IT Governance Framework Adoption: Establishing Success Factors

Chadi Aoun, Savanid Vatanasakdakul, Yang Chen

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Chadi Aoun

University of Technology Sydney, Australia
Chadi.aoun@uts.mq.edu.au

Savanid Vatanasakdakul

Macquarie University, Australia
Savanid.vatanasakdakul@mq.edu.au

Yang Chen

Macquarie Unvierstiy, Australia
Yang.chen@mq.edu.au

Abstract. The spectacular corporate collapses over the past decade, along with the introduction of the Sarbanes-Oxley Act and similar legislations across the world, have promoted significant awareness of IT governance. However, the causes of success and failure in IT governance framework adoption are yet to be adequately studied. This study aims to address this deficiency by proposing a research model to investigate factors influencing the success of IT governance adoption. The research model draws upon the information systems success model by Delone and McLean (2003) and the Technology-Organisation-Environment framework by Tomatzky and Fleisher (1990), to provide an integrated conceptual perspective for examining IT governance adoption and success.

Keywords: Australia, IS success model, IT governance, Organizational performance, Technology-Organisation-Environment framework, User satisfaction

1 INTRODUCTION

Pressure from the Sarbanes-Oxley Act and similar legislations across the globe, along with the increase in business Information Technology (IT) investment, are pressuring top management to implement effective IT governance frameworks in order to comply with corporate governance goals and regulations (Brown et al. 2005; De Haes and Van Grembergen 2009). IT governance frameworks, such as the IT Infrastructure Library (ITIL), Control Objectives for Information and related Technologies (COBIT), and Information Technology-Code of Practice for

Information Security Management (ISO 17799), are common frameworks adopted by organisations to ensure operational efficiency, decreased costs, and increased control of IT infrastructure, thereby achieving organisational goals through aligning IT and business (Iden and Langeland 2010; Wessels and Loggerenberg 2006). While there are various definitions to the term 'IT governance', this study adopts the definition suggested by the Information Technology Governance Institute, stating that "IT governance is the responsibility of the Board of Directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organisational structures and processes to ensure that the organisation sustains and extends its strategy and objectives" (De Haes and Van Grembergen 2005, p.1).

However, despite the heralded benefits of IT governance to organisations, previous studies demonstrate that many firms are still struggling to implement and apply frameworks to their work environment (Pollard and Cater-Steel 2009). Approximately 80 percent of organisations in North America have not yet fully implemented IT governance frameworks and are yet to reap any benefits (Iden and Langeland 2010; Pollard and Cater-Steel 2009). Nevertheless, this is to attract significant IS research attention. Studies on IT governance are rare, with only a handful of papers investigating the ITIL adoption (Cater-Steel and Tan 2005; Hochstein et al. 2005). Such studies often identify various factors effecting IT governance, however, the relationships between these factors and user satisfaction or perceived organisational performance still require through consideration as they form crucial aspects of innovation adoption success (Delone and McLean 2003). This study aims to address these limitations by proposing a integrated research model to investigate factors influencing the success of IT governance framework adoption. The success factors influencing IT governance adoption are proposed via the established theoretical lens of Delone and McLean's Information Systems (IS) success model (2003) along with the Technology-Organisation-Environment (TOE) framework (Tomatzky and Fleisher 1990). The integration of these two frameworks will provide for a rich theoretical consideration of a wide range of contextual factors, and their potential influences on IT governance framework adoption success.

This paper is organised as follows: first, the development of the research model and hypotheses are presented and discussed; then, the paper concludes with direction for future research.

2 THEORETICAL BACKGROUND

2.1 Delone and McLean: Information Systems Success Model

An assessment of IS success is critical to an organisation's understanding of the value and effectiveness of IS investment and management. Delone and McLean (1992, 2002, 2003) propose an influential framework for studying innovation adoption success. Their model is widely accepted among IS researchers (Bharati and Chaudhury 2004; Wang 2008). It was first presented in 1992 and updated in 2002 and 2003. The most recent iteration of the model consists of six dimensions, namely:

information quality, system quality, service quality, use, user satisfaction and net benefits. Delone and McLean suggest that system quality, information quality, and service quality affect use and user satisfaction. In turn, both use and user satisfaction are direct antecedents of net benefits, which can be evaluated from individual and organisational impact.

