Extending the Dual Mediation Hypothesis into Investor Relations Websites:

Effects on Investors’ Intents

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ABSTRACT

This article proposes a new model to predict the behaviour of individual investors after visiting a corporate Website. In particular, we propose a modified version of the Dual Mediation Hypothesis (DMH) model to evaluate attitude formation of individual investors, and subsequent effects of attitudes on their behavioural intentions. Previous studies on corporate communication on the Internet only focused on the physical aspects of Website attributes, and neglected the importance of meeting the information needs of individual investors. Due to increased public confidence in personal finance, Investor Relations (IR) Websites can effectively act as a new venue to court individual investors. We propose that the effectiveness of IR Websites can be measured by investors’ positive attitudes formed online.

Keywords: Integrated Marketing Communication; Consumer Behaviour; Attitude; Shareholders; Electronic Marketing.
INVESTOR RELATIONS ON THE INTERNET

When it comes to corporate communication, the Internet has enabled companies to build relationships with customers easily and quickly by offering interactivity, dynamic content and personalised information through their corporate Websites. Furthermore, Websites provide a control channel through which companies can communicate and disseminate information to the public. It is vital for a company to have an integrated marketing, public relations, and information technology strategy to develop a lasting, value-added presence online (McCarthy, Aronson & Petrusch 2004; Australasian Investor Relations Association 2006). The role of Investor Relations (IR) must also reflect this dynamic change in corporate communication that allows companies to establish dialogue with investors.

IR on the Internet can act as a specific instrument for reducing information asymmetry, and in turn lower agency costs (Ashbaugh, Johnston & Warfield 1999; Ettredge, Richardson & Scholz 2002). For instance, traditional paper-based disclosure has important limitations and associated costs. With the increase of investor geographic dispersion, the paper form has become increasingly expensive and limited in capacity to reach the users of information. In contrast, Internet disclosure can be cost effective, fast, flexible in format, and accessible to all types of users within and beyond national boundaries (Debreceny, Gray & Rahman. 2002). Therefore, corporate reporting on the Internet partially remedies this information asymmetry problem by enabling investors to obtain important information easily and at low cost.

Members of the investment community including institutional investors, individual investors and financial analysts are now surfing the Internet to seek important information and evaluate investment choices (Loranger & Nielsen 2003). Notwithstanding other important stakeholders, corporate Websites can strategically be used to meet the needs of individual investors. Information on IR Websites should be presented in the format that individual investors can easily access and understand, because unlike professional investors, their demographic and educational backgrounds are diverse.
Due to considerable increases in equity holdings, it has become increasingly important for companies to "court" individual investors. In 2006, approximately 7.3 million people, or 46% of the Australian population owned shares in one form or another (Australian Stock Exchange 2007). Furthermore, income from all forms of investment contributed as much as 8.3% to the mean income of each Australian in 2000-2001 (Australian Bureau of Statistics 2005). This empowerment through personal finance has become more evident with increases among the numbers of working individuals who opt for independence by choosing investment vehicles in their pension plans (Byrne 2004); such as 401(k) plans in the US (Holden & VanDerhei 2006) and 'Accumulation Super' in Australia (Brown 2002).

Due to the importance of leveraging online presence and the increasing trend in personal finance as previously discussed, we propose a new model to predict investors' behaviours resulting from visiting IR Websites. The rest of the article is structured as follows. Firstly, we discuss the motivation for this research. Then, we consider the importance of courting individual investors. Next, we discuss the literature on attitude formation as a result of responding to a persuasive message and its effects on behavioural intentions. Following this, we introduce a new conceptual framework, and finally discuss some limitations of the model in the conclusion.

**MOTIVATION**

Literature related to the use of the Internet in corporate communication has grown in the last decade (Esrock & Leichty 2000; Stuart & Jones 2004; Jo & Jung 2005). However, there appears to be a lack of research on the information needs of users of this medium (Quagli & Riva 2005). For example, earlier studies on corporate disclosure on the Internet can be described as 'descriptive', presenting a review of the information content and format features of corporate websites (e.g., Gowthorpe & Amat 1999; Hedlin 1999; Deller, Stubenrath & Weber 1999; Ettredge Richardson, & Scholz 2001). Slightly overlapping with the earlier phase, researchers in the area moved into an 'explanatory phase' to investigate the determinants of corporate reporting on Websites (e.g.,
Ashbaugh et al. 1999; Craven & Marston 1999; Pirchegger & Wagonhofer 1999; Debreceny et al. 2002; Ettredge, Richardson & Scholz 2002; Marston 2003; Marston & Polei 2004). There are also several normative studies that review corporate Websites, identify significant trends and recommendations from accounting professional bodies that may make corporate Website more effective (Lymer 1999; Financial Accounting Standards Board 2000; Beattie & Pratt 2003).

