAQ or DOW as of August 31, 1999.

Links to Internet Web Site (Links) – This variable represents the average number of links from any other location on the Internet to an Internet company's Web site. The numbers were obtained through the search engine, Google.

Non-Internet Presence (Bricks) – This is an indicator variable that represents whether these Internet companies have stores or same-branded businesses that are not Internet-based.

Although the most significantly examined variables were collected in 1999, for the purposes of this research, two of our measures, quality and links, were collected in 2000 and therefore do not match in terms of time period. We assume that there are few significant changes from 1999 to 2000 in Web site quality and number of links and that

when this does occur, it is not correlated with any of our other variables and can thus be captured in our error term.

EMPIRICAL RESULTS

All Sites

A comparison of the results for all three hierarchy specifications for all 88 Web sites is shown in Table 3. The models were compared using three different criteria: system fit (R^2 and MSE) and a predictive test using a calibration and holdout sample (two-thirds vs. one-third of the 88 sites). As can be seen, the low-involvement hierarchical model performs significantly better than the persuasive or no-involvement model on all measures. Similarly, graphs of predicted versus actual site visits for all models support the fact that the low-involvement model appears to do a better job of prediction overall. Thus, Web site behavior is best captured by a process involving awareness then action (visits) and finally affect (brand equity). For this reason we give the detailed results of the low-involvement model only (Table 4).

The most significant factor in building awareness is the word-of-mouth generated from lagged visits. Clearly, people tell other people about Web sites they like. Interestingly, offline advertising has a moderately ($p < .10$) positive effect on awareness as well. Thus, overall, the widely-criticized amounts of money companies were spending on advertising appears to be money well-spent. Other less significant factors in building awareness are lagged public relations ($PRBUZZ_{t-1}$) and the existence of an offline

presence (BRICKS). The latter is perhaps intuitive, but supports the natural advantage offline companies have on the Web.

The results from the visits equation shows a very strong impact of awareness, the preceding variable in the “Think-Do-Feel” hierarchy. This supports the notion that Web visitors require a solid awareness base prior to visiting a site. Links from other sites are also very important in this equation. Thus, partnerships and paid sponsorships that create these links appear to be sound investments. Perhaps surprisingly, online advertising is also a strong contributor to site visits despite low clickthrough rates. Offline advertising has a more moderate direct impact on site visits relative to awareness which is intuitively correct.

While site visits from the previous equation has an important impact on brand equity, no other variables seemed to be helpful. These results indicate that either our model and data have not captured the important elements that create brand equity in the minds of consumers, or alternatively, that unlike other products, awareness and usage alone comprise the majority of how consumers choose their loyalties on the Internet.

Several conclusions can be drawn from this analysis. First, based on the fact that the low-involvement model is most consistent with the data, the importance of spending marketing funds to build awareness is underscored. Second, the strong lagged effect of visits in the awareness equations highlights the importance of getting people to the Web site. This “gets the ball rolling” in terms of building awareness that subsequently feeds into further visits and ultimately into brand equity. Third, it appears that investments companies have made in online and offline advertising, public relations, and partnerships have had an impact on Web visit behavior. Awareness can be built with offline

advertising and public relations and by companies with an offline presence. Online advertising and links from other sites strongly affect site visits. Finally, results from the model show that brand equity is built over time through site visits and not directly from either offline or online advertising. Therefore, a message from these results is that marketing funds are better spent building awareness and site visits and not directly on brand building. This is obviously contrary to the feelings of many Internet company executives who spent a considerable amount of money and time worrying about building a brand name. Our model indicates that this can happen but only through awareness and site visits, that is, over time from experience and strong site usage.

Retail Sites Only

Because of the heterogeneity of the sample of sites, we also estimated the models on the subsample of 45 retail sites. Our hypothesis is that due to the more involved nature of buying rather than simple information seeking, the results would be more favorable to the traditional “Think-Feel-Do” process. As can be seen from Table 5, not only does this happen but all the models including the no-involvement model (“Do-Think-Feel”) perform quite similarly on this sample.³ Although the persuasive model has the highest MSE, all models have the same system-wide R^2 and comparable graphs of predicted versus actual visits. We do not show the parameter estimates as they differ between model formulations and are therefore difficult to synthesize.