This research model was used and validated by many IS researchers in various context. For example, the model was adopted to evaluate e-commerce and website success at an organisational level (Molla and Licker 2001; Wang 2008), and at an individual level (Liu and Arnett, 2000; Palmer 2002). Halawi et al. (2008) and Kulkarni et al. (2006) adopted the model to investigate the success of knowledge management systems. However, the main limitation of the model is its consideration of a limited set of independent variables, which could be enriched and complemented by integrating it with the TOE framework.

2.2 Technology-Organisation-Environment framework

Tomatzky and Fleischer (1990) developed the TOE framework to consider three aspects of innovation adoption, namely: technology, organisation and environment. The technological context refers to both internal and external technologies adopted by firms. The organisational context generally covers various aspects of characteristics and resources within firms, such as a firm's size, degree of centralisation, degree of formalisation, managerial structure and human resources. On the other hand, the environmental context refers to external pressures including size and structure of the industry, competition, macroeconomic milieu, dealings with government, and regulatory environment (Tornatzky and Fleisher 1990).

The TOE framework has also been adopted and examined by a number of IS researchers in various contexts of innovation adoption. The literature suggests that specific factors identified within its three dimensions can be varied across different contexts of study (e.g. Chang et al. 2007; Lee and Shum 2007; Zhu et al. 2006). Nonetheless, the framework has been proven as a sound theoretical basis and consistent empirical mechanism for IS research (Zhu et al. 2002). The next section presents the integrated research model as well as the development of hypotheses.

3 THE DEVELOPMENT OF RESEARCH MODEL AND HYPOTHESES

In addressing the research deficiencies identified above, we propose an integrated conceptual model for IT governance adoption success based on theoretical foundation of the IS success model by Delone and McLean (2003) and the TOE framework by Tomatzky and Fleisher (1990). The TOE framework is adopted because it comprehensively represents aspects that align with factors identified by previous research on ITIL adoption (Cater-Steel and Tan 2005; Hochstein et al. 2005; Iden and Langelan 2010). On the other hand, the IS success model of Delone and McLean allows the researchers to investigate the relationship between these identified factors

and the perceptions of user satisfaction and organisational performance, in the context of IT governance framework adoption, which could be considered here as a type of innovation.

The proposed research model is presented in Figure 1. It is partially based on the IS success model, specifically user satisfaction and perceived net benefits to investigate IT governance adoption success at organisational level. The model posits eight predictors for IT governance adoption within the TOE framework. The identified factors in the technological context are ease of use and innovation compatibility. The organisational context includes top management support, availability of internal IT expertise and training; while competitive pressure, support from external vendors and consultants, and external pressures from government and industry are outlined in the environmental context. These factors are posited with user satisfaction and perceived benefits for hypotheses testing. The research model and research hypotheses are presented and discussed in the following sub-sections.

