Information Technology Management Practice: Impacts upon Effectiveness

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ABSTRACT

The purpose of this research is to put forth a model that examines the impact of information technology (IT) related management practices upon IT effectiveness. Given the nature and use of these practices as a management activity, control theory is used as a framework to determine if IT management practices serving as controls can achieve positive outcomes. A portion of the Control Objectives for IT (COBIT) framework is used as a proxy for management practices due to the ability to ground the COBIT practices in previous literature and serve as IT controls. The results of a survey of IT and audit professionals suggest that the model put forth with IT related management practices as an independent second order factor, does indeed explain variance in perceptions of IT effectiveness as mediated through perceptions of IT value and perceptions of IT risk however only IT value is a significant predictor of IT effectiveness.

Keywords: Control Objectives for Information Technology (COBIT), Control Theory, Information Technology (IT) Effectiveness, Information Technology Management, Positive Outcomes

INTRODUCTION

Cost and failure—that is, the rising cost of spending that organizations apportion for information technology (IT) and the negative impacts that organizations face when software implementations or outsourcing arrangements go awry—are the reasons that organizations’ IT functions are undergoing an increased amount of scrutiny. For decades, the management literature has identified IT costs and IT project failures as major concerns for organizations. Both Mahmood (1993) and Benko and McFarlan (2003) find that IT is becoming an increasingly significant portion of an organization’s general and administrative expenditures, in some cases representing 50% or more of such expenditures. Furthermore Goldstein et al. (2011) find that disruptions in IT functions have a negative effect upon a firms’ market capitalization. Thus, there is a heightened level of organizational risk surrounding the IT function due to cost and failure.

In addition to the emphasis on the cost of IT, previous thoughts per Carr (2003) were that organizations would get to a point where new IT spending would not be necessary. However with the rise of smartphones and social media, IT departments must continually innovate and invest in IT. Many organizations must maintain a balance of the right level of IT investment. Over investment in IT will negatively impact

DOI: 10.4018/joeuc.2013100103
a firm’s bottom line while underinvestment in IT will negatively impact an organization's ability to effectively compete in the marketplace and provide an adequate level of service to its customers. As such, IT is considered to have an important role in an organization’s strategy, while continued investment in IT is necessary to maintain a profitable position in the marketplace (Brynjolfsson, 2010).

Concerns revolving around cost and appropriate levels of investment can be amplified or mitigated based upon processes (i.e., management practices) that guide the IT function in organizations. Those management practices that operate as intended have the ability to increase operational efficiency in the IT function, thereby giving the organization the opportunity to lower costs. Further, the risk of failure should be mitigated due to enacted management practices. Those organizations that possess an efficiently managed IT function will be able to achieve their organizational goals and objectives more easily than organizations that do not have such (Benko & McFarlan, 2003). Properly enacted management practices for the IT function will become an increasingly critical component of reducing cost and risk, while attaining the proper level of IT investment.

Since such practices revolving around the IT function are a critical component of controlling cost, risk and IT investment decisions, research is necessary to gain a greater understanding of how management practices impact IT outcomes. Specific management practices need to be identified that speak directly to reducing costs in the IT function as well as managing risk. Furthermore, the impact of enacted management practices in the IT function on operational efficiency and effectiveness needs to be examined as well as how the practices ultimately impact on organizational performance. Also, organizations must increasingly rely on IT-enabled processes to conduct business operations as well as on technological infrastructure that quickly and efficiently meets customer needs through the web, mobile web, etc. Not only these, but organizational strategy may be enabled by an efficient IT infrastructure or constrained by an inefficient IT infrastructure. Those organizations that are efficient have the ability to initiate competitive actions and become market leaders in their respective industries as well as react quickly to actions of their competitors. Conversely, those organizations that cannot act quickly due to an inefficient IT infrastructure are constrained and are subject to falling behind competitively in their industry.

Thus, the purpose of this research is to gain an understanding of the impact of management practices on IT efficiency and effectiveness. Although performance is an important dependent variable, it is secondary to IT management practices and will not be examined in this study. The remainder of the paper is organized as follows: The second section presents the theory, research question, model, constructs, and associated hypotheses. The third section provides an overview of the research method, and the fourth section the results of the field study. The fifth and final section discusses the implications of the study results and considers opportunities for future research.

Theory

Cost and the risk of failure within the IT function must be minimized for organizations to effectively compete in their respective industries while IT investment decisions need to be optimized. The management process, specifically for the IT function, which is directly related to effectively managing costs and mitigating the risk of failure, must be implemented to give the organization an opportunity to compete on an equal basis with its peers. Targeted outcomes (i.e., reduced costs and mitigating the risk of failure) must be controlled by the organization through enacted managerial practices. These practices take the form of rules and procedures and serve as the basis for properly functioning organizations. The controls enacted by managers pave the way for properly operating organizational processes for the supervision of the IT function. These practices are specific and tactical in nature, and are carried out by management. The practices attempt to influence outcomes so that results are favorable. Thus, practices can serve as a form of administrative
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