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# Assessing the Effectiveness of Corporate Web Sites: An Experimental Study of the Web Acceptance Model

**A thesis submitted in fulfilment of the requirements for the award of the degree of**

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**by**

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**2003**

# Certification

I, Koo-Won Suh, declare that this dissertation, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Management, Marketing, and Employment Relations, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Koo-Won Suh

November 2003

# Abstract

There has been an ongoing need for designing and assessing corporate Web sites as important marketing communication tools. Typically, most research on Web site effectiveness has adopted traditional advertising evaluation models. A fundamental shortcoming of this approach is that it does not provide much information about user interaction. As corporate Web sites are new interactive media and Web user characteristics are far different from those of traditional communication media, new approaches should be developed.

To overcome the inherent shortcomings of previous research, this study has developed a new theoretical framework, the Web Acceptance Model (WAM), which explores customer acceptance and uses of corporate Web sites. This study took an interdisciplinary approach involving theory derived from Marketing, Communication, Information Systems (IS), Education, and Psychology.

The model is premised on two central phenomena of Web-Mediated Communication (WMC): social interaction between Web sites and users, and the active participation of users. In the model, the phenomenon of social interaction is captured by the inclusion of moderating variables: affective and task-related interaction which can help explain "why" a specific type of Web site is likely to be more effective. It is unlikely that a particular type of Web site will be effective all of the time. Therefore, this model also seeks to explain "when" a Web site is more likely to effective. Individual user difference as a moderator can help explain "when" and reflects the active role of

customers in WMC. Finally, the model addresses all three elements of consumer attitudes i.e., affective, cognitive, and conative.

Specifically, the model includes predictor, moderator, mediator, and criterion variables. The predictor (independent) variables are Web site content and structure. Content analysis was used to identify Web site typology in terms of structure and content. It was necessary to conduct an empirical study of Web site typology, as there was no published research on this topic. Empirically derived typology may better explain real world phenomena than a conceptually developed typology. Through content analysis of around 386 corporate Web sites, this study identified two types of Web site structure ("hypermedia" and "static image") and two types of content ("integrated communication" and "basic image").

The criterion variables, which are the communication effects achieved by a Web site, are measured in terms of overall attitude toward the Web site and revisit intention. Among three mediators between the predictor and criterion variables, "social presence" serves as an affective bridge, while "perceived usefulness" and "perceived ease of use" serve as cognitive bridges. Finally, Web literacy serves as a moderator, which affects the direction and strength of the relationships between the predictors and mediators.

The overall purpose of this study was to uncover the distinguishing features of effective corporate Web sites (i.e., those sites which are seen by users to be attractive, user-friendly and useful). To do this, the study sought to answer two exploratory questions and test hypotheses derived from the model. The exploratory questions were: (1) What content and structural elements are presented on corporate Web sites? and (2) How can

corporate Web sites be classified according to their content and structure? These questions were answered through a preliminary content analysis of corporate Web sites. Fourteen hypotheses were derived to answer the three experimental research questions: (1) How do consumers respond to different types of Web site? (2) Do user attitudes toward corporate Web sites vary according to Web literacy levels? and (3) What features of corporate Web sites determine revisit intention amongst Web users? The first five hypotheses addressed how customers respond to different types of Web sites. The next five hypotheses examined what features of corporate Web sites determine revisit intention amongst Web users. The final four hypotheses investigated whether user attitudes toward corporate Web sites vary according to their Web literacy levels. These hypotheses were tested through a laboratory experiment.

This study employed a 2 (Web site structure) × 2 (Web site content) between-subject factorial design, with Web literacy serving as a co-variant. Each subject was allowed to explore only one of four specially constructed Web sites. Subjects were randomly assigned to each cell. The data was gathered through a self-report instrument, of which validity and reliability were ensured by a rigorous two-stage pilot test. Empirical evidence was gathered from one hundred and sixty students at the University of Wollongong in Australia who were recruited for the experiment. The data was analysed using the statistical methods of MANCOVA, ANCOVA, ANOVA, Multiple Linear Regression, and Simple Linear Regression.