The similarities between the three models for e-commerce sites imply that there might be a fundamental difference in how consumers approach these types of sites. While for all sites the low-involvement dominated the other two, for retail-only sites no

model is clearly superior. This leads us to make several conjectures. First, the no-involvement model might be modeling a separate segment within customers that is more prevalent in the retail setting since those types of sites are more likely to use banner type advertising. Secondly, within the purposeful visits, denoted by the awareness (Think stage) first, when, as in the FCB grid, consumers move from low-involvement to high-involvement processing, the order in which they pass through the three stages change. We believe that the persuasive and low-involvement models might seem equally appropriate for retail sites because consumers are shifting more cognitive resources to considering which Web sites to purchase from than they did for which Web sites to visit only. The parallel results, thus, might capture the transition as consumers move from a Think-Do-Feel model to the higher-involvement Think-Feel-Do framework. Lastly, it also plausible that the model for e-commerce sites is more similar to the revised recursive model proposed by Aaker and Day (1971), where the affect-development and behavior steps are continually reinforcing each other, than it is to the persuasive or low-involvement hierarchies.

CONCLUSION

We conclude that after examining the performance of the persuasive hierarchy model, the low-involvement hierarchy, and the no-involvement model, the low-involvement hierarchy best models the process through which advertising affects awareness, site visitation and brand equity on the Internet. Specifically, offline advertising appears to increase site visitation through its significant influence on

³ Due to the small sample size of retail sites, we could not perform any holdout predictive testing.

consumer awareness, while online advertising directly leads to increased Web site traffic. Though advertising can increase brand equity through its affect on site usage and awareness, neither online nor offline advertising clearly contributed to the immediate development of brand equity for Internet firms. Thus, the emphasis on advertising spending for Web sites should be on awareness and traffic-building and not on brand building. The latter results from the former.

Other marketing spending besides advertising was also found to be effective for both awareness and site visits. Specifically, investments in partnerships and public relations were found to be effective in building awareness and site visits.

The main message about brand equity for Web sites is that it must be built over time rather than created instantaneously with heavy spending. The factor in our model affecting equity is site visits. This implies that the marketing activities including advertising, publicity, and partnerships eventually pay off in increased brand equity, but only through awareness and site visits. Thus, equity is positively affected by building a solid foundation over a period of time. This has been the experience of the myriad number of Internet companies that spent millions on TV and other media focusing on image and other elements of equity only to find that the money did not generate traffic and ultimately, sales. Interestingly, many experienced Internet executives like Mark Andreesen (developer of Netscape and founder of Loudcloud) have been quoted in the media saying just this.

We found slightly amended results for the retail e-commerce sites analysis. We discovered that for these higher-involvement sites, we could not rule out any of the three models, that is, they were approximately equally consistent with the data. The similarity

in fit between the three models for e-commerce sites implies that there might be a fundamental difference in how consumers approach these types of sites.

Given the low-involvement and low-risk to consumers required to visit different Internet sites, our results support the appropriateness of the alternative to the traditional persuasive model for describing visitation behavior to most Web sites. Although the evidence also indicates that affect and attitudes contribute to determining retail e-commerce site usage by consumers, this effect never takes precedence over the primary importance of awareness. What we conclude from all of our findings is that high brand awareness is essential to an Internet firm's survival.

As stated earlier, the Internet market is distinguished from many other product markets because of its high reliance on informed consumers. When consumers shop for many other product categories, they see the product in front of them before they decide to choose it. On the Internet, however, consumers rarely are allowed to select from an entire universe of appropriate Web sites; rather, they must select one that is known to them, or is prompted by another Internet Web site on their screen. While we cannot evaluate the nature of the advertising referred to in this study, we can advocate strongly that, based on these results, Internet advertising should focus primarily on inducing the customer to visit the Web site and not on building a favorable impression. Web site loyalty and brand equity appear to develop chiefly through experience and usage, and not through positive advertising messages. Future research should focus on the types of advertising messages and communications vehicles that promote consistent brand/site name recall as well as encourage site interest and visitation.