In general, most of the previous studies in this area have focused only on the supply side of online corporate reporting. However, in other areas such as internet banking, mobile commerce and decision support systems, the effectiveness of an adoption of a new innovation is normally evaluated through user satisfaction or the success of task completion. On this demand side, these studies normally employ frameworks including Theory of Reasoned Action, Technology Acceptance Model and Diffusion of Innovation model (e.g., Lin & Lu 2000; Agarwal & Venkatesh 2002; Venkatesh, Morris, Davis & Davis 2003; DeLone & McLean 2004; Schaupp, Fan & Belanger 2006). Clearly, effective Website design requires an understanding of how people perceive the Website, for perception drives attitudinal and behavioural responses (Singh, Dalal & Spears 2005). Therefore, we believe that the effectiveness of corporate communication on the Web should be evaluated based on visitors’ attitudes toward Websites.

Although there are already several studies that evaluate the effectiveness of Internet corporate reporting as perceived by users (e.g., Hodge 2001; Beattie & Pratt 2003; Gowthorpe 2004; Quagli & Riva 2005; Hodge & Pronk 2006), these have not particularly looked into the needs of individual investors. Individual investors often lack direct and easy access to specialized databases like Bloomberg, Fortune and Telekurs, so availability of information on Websites that is relevant to their needs, provide valuable support for them (Quagli & Riva 2005). Since the Internet has greatly levelled the playing field between individual investors and professional investors, companies must pursue varied strategies to attract greater share purchases from individuals (Vogelheim, Schoenbachler, Gordon & Gordon 2001). Therefore, any research that determines what characteristics contribute to a successful investor experience on corporate Websites should be useful for both academics and practitioners.
COURTING INDIVIDUAL INVESTORS

While institutional investors' increasing dominance of corporate investment has led to recent investigations of their needs (Romano 1993; Sundaramurthy & Rechnier 1997), little has been established concerning the motivation of individual shareholders, who continue to hold almost half of the equity in American corporations (Ryan & Buchholtz 2001). Many people assume that brokers or financial advisers make most trading decisions; therefore few grasp the independence of the typical individual shareholder's investment decisions. The majority of stocks owned by individuals are held by affluent investors, only 10 percent of whom delegate 'some or all' authority over their investments (Shiller 1984). One of the major reasons for recent trends in the empowerment of personal finance is the proliferation and widespread availability of low-cost online brokers that facilitate online trading by performing basic front-end transaction tasks (Elliot 2006). This online approach of personal finance has prompted individual investors to take personal control over their investments at an increasing rate (Schwartz & Karpinski 1999; Looney & Chatterjee 2002).

As more and more individuals flock to the marketplace, publicly traded companies must engage in strategies to court them. Of the executives surveyed by Vogelheim et al. (2001), nearly 80 percent said that individual investors are important or very important in their management of stock values. Individual investors are also known by their aggressiveness and overconfidence in trading (Ryan & Buchholtz 2001; Choi, Laibson & Metrick 2002; Uchida 2006), and tapping into this group of investors can encourage more investments into the company at a very low cost. Investors in general are also demanding more transparency in corporate reporting as well as in corporate governance. Therefore, management’s governance obligations may well be more conveniently met through new media such as the Internet.

The main objective of the use of the Internet for IR activities is to provide individual investors with comprehensive and timely information that was previously available only to a selected group of interested parties, such as institutional investors and analysts (Ettredge et al. 2001). These interested parties can then make decisions based as much as possible on the information disseminated via the sites. Since interference from third parties such as financial analysts or stockbrokers is avoided,
liquidity in share trading can be expected, which is valuable to companies. After an investor has had a positive experience completing tasks on a particular Website, he can then decide to further research the company either by revisiting the Website again, or by acquiring 'offline' information.

ATTITUDES TOWARD WEBSITES

In the context of the dilution of informational value due to the vast amount of information available online, companies should be preoccupied with enhancing websites' ability to influence visitors' purchase or visitation decisions. Particularly, investors can be convinced to invest in the companies, or at least to spend more time in their subsequent visits to the companies' Websites. The more times an investor visits a corporate Website and the longer he views a page increases the likelihood that he will view the company as being a good investment prospect. Since reporting via Websites is generally voluntary, companies can select certain favourable information and present it in a user-friendly manner. Furthermore, by providing clear and understandable information through corporate Websites, an effective IR function can minimize investors’ risk and influence their attitude to, and confidence in the company (Gruner 2002; Thompson 2002).