In terms of Web site content, it was found that the integrated communication type of Web site was more effective than the basic information type. The integrated type had higher social presence and perceived usefulness. In relation to Web site structure, it was

found that the hypermedia type was more effective than the static image type, generating higher social presence and perceived usefulness. The results of this investigation suggest that social presence and perceived usefulness were critical factors that explain "why" a specific type of Web site is more effective than the other type. The more positive social presence and perceived usefulness were, the higher attitude toward the Web site was, and in turn, the higher revisit intention was. However, there was no significant relationship between perceived ease of use and attitude toward the Web site. It was also concluded that Web literacy moderate the relationship between Web structure and social presence. For example, people who with low Web literacy experienced higher differences in social presence between static image type and hypermedia type than those with high Web literacy.

These results imply that both Web site structure and content had effects on consumer attitude and the two dimensions of social interaction (i.e., social presence and perceived usefulness) are critical factors for identifying consumer responses to Web sites. One of the interesting findings was the importance of an emotional response, meaning that it is not possible to fully explain consumer behaviour without the understanding of emotional responses to Web sites.

The Web Acceptance Model provides a new way of conceptualising social interaction, which is central to WMC, and underlines the importance of an interdisciplinary research to our understanding of WMC. Therefore, it is hoped that this study will make a significant contribution to a burgeoning area of research that is of great and increasing importance to both the discipline and the practice of marketing.

# Papers

The following papers and publications have been produced from the research reported in this thesis.

1. Suh, K. and Couchman, P. K. (2003). *Measuring consumer responses to corporate Web sites: The development of an instrument.* Paper presented at the 2003 Chartered Institute of Marketing (CIM) Inaugural Australian Conference, Sydney, Australia, August 20-22.

2. Suh, K., Couchman, P. K., and Hasan, H. (2003). *Understanding Web-mediated marketing communication: The Web acceptance model.* Paper presented at the 2003 Chartered Institute of Marketing (CIM) Inaugural Australian Conference, Sydney, Australia, August 20-22.

3. Suh, K., Couchman, P. K., and Lee, D. (2002). *Functions of a corporate Web site: A cross-national comparison*. Unpublished manuscript. Wollongong, Australia: University of Wollongong.

4. Suh, K., Couchman, P. K., and Lee, D. (2002). *Empirical classification of Web structure: A cross-national comparison of corporate Web sites*. Unpublished manuscript. Wollongong, Australia: University of Wollongong.

5. Suh, K., Couchman, P. K., and Park, J. (2003). *A Web-mediated communication (WMC) model based on activity theory.* Paper presented at the 7th World Multiconference on Systemics, Cybernetic and Informatics (SCI 2003), Orlando, Florida, July 27-29, and TT21C (Transformational Tools for 21st Century Minds), Gold Coast, QLD, Australia, July 27-29.

6. Suh, K., Hasan, H., and Couchman, P. K. (2003). *Web-mediated communication (WMC) and social interaction: A social psychological approach.* Paper presented at the 7th World Multiconference on Systemics, Cybernetic and Informatics (SCI 2003), Orlando, Florida, July 27-29, and TT21C (Transformational Tools for 21st Century Minds), Gold Coast, QLD, Australia, July 27-29.

7. Suh, K., Hasan, H., Couchman, P. K., and Lee, D. (2003). Exploring social interaction in Web-mediated communication. In H. Hasan, I. Verenikina, and E. Gould. (Eds.), *Information systems and* a*ctivity theory volume 3: Expanding the horizon* (pp. 141-155). Wollongong, Australia: University of Wollongong Press.

8. Suh, K., Couchman, P. K., Park, J., and Hasan, H. (2003). The application of activity theory to Web-mediated communication. In H. Hasan, I. Verenikina, and E. Gould. (Eds.), *Information systems and* a*ctivity theory volume 3: Expanding the horizon* (pp. 122-140). Wollongong, Australia: University of Wollongong Press.

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# ACRONYMS

| | |
|---|---|
| ANCOVA | Analysis of Covariance |
| ANOVA | Analysis of Variance |
| $A_{WS}$ | Attitude Toward the Web Site |
| CMC | Computer-Mediated Communication |
| HCI | Human Computer Interaction |
| IMC | Integrated Marketing Communication |
| IS | Information Systems |
| ISIC | International Standard Industrial Classification |
| MANCOVA | Multiple Analysis of Covariance |
| MANOVA | Multiple Analysis of Variance |
| PU | Perceived Usefulness |
| PEOU | Perceived Ease of Use |
| RI | Revisit Intention |
| SP | Social Presence |
| WAM | Web Acceptance Model |
| Web | The World Wide Web |
| WMC | Web-Mediated Marketing Communication or Web-Mediated Communication |