Evaluating IS Quality as a Measure of IS Effectiveness

Carla Wilkin
The University of Melbourne, Australia

INTRODUCTION

An enduring question in information systems research and practice concerns evaluation of the impact of information systems (IS). It endures, as to date there is no ready solution. Focusing on one aspect, measuring IS success or effectiveness, there are ranges of measures available. At one end of the scale we have perceptual measures like use and user satisfaction; somewhere along that scale we have the more objective measures like quality; whilst at the other end we have objective measures like increased market share, price recovery and increased product quality.

Measurement of IS success or effectiveness has been shaped by DeLone and McLean (1992), who proposed a taxonomy and an interactive model that conceptualized and operationalized IS success. However, this was based on theoretical and empirical work from the 1970s and 1980s, published in the period 1981-1988. Information systems, not being a static phenomenon, have progressed and changed. DeLone and McLean (2002, 2003) themselves acknowledged this in their recent revisitation, reexamination and reformulation of their IS success model. Their view correctly affirms that we cannot leave people outside this equation; meaning objective measures alone are not appropriate. Furthermore, the subjectivity of perceptual measures mean they are of questionable usefulness. Taking the middle ground, where quality is the measure, the question then becomes how best to measure quality of a delivered IS.

In an equation that seeks to define our understanding of the value of information technology (IT) to the business process, the system as a stand-alone object is worthless. The worth of the system lies in its role in the business process: and it is people who make it work in these processes. What is therefore required is a measure that takes account of human reactions to delivered systems. This can be evaluated by considering a variety of end-user stakeholder expectations and/or perceptions as measures of quality. In fact, much insight can be gained by measuring the disconfirmation of expectations of ideal service and perceptions of reality (Wilkin, 2001), particularly if this is assessed at various levels of seniority.

MEASURING QUALITY

Debate has surrounded measuring quality from a disconfirmation perspective (Carr, 2002; Peter, Churchill & Brown, 1993; Van Dyke, Prybutok & Kappelman, 1999). Justification for including expectations (Cronin & Taylor, 1992, 1994; Teas, 1993, 1994; Van Dyke, Kappelman & Prybutok, 1997) centred on the insight it provided about how users formulated perceptions or how significant such users saw each dimension or statement (Carman, 1990; Kettinger & Lee, 1997; Parasuraman, Zeithaml & Berry, 1986; Pitt, Watson & Kavan, 1995). Moreover, expectations are seen as essential to both understanding and achieving IS effectiveness, particularly given the different internal opinions held by different user stakeholders where a low or high perception rating could provide misleading information. A measure that includes expectations provides insight regarding changes in the system environment (Watson, Pitt & Kavan, 1998; Wilkin, 2001).

The perception’s only measure, another approach to defining and evaluating quality, was proposed in a belief that a measurement of service quality derived by the difference score only captured factors that were related to service quality and did not measure customers’ view of the concept itself (Cronin & Taylor, 1992). However, support can be found for the view that a single measure of performance provides little information about a user’s thoughts in relation to product features, nor the process by which performance is converted into understanding by the consumer (Oliver, 1989; Spreng, MacKenzie & Olshavsky, 1996).

A definition of quality could have many contradictory functions: sometimes implicit/sometimes explicit; at times mechanistic/at times humanistic; and sometimes conceptually/sometimes operationally understood. In an IT context, there is not any single understanding of the term. Quality, being concerned with the totality of features, is best evaluated as a multi-dimensional construct using multiple statements to capture the quality of each dimension.

Applying a measure of quality to evaluate something as complex as a delivered IS requires consideration and understanding of the mechanisms that underpin an IS. The DeLone and McLean model conceptualized system
Related Content

Trust and Technology in Virtual Teams
www.igi-global.com/chapter/trust-technology-virtual-teams/4601?camid=4v1a

Status of Non-Functional Requirements in Mobile Application Development: An Empirical Study
www.igi-global.com/article/status-of-non-functional-requirements-in-mobile-application-development/176374?camid=4v1a

Semantic Metadata Interoperability and Inference-Based Querying in Digital Repositories
www.igi-global.com/article/semantic-metadata-interoperability-inference-based/37408?camid=4v1a

A Framework for Research into Business-IT Alignment: A Cognitive Emphasis
www.igi-global.com/chapter/framework-research-into-business-alignment/6103?camid=4v1a