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The application of information systems in marketing: a study of empowerment in electronic commerce

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THE APPLICATION OF INFORMATION SYSTEMS IN MARKETING
A STUDY OF EMPOWERMENT IN ELECTRONIC COMMERCE

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CERTIFICATION

I, Mahmoud Al-dalahmeh, declare that this dissertation, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the school of Economic and Information Systems, 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.

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Abstract

This thesis describes post-positivist research in the field of Information Systems (IS), more specifically in Electronic Commerce (E-Commerce). Information systems (IS) and information technology (IT) both play a major role in improving productivity and competitive edge in e-commerce (Lin and Benjamin, 2000). The existence of IS does not depend on computers but it is the utilisation of computers and technology that produces a viable IS system (Davis and Olson, 1985).

E-commerce is considered as a new type of information system and was defined by Poong (2006, p. 553) as "an information system that provides catalogues of products over the World Wide Web". Despite the deep employment of technology in Information Systems (IS), they are regarded as social systems.

Business-to-consumer (B2C) e-commerce has been rapidly changing the competitive landscape of retailing and service industries. Despite its claimed benefits, this innovative mode of retailing has not yet been accepted by every buyer. For company managers, the delays in the adoption of information systems such as e-commerce systems, and the empowerment of e-commerce users are recognised as a dilemma.

An interesting question is why some users accept the idea of online shopping more readily than others. This study aims at helping to improve information systems applications for e-commerce in the complex, technology-oriented marketing sector.

This thesis innovates a model to empower e-commerce users based on key critical factors that affect this technology. The core factors in this model are e-commerce self-efficacy, Personal Innovation in Information Technology (PIIT), system ease of use, system experience, and technology anxiety. The model was empirically tested in a field experimental setting, using a real retail website for the purchasing decisions. The

participants in this study were students at the University of Wollongong in Australia, as they are normal users of e-commerce. The Amazon.com website was chosen for this study, as this website is usually used by university students to buy books and CDs. The results of the investigation were tested using factor analysis and partial least square (PLS). The empirical testing provides support for the proposed theoretical model by explaining seventy-eight percent (78%) of the variance in the users' intention to use e-commerce systems.

The implications of this study are both theoretical and practical. At the theoretical level, this study combined four models in one model. The first model, by Compeau et al. (1999)[1], put social cognitive theory into practice for the IT area. The second model, by Thatcher and Perrewe (2002)[2], applied personal innovation in information technology, trait anxiety, and computer anxiety to computer self-efficacy. Henry and Stone's (1995)[3] model is the third model used, as it employed ease of use and system experience in computer self-efficacy and outcome expectation. The final model was constructed by Kim and Kim (2005)[4] and used specific self-efficacy (online trading self-efficacy) in customer trust, perceived risk, and buying intention. Therefore, it can be positively confirmed that this research model is a solid model, as it unites these four models into one to generate a clarification of users' behaviour in the framework of e-commerce utilisation.

At the practical level, the study shows that adoption of e-commerce systems is directly, significantly and positively affected by e-commerce self-efficacy, outcome expectation (perceived usefulness), system ease of use, and system experience. It is proposed that individuals with higher levels of e-commerce self-efficacy, outcome

[1] This model has been published by *Management Information System Quarterly*.
[2] This model has been published by *Management Information System Quarterly*.
[3] This model has been published by *Computer Personal.*
[4] This model has been published by *IEEE.*

expectation, system experience, and perceived system ease of use are more likely to perform an online transaction than those experiencing lower levels of these concepts. The study makes significant contributions across all areas of IT adoption and usage research and practice. There is justification for claiming that the study model will empower the application of management information systems for e-commerce.

PUBLICATIONS FROM THE RESEARCH

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

Articles related to this research

Refereed Conference Articles

1. **Al-Dalahmeh, M**. and Saleh, A. S. (2007), "E-Commerce Self-Efficacy and Intention to Shop Online: the Empowerment of Internet marketing, Intellectbase International Consortium, Academic Conference, Atlanta, USA, October 25-27, 2007.
(This paper awarded Academic Excellence)

2. **Al-Dalahmeh, M**. and Saleh, A. S. (2007), "A Review and New Theoretical Approach of E-Commerce Self-efficacy: Understanding Consumer Behaviour in the Context of Information Systems", Asia Pacific Marketing Conference 2007, University Malaysia Sarawak, Kuching, Malaysia, 2-3 November 2007.

3. **Al-Dalahmeh, M**. and Saleh, A. S. (2007), "Psychological Factors Affecting the Intention to Use E-Commerce: A Theoretical Approach", the First International Online Conference on Business and management, November 20-21, Iran.

4. **Al-Dalahmeh, M**.(2008), "The empowerment of citizen usage for e-government"; E-city; International Congress Center of Milad Tower, Tehran, Iran. **(In this article the author applied the research model in the area of e-government)**

International Journal Articles

5. **Al-Dalahmeh, M**. and Saleh, A. S. (2007), "Psychological Factors Affecting the Intention to Use E-Commerce: A Theoretical Approach", Lex et Scientia (International Journal of Law and Science), Nr. XIV/2007, pp. 40 - 60, Print ISSN 1583-039X.

6. **Al-Dalahmeh, M**. and Saleh, A. S. (2008), "E-Commerce Self-Efficacy and Intention to Shop Online: the Empowerment of Internet marketing", International Journal of Accounting Information Science and Leadership – IJAISL, pp. 80-85, USA. Print ISSN 1940-9524

Work in Progress

7. **Al-Dalahmeh, M.** (2008), "The Application of Information systems in Marketing; A Study of Empowerment in Electronic Commerce Technology Usage" Journal of Information Systems Technology & Planning – JISTP, (submitted) USA.

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Dedication

I dedicate this Study to my dearest people, mother and father, who have always inspired me to challenge myself.

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LIST OF ACRONYMS

B2C	Business to Consumer
E-commerce	Electronic Commerce
ESE	Electronic Commerce self-efficacy
EU	Ease of Use
GSE	General self-efficacy
INI	Intention
OUE	Outcome Expectations
PITT	Personal Innovation in Information Technology
RA	Risk Aversion
S-E	Self-efficacy
TA	Trait Anxiety
TE-A	Technology Anxiety
UOW	University of Wollongong