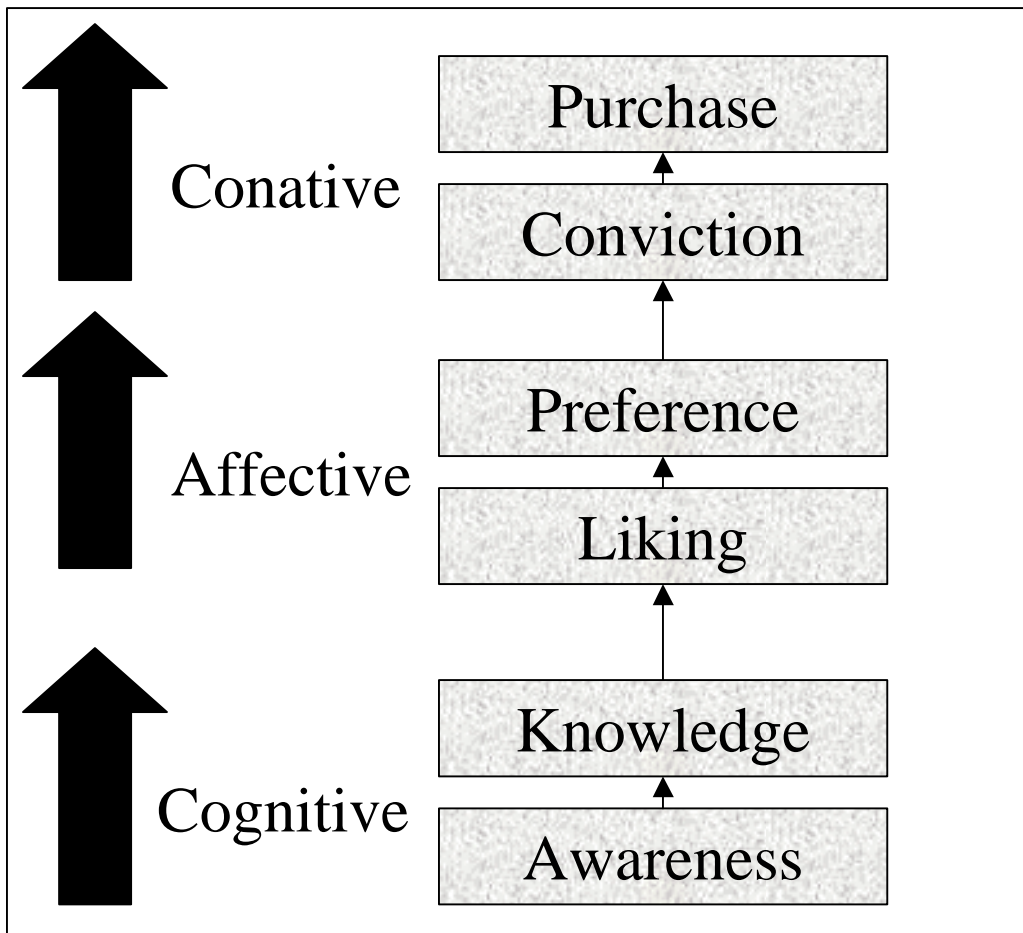
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Figure 1