Attitude is defined as a predisposition to respond in a particular way toward a specified class of objects (Rosenberg 1960). Attitude has become a continuing area of interest for social scientists; the digital world is no exception. The literature indicates a user’s prior positive attitude toward information systems increases the actual use of the system (DeSanctis 1983). The same evidence is also found in the use of commercial Websites (Teo, Oh, Liu & Wei 2003). Since commercial Websites are designed to meet different goals (Schaupp et al. 2006) and specific pages (e.g., product-related, FAQs, 'about us' and IR) within the Websites may also have different objectives, attitudes from all respective users are relevant to measure the success of a company’s online presence. Moreover, most of Web users are goal-driven (Hoffman & Novak 1996; Nielsen 1999); thus, companies should balance their Web design to meet different needs of these users. One common way is to design different pages such as 'product information', 'feedback' and 'investor relations' pages.
targeting at the specific needs of different users. Driven by the objective to evaluate the effectiveness of IR-related pages, we therefore propose a conceptual framework based primarily on an advertising attitude formation model.

CONCEPTUALIZATION

Effectiveness of IR Websites can be assessed through favourable attitudes formed toward these sites and toward companies’ images as result of positive experience gained by users. An advertising attitude model can be employed to meet this objective because Websites, like advertisements, are used to provide repeat information and trigger an audience’s behaviour (Ducoffe 1996; Nielsen 1999; Teo et al. 2003; Karson & Fisher 2005). Research indicates that the persuasive impact of a communication is determined by spontaneous thoughts (i.e., cognitive responses) and feelings (i.e., affective responses) experienced by the audience as they process the communication. These internal responses that support or contradict the message are supposed to mediate the effects on beliefs, attitudes and behaviours. Of many attitude formation models, the Dual Mediation Hypothesis (DMH) model proposed by MacKenzie, Lutz & Belch (1986) has received wide empirical support. The original DMH model is depicted in Figure 1.

[Insert Figure 1 here]

The model proposes that the relationship between brand cognition and attitudes represents the central route, whereas the path from advertisement to brand attitudes reflects a peripheral route. The first two links, i.e., \( C_{ad} \rightarrow A_{ad} \) and \( C_b \rightarrow A_b \) represent how thoughts (cognitions) are believed to influence attitudes as predicted by the Theory of Reasoned Action. The DMH incorporates the central and peripheral routes to attitude change proposed by Petty and Cacioppo (1981) in the Elaboration Likelihood Model (Moore & Lutz 2000). The central route to persuasion is represented by the indirect path operating through brand cognitions (i.e., \( A_{ad} \rightarrow C_b \rightarrow A_b \)). In the first step of the central route, exposure to an advertisement is presumed to lead to brand-relevant thoughts. In turn, cognition related
to the brand affects brand attitudes. In contrast, the direct $A_{ad} \rightarrow A_b$ path represents the peripheral route of persuasion. When users’ need for cognition is high, their attitude is normally formed via the central route and conversely, the attitude of users with low need for cognition is formed via the peripheral route (Petty & Cacioppo, 1984). Numerous studies in marketing and consumer behaviour have found support for the central and peripheral routes to persuasion contained within the DMH for the prediction of purchase across various media and product categories (Brown & Stayman 1992). Given that the fundamental processes of attitude formation and change should not vary between on- and offline contexts, we expect that the general DMH model will hold for IR Websites.

Some reasons to support the adoption of the DMH model in evaluating the effectiveness of IR Websites are explained next. Firstly, the benefits of a Website extend beyond merely increased sales and improving image; as can only be achieved through an advertisement. However, relationship building with relevant stakeholders can easily be achieved through, and is a more recent focus of corporate Websites (Esrock & Leichty 2000). Secondly, Internet technology can integrate text, audio and visual persuasive messages, enabling visitors to enjoy some aesthetic feelings. Users can also control what information to find, ignore irritating content and repeat a particular message at their convenience. Hence, we predict that attitude formation as a result of persuasive communication via corporate Website is more powerful than that achieved via a traditional advertisement. In the case of IR Websites, one can compare interactive and easily available financial information on corporate Websites with the traditional, static annual report. Therefore, we propose the first modification to the original DMH model by substituting 'advertisement' with 'IR Website' as depicted in Figure 2.

