

Chapter 18

The Influence of Quality on E-Commerce Success: An Empirical Application of the DeLone and Mclean IS Success Model

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ABSTRACT

This research addresses difficulties in measuring e-commerce success by implementing the DeLone and McLean (D&M) model of IS success (1992, 2003) in an e-commerce environment. This research considers the influence of quality on e-commerce success by measuring the information quality and system quality attributes of an e-commerce system and the intention to use, user satisfaction and intention to transact from a sample of respondents. This research provides an empirical e-commerce application of the updated IS success model proposed by DeLone and McLean (2003). This paper found significant relationships between Information Quality and System Quality and three success dimensions: intention to use, user satisfaction and intention to transact. It found the following constructs to be most important in predicting success: ease of understanding, personalisation and reliability. In particular, that reliability is more important than usability where transactions are concerned and security though important, is not the most important factor.

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INTRODUCTION

Measuring the success of information systems is critical to the process of evaluating IS strategies and investments. However, a comprehensive evaluation framework has been difficult to define and the identification of a dependant variable has remained elusive. Companies experience particular difficulty in evaluating the success of e-commerce initiatives resulting in a significant barrier to entry for many businesses, particularly small to medium sized enterprises. The updated success model proposed by DeLone and McLean (2003) (D&M IS success model) provides guidance for development in this area, especially as a model for developing comprehensive e-commerce success measures. This paper attempts to respond to the call made by DeLone and McLean (2003) for empirical studies to measure the interaction between success dimensions in order to isolate the effect of particular independent variables. Specifically, this paper provides one of the first e-commerce applications of the updated IS success model and explores the relationships that exist between factors of information and system quality and e-commerce success metrics.

THEORETICAL BACKGROUND

The difficulties posed in assessing the success of an online presence as espoused by Hasan and Tibbits (2000) in that the system implemented must make a measurable contribution, implies that the measurement of the success of the system is fundamental to the ability of management to determine the contribution to business. Zhang, Keeling, and Pavur (2000) proposed that validated evaluation criteria would be critical to future decision making for online systems design. However the definition of “success” is controversial as the term itself is multi-dimensional and can be assessed at various levels of the organisation using many differing criteria.

DeLone and McLean (1992) sought to better define the dependant variable “success” in information systems by categorising six interrelated dimensions of IS success—System Quality, Information Quality, Use, User Satisfaction, Individual Impact and Organisational Impact—and encouraged future studies to acknowledge the multidimensional, interdependent and contextual nature of IS success. This model informed a large number of studies and has been updated as the D&M IS success model (2003) to include the variables “service quality” and “net benefits”.

DeLone and McLean (2003) also demonstrated the possibility of adapting their IS success model to the e-commerce environment. It is argued that, as the DeLone and McLean Model (D&MM) is based on communications theory, it is highly suited to measuring the IS and communications phenomenon that is the Internet (DeLone & McLean, 2003, p. 34). This process model, (as shown in Figure 1) is derived from a well accepted and tested model of information systems’ success (Molla & Licker, 2001; Seddon & Kiew, 1994) and is argued to be appropriate to the communications and commerce process common to e-commerce systems.

Measures of IS Quality

DeLone and McLean (2003) encourage the selection of success dimensions and measures contingent on the objectives and context of the system under study. In terms of e-commerce systems, information quality and system quality have been identified as critical features of determining web site success (Bell & Tang, 1998; Zhang et al., 2000).

Information quality aspects of a system are a measure of the information system outputs, the primary example of such being the production of reports (DeLone & McLean, 1992). E-commerce system users may seek transactional, customer service and marketing services as well as information such that account must be taken of the features distinguishing e-commerce systems

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