The Original Lavidge-Steiner Persuasive Hierarchy



Traditional Hierarchy-of-effects Hypothesis

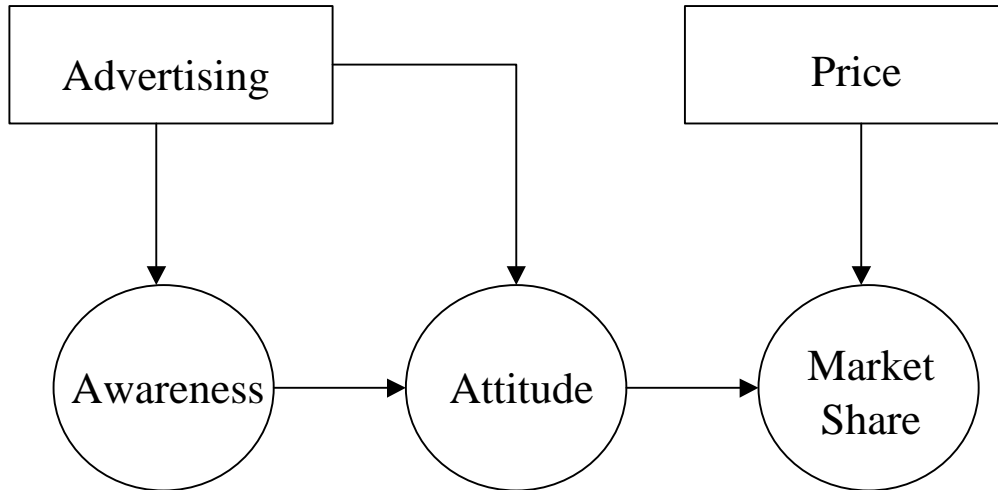


Figure 2: Panel A

Alternative Hierarchy-of-effects Hypothesis

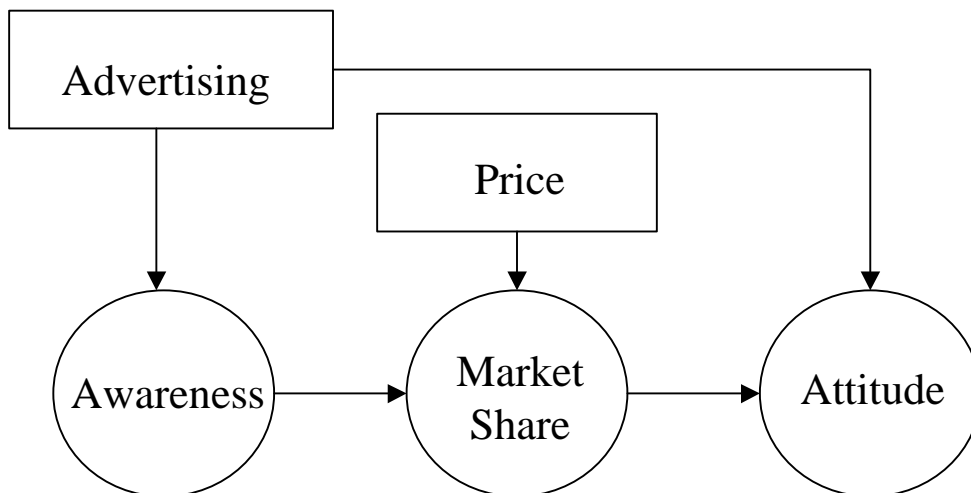


Figure 2: Panel B

Tested Internet Hierarchy-of-effects Hypotheses

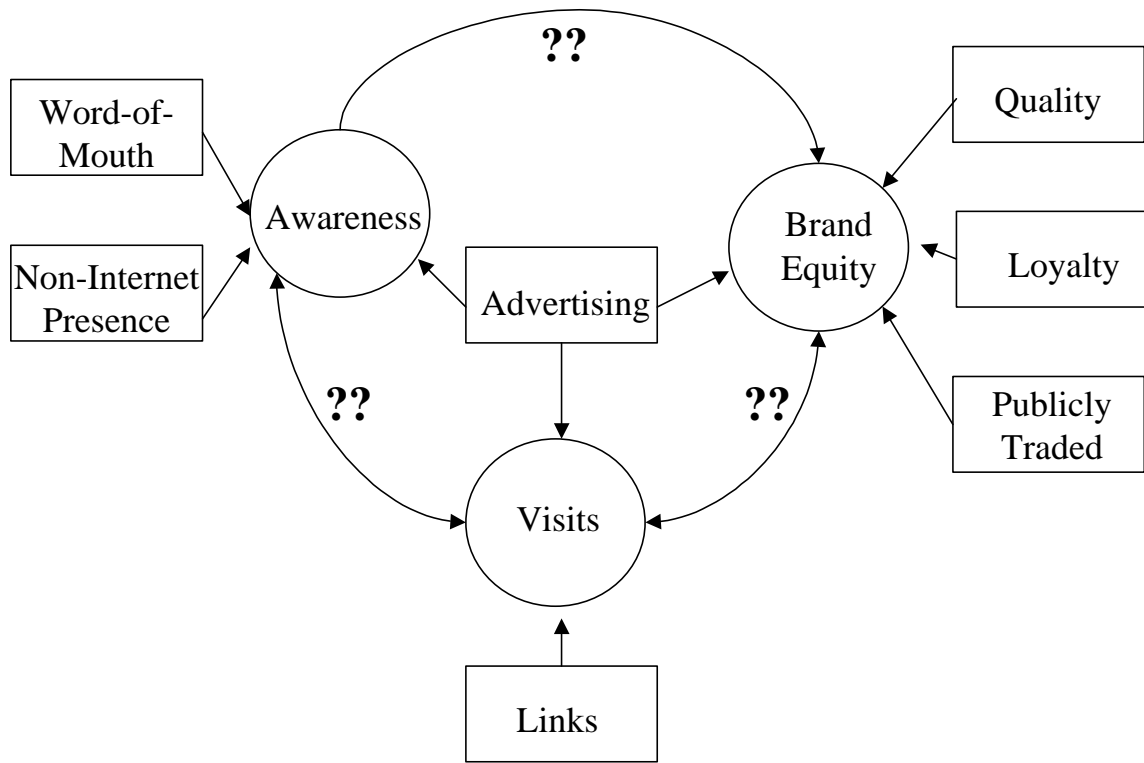


Figure 3

Table 1

Online and Offline Advertising Spending:
January-June 2000 (000's)