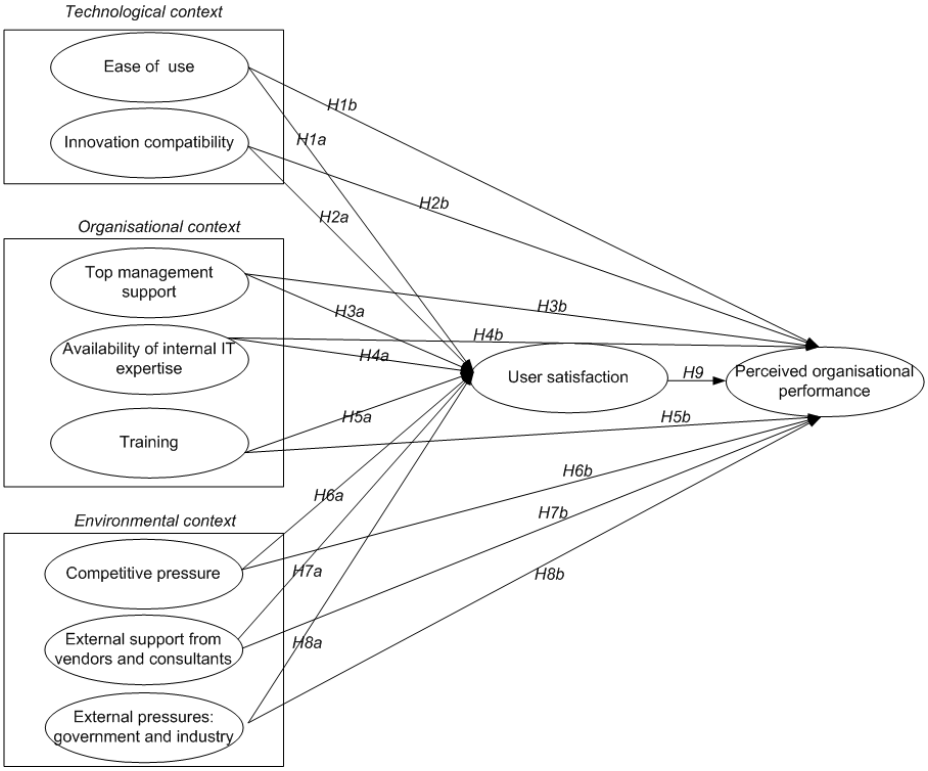

Fig. 1. The research model

3.1 Technological Context

Ease of Use.

An innovation that is perceived as easy to use is more likely to be accepted by users (Davis 1989). Davis defines ease of use as the degree to which a particular system is perceived to be relatively free from operational effort (Davis 1989). Rogers (1983) asserts that a lack of perceived ease of use leads to resistance towards innovation adoption. This resistance in turn, may lead to lower user satisfaction. Such complex innovation may prevent employees from completing their tasks and this may lead to a reduction in benefits (or indeed a loss) due to innovation adoption (Bradford and Florin 2003). Here, the term users could refer to employees of a company adopting an IT governance framework. The following hypotheses are deduced:

H1a: Firms that perceive an IT governance framework as easy to use are likely to have high user satisfaction.

H1b: Firms that perceive an IT governance framework as easy to use are likely to have high perceived organisational performance.

Innovation Compatibility.

Innovations introduced to a firm often require some degree of change or customisation to align with existing work environments and procedures. Implementing innovations that have a high degree of compatibility with a firm's environment are more likely to succeed (Fichman 2001; Kishore and McLean 2007). Innovation compatibility can therefore be viewed as "the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of the potential adopter" (Moore and Benbasat 1991, p.195). Similarly, if the firm perceives a good fit between an IT governance framework and its work environment, this may lead to success in IT governance framework adoption. The following hypotheses are therefore inferred:

H2a: Firms that perceive a good fit between an IT governance framework and their work environment are likely to have high user satisfaction.

H2b: Firms that perceive a good fit between an IT governance framework and their work environment are likely to have a high perception of organisational performance.

3.2 Organisational Context

Top Management Support.

Support from top management is critical for successful information technology implementation. It is an essential factor contributing to employee satisfaction in innovation adoption (Bradford and Florin 2003; Purvis et al. 2001). Previous research indicate that that it is an important factor in successful ITIL adoption in the Australian

context (Cater-Steel and Tan 2005; Pollard and Cater-Steel 2009). Thus, we hypothesise that:

H3a: IT governance framework adoption that has strong support from top management is likely to have high user satisfaction.

H3b: IT governance framework adoption that has strong support from top management is likely to have high perceived organisational performance.

Availability of Internal IT Expertise.

Availability of internal IT expertise refers to the availability of a firm's personnel with relevant skills and experience to implement a selected technological innovation (Li et al. 2005), namely an IT governance framework in the context of this study. Previous studies point out that a higher availability of IT expertise correlate with a positive attitude and satisfaction in technology adoption (Bradford and Florin 2003; Chau and Tam 1997). Firms with in-house IT expertise tend to have greater control over the implementation and operation of systems, which may lead to relatively higher organisational performance. Thus, we hypothesise that:

H4a: Firms with internal expertise to support IT governance framework adoption are likely to have positive user satisfaction.

H4b: Firms with internal expertise to support IT governance framework adoption are likely to have positive perceived organisational performance.

Training.

Training has been proven as an effective means to enhance employee productivity, which in turn contributes to higher organisational performance (Huselid 1995; Black and Lynch 1996). Igbaria et al. (1995) point out that having an adequate training program is likely to increase users' confidence and ability to use an innovation successfully and reduce resistance. Research conducted by Pollard and Cater-Steel (2009) found that training and staff awareness are important to ITIL adoption. Consequently, the following hypotheses are proposed:

H5a: IT governance framework adoption training will lead to a positive impact on user satisfaction.