![Insert Figure 2 here](image-url)

Unlike traditional advertisements, a user can always revisit a Website to re-evaluate its content, design, usefulness and credibility. With a Website, audiences do not have to recall the message, or any other interesting aspects that might affect their attitudes toward the object because the site allows the users to control the information that is presented, the order in which it is presented and the duration for which they will consider the information (Bezjian-Avery, Calder & Lacobucci 1998;
Ariely 2000). Therefore, spontaneous thoughts become less relevant because users can judge the Website as being useful or important after several visits, if not after the first visit. Consistent with Ducoffe (1996) and Teo et al. (2003), we use 'value' as the surrogate for the cognitive outcomes of both the IR Website and the brand. This value will then affect the overall attitude toward Website and toward brand. Hence, we predict:

\[ \text{Hypothesis 1a: Assessment of Website value is positively associated with attitude toward IR site} \]

\[ \text{Hypothesis 1b: Assessment of brand value is positively associated with attitude toward brand} \]

In order to test the central and peripheral routes to persuasion, we add these propositions:

\[ \text{Hypothesis 2a: Attitude toward the site is positively associated with assessment of brand value} \]

\[ \text{Hypothesis 2b: Attitude toward the site is positively associated with attitude toward brand} \]

Investors can be classified as users with high need for cognitive because they are known to have fairly standard information need (Esrock & Leichty 2000); and to serve this information need, management must understand which information is more valued by them and how to present the information. One important motivational moderator to the route of persuasion is the personal relevance of advocacy (Petty & Cacioppo 1981). Because most of IR Websites are designed specifically for investors, the messages and information contained on these sites can be regarded as highly relevant to them. When a message is high in personal relevance, the quality of the issue-relevant arguments in the message is an important determinant of persuasion (Petty & Cacioppo 1984), and thus of users' satisfaction.

Based on the literature of user behaviour toward using an information system, 'information quality', 'credibility', 'usability' and 'attractiveness' are deemed to be important determinants of users’ satisfaction (Zimmerman & Muraski 1995; Wang & Strong 1996; Ryan & Buchholtz 2001; Cao, Zhang & Seydel 2005). For instance, information becomes more important when it is conveyed in a timely manner. Similarly, investors will be more confident to act upon a presented balance sheet if it
is audited by an external auditor. In completing intended tasks, users will value easy access to the information and the ability to download it and perform some tasks on it. The new extended model includes these four perceptual antecedents, which can also be described as 'evaluative responses', and their effects on cognitive outcomes. We therefore propose the following hypotheses:

Hypothesis 3a: Information quality is positively associated with assessment of Website value
Hypothesis 3b: Credibility is positively associated with assessment of Website value
Hypothesis 3c: Usability is positively associated with assessment of Website value
Hypothesis 3d: Attractiveness is positively associated with assessment of Website value

From the finance literature, risk, three fundamental factors that influence investors’ actions include risk, return and trust. Return is a key variable in the investment decision because it allows shareholders to compare the actual or expected gains with the levels of return they need to be compensated for the risks involved (Gitman, Joehnk, Juchau, Wheldon, & Wright 2004). Because it has been a common practice to formulate future return by analysing companies’ past performance, we include 'perceived financial strength' as an antecedent to brand attitude. Moreover, shareholders’ behaviour is driven not only by the amount of risk they are willing to take, but also by the extent of their trust in both management and the market (Ryan & Buchholtz 2001). The more general, attitudinal component of trust is modified based on contextual circumstances, in order to reach a level of trust more appropriate to the specific situation (Scott 1980); and in this respect, investors are relying on information disseminated on IR Websites. Therefore we should expect that there will be a causal relationship between return and amount of risk, and level of trust in a company. Hence, the following relationships are hypothesized:

Hypothesis 4a: Perceived risk is negatively associated with assessment of brand value
Hypothesis 4b: Perceived financial strength is positively associated with assessment of brand value
Hypothesis 4c: Situational trust is positively associated with assessment of brand value
Hypothesis 5a: Perceived financial strength is negatively associated with perceived risk
Hypothesis 5b: Perceived financial strength is positively associated with perceived situational trust