COMPANY	ONLINE	OFFLINE	TOTAL
MICROSOFT	\$13,690	\$149,235	\$162,925
AMERITRADE	7,659	83,991	91,650
DATEK ONLINE	2,894	66,051	68,945
GEN'L ELECTRIC	3,093	55,032	58,125
E-TRADE	3,201	54,366	57,567
PRICELINE.COM	200	51,406	51,606
AOL	4,860	48,000	52,860
FMR CORP.	5,495	40,110	45,605
MORGAN STANLEY	2,015	35,712	37,727
IWON	0	32,636	32,636

Source: *Advertising Age*, September 25, 2000, p.26.

Table 2

List of Internet Companies Used

About.com	Compuserve	Infospace.com	Salon.com
Altavista	Datek	Inktomi	Search.com
Amazon.com	Discover Brokerage	iVillage.com	Sega.com
America Online	Doubleclick	Lycos	Snap.com
Ameritrade	Drugstore.com	Mapquest	SonicNet
Angelfire	E*Trade	Microwarehouse	Stamps.com
Ask Jeeves	Earthlink	Mindspring	The Motley Fool
@Home	Ebay	Monster.com	Theglobe.com
Auto-by-tel.com	Efax	MP3.com	TheStreet.com
BabyCenter	Egreetings	MSN.com	Ticketmaster.com
Barnesandnoble.com	ESPN.com	MTVonline	Time.com
Beyond.com	Etoys	Netgrocer	Toysrus.com
Blue Mountain Arts	Excite	Netscape	Tripod
Buy.com	GamePlayer.Com	Network Solutions	uBid
Carpoint	Gamespot.com	Onsale.com	USAToday.com
Cdnow.com	Geocities	Outpost.com	Verio
Charlesschwab.com	Go Network	Peapod	WebCrawler
CheckFree	Go2Net	PlanetRX	WebTV
CitySearch.com	Headhunter.net	Priceline.com	Webvan
Clickrewards	Hotbot.com	Prodigy Internet	Women.com
CNET	Hotmail	Real Networks	Xoom.com
CNN.com	HotWired	Saba	Yahoo

Table 3

Measures of Fit: All Sites

<i>Model Hierarchy</i>	<i>Systemwide R²</i>	<i>System Weighted MSE</i>	<i>Predictive MSE</i>
<i>Persuasive Hierarchy (Think-Feel-Do)</i>	.56	3.56	71E6
<i>Low-Involvement Hierarchy (Think-Do-Feel)</i>	.66	.89	61E6
<i>No-Involvement Hierarchy (Do-Think-Feel)</i>	.55	3.42	81E6

Table 4
Empirical Results: Low-Involvement Hierarchy, All Sites

<u>For All Internet Sites:</u>	<u>Think-Do-Feel</u>
Dependent Var: AWARENESS _t	
ONLINE _(t,t-9)	-2.2E-6 (4.6E-6)
OFFLINE _(t,t-9)	3.4E-6** (2.0E-6)
PRBUZZ _{t-1}	1.36* (.88)
VISITS _{t-1}	.02*** (.004)
BRICKS	74.0* (51.04)
Dependent Var: VISITS _t	
ONLINE _(t,t-9)	.02E-2*** (.01E-2)
OFFLINE _(t,t-9)	-.08E-3* (.05E-3)
AWARE _t	19.54*** (4.24)
LINKS	.02*** (.005)
Dependent Var: BRANDEQ _t	
ONLINE _(t,t-9)	-.04E-6 (.09E-6)
OFFLINE _(t,t-9)	.05E-6 (.04E-6)
VISITS _t	.06E-2*** (.007E-2)
QUALITY	.17 (.25)
PGVIEW _t	.02 (.02)
PUBLIC _t	.06 (.81)
Systemwide R ²	.66
System Weighted MSE	.89
Predictive MSE	61E6

***p<.05, **p<.10, *p<.15

Table 5

Measures of Fit: Retail Sites only

<i>Model Hierarchy</i>	<i>Systemwide R²</i>	<i>System Weighted MSE</i>
<i>Persuasive Hierarchy (Think-Feel-Do)</i>	.71	4.04
<i>Low-Involvement Hierarchy (Think-Do-Feel)</i>	.70	.9
<i>No-Involvement Hierarchy (Do-Think-Feel)</i>	.72	3.75