H5b: IT governance framework adoption training will lead to a positive impact on perceived organisational performance.

3.3 Environmental Context

Competitive Pressure.

Competitive pressure is recognised as an external driving force for technological innovation adoption (Bradford and Florin 2003). Zhu et al. (2002, p.340) refer to competitive pressure as "the degree of pressure from competitors, which is an external power pressing a firm to adopt new technology in order to avoid competitive decline".

Firms that are under competitive pressure may find a need to match or outperform their competitors in innovation adoption in order to maintain their viability. Such innovation may be viewed by employees as essential. Based on this, the following hypotheses are posited:

H6a: Firms whose competitors adopted an IT governance framework are likely to have positive user satisfaction in IT governance framework adoption.

H6b: Firms whose competitors adopted an IT governance framework are likely to have positive perceived organisational performance due to IT governance framework adoption.

External Support from Vendors and Consultants.

The availability of external expertise to expedite the implementation process and help organisations recognise industry best practice is deemed critical to innovation implementation success (Tasi et al. 2011). External support refers to the availability of expert support from vendors and consultants. Such support can contribute to implementation and post-implementation success by providing continuous assistance, such as system maintenance and system updates, to maintain system efficiency and effectiveness, and thus sustain the benefits of innovation adoption (Li et al. 2005). Consequently, this study hypothesises:

H7a: Firms with accessible external support from vendors and consultants are likely to have positive user satisfaction in their IT governance framework adoption.

H7b: Firms with accessible external support from vendors and consultants are likely to have positive perceived organisational performance due to their IT governance framework adoption.

External Pressures from Government and Industry.

Firms may face pressures from government (in the form of legislation) and industry (in the form of standards and benchmarks) to adopt IT governance frameworks. A study conducted by Cater-Steel et al. (2009) found that coercive pressure from legislation could influence the adoption of ITIL among Australia firms. Employees may feel eager to meet such stipulated benchmarks or legal obligations meant to improve performance. Therefore, this study hypothesises:

H8a: Firms facing external pressure from Government and Industry to adopt IT governance frameworks are likely to have positive user satisfaction.

H8b: Firms facing external pressure from Government and Industry to adopt IT governance frameworks are likely to have positive perceived organisation performance.

User Satisfaction and Organisational Performance.

As proposed by Delone and McLean (2003), user satisfaction in technology adoption may have a direct influence on perceived organisational performance. Similarly, we posit that:

H9: Firms with overall user satisfaction due to IT governance framework adoption are likely to have positive perceived organisational performance.

4 CONCLUSION AND FUTURE RESEARCH

This paper proposes an integrated research model to investigate factors influencing the success of IT governance framework adoption. In addressing the research objective, the research model proposed integrates Delone and McLean's IS success model and the TOE framework. Consequently, the model provides researchers with the means to broadly assess IT governance adoption through the lens of user satisfaction and perceived organisational performance.

Empirical data for our study was collected through survey questionnaires with Australian companies that have implemented IT governance frameworks. This is worthwhile noting, as Australia is considered a leading nation in regulating IT governance standards (Cater-Steel and Tan 2005). While the findings from our study will be reported in future publications, we encourage IS researchers to consider IT governance in their research, given its significance to industry and its global implications.

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AUTHOR BIOGRAPHIES

Chadi Aoun is a lecturer at the School of Systems, Management, and Leadership at The University of Technology, Sydney. His main research interests are in the areas

of Green IS, e-collaboration, IT governance, and socio-material perspectives in IS. He can be contacted at Chadi.Aoun@uts.mq.edu.au

Savanid Vatanasakdakul is a senior lecturer at the Department of Accounting and Corporate Governance at Macquarie University, Sydney. Her research interests are in the areas of adoption and diffusion of innovation, cross-cultural issues in IS research, strategic fit perspective, and IT audit and assurance. She can be contacted at savanid.vatanasakdakul@mq.edu.au

Yang Chen completed an hounors thesis on IT governance framework adoption in the Australian context at the Department of Accounting and Corporate Governance at Macquarie University, Sydney. She is a tutor in Accounting Information Systems courses. She can be contacted at yang.chen@mq.edu.au