Hypothesis 5c: Situational trust is negatively associated with perceived risk

The original DMH uses 'purchase intention' as the ultimate outcome from attitude formation toward advertisement. We substitute this with 'intention to invest'. However, many IR Websites are not intended to stimulate immediate investors' trading decisions; rather they focus more toward relationship building (Esrock & Leichty 2000). Clearly, a commercial Website is not considered a failure when little in the way of online sales is achieved. 'Likelihood of return', 'frequency of use' and 'user satisfaction' are increasingly used as key measures of Website success (Palmer 2002; Rosen & Purinton 2004; Karson & Fisher 2005). Thus, we believe that an extension to include the 'intention to revisit' as another behavioural outcome is important, and this is perhaps a more meaningful measure of an effective Website than immediate investment levels. In the proposed model, we predict behaviour intentions would be resulted via both central and peripheral routes. We also include a path from 'attitude toward site' to 'intention to revisit', for the reason that even though investors may not be happy with the company’s image, their satisfaction from visiting the site may induce their subsequent visits to the company’s IR Website. Therefore, the following relationships are proposed:

Hypothesis 6a: Attitude toward brand is positively associated with intention to invest

Hypothesis 6b: Attitude toward brand is positively associated with intention to revisit the site

Hypothesis 6c: Attitude toward IR site is positively associated with intention to revisit the site

CONCLUSION

The primary goal of this article is to introduce a new model that can be used to predict the behaviours of investors as a result of visiting an IR Website. Investors commonly assess the financial strength of a company by performing ratio analysis, estimating future cash flows and evaluating
directors’ statements (Gitman et al. 2004). The effectiveness of this mode of corporate communication should be evaluated by a reliable measure. We propose that successful Web experience gained by investors after visiting an IR Website is an appropriate measure, compared to other previously discussed measures, which tended to focus only on Website physical features.

In order to fully benefit from online presence, companies should pursue a marketing-oriented approach. With appropriate Web design, the needs of specific group of users such as individual investors can easily be met. Because individual investors have been continually growing in number, it should be an intention of any company to court these investors by strategically leveraging their Web presence. Driven by the belief that a Website can be used to, and better meet the objectives of advertising, we adapted one of the most accepted advertising attitude models, i.e., the Dual Mediation Hypothesis introduced by MacKenzie et al. (1986).

This extended and modified conceptual framework still recognizes the effects of both central and peripheral routes on the effectiveness of the persuasion message. However, we have suggested several modifications, so that the original DMH model can better fit the online environment. Our proposed model substitutes 'advertisement' with 'IR Website', 'intention to buy' with 'intention to invest' and extends a path to 'intention to revisit'. Moreover, this model further extends the original DMH model to include perceptual antecedents to cognitive outcomes. Specifically, 'information quality', 'credibility', 'usability' and 'attractiveness' are hypothesized as influences of attitudes toward IR Websites, while 'perceived risk', 'perceived financial strength' and 'situational trust' are hypothesized to be key determinants of attitude toward brand.

In short, the model posits that after investors have gained a positive experience as a result of visiting an IR Website, they will be inclined to visit the Website more often in the future, and possibly even be tempted to invest in the company. Note however, the model introduced in this article will only be relevant to predict attitude formation of users of IR-related pages, because other users of corporate Websites will have different information needs. The validity of this proposed model needs to be tested in an empirical study. This constitutes the next step in this research project.
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Figure 1: Dual Mediation Hypothesis (DMH), source: Mackenzie et al. 1986.

![Diagram of the Dual Mediation Hypothesis]

Where:
- $C_{ad}$ = ad cognition
- $C_b$ = brand cognition
- $A_{ad}$ = attitude toward the ad
- $A_b$ = attitude toward the brand
- $I_b$ = intention to buy

Figure 2: Proposed conceptual framework.

<table>
<thead>
<tr>
<th>Perceptual Antecedents</th>
<th>Cognitive Outcome</th>
<th>Overall Attitude</th>
<th>Behavioural Outcomes</th>
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<tbody>
<tr>
<td><strong>Information Quality</strong></td>
<td><strong>IR-Site Value</strong></td>
<td><strong>AIR-Site</strong></td>
<td><strong>I_Revisit</strong></td>
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<td>Credibility</td>
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<td>Attractiveness</td>
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<tr>
<td><strong>Perceived Risk</strong></td>
<td><strong>Brand Value</strong></td>
<td><strong>A_Brand</strong></td>
<td><strong>I_Invest</strong></td>
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<td>Perceived Financial</td>
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<td>Situational Trust</td>
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Where:
- $A_{IR-site}$ = attitude toward the IR Website
- $A_{Brand}$ = attitude toward the brand
- $I_{Invest}$ = intention to invest in the company
- $I_{Revisit}$ = intention to revisit the IR Website