Chapter 20
To Adopt or Not to Adopt: A Perception-Based Model of the EMR Technology Adoption Decision Utilizing the Technology-Organization-Environment Framework

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ABSTRACT

For several decades the information systems field has studied the individual-level decision to adopt Information Technology (IT) with the primary goal of making it easier for organizations to derive value out of IT by increasing their effective and efficient use of the deployed IT. While the topic of non-adoption has been discussed within the literature, the focus in previous work has been upon the perceptions of the individual towards the innovation (or a micro-level of analysis), neglecting the broader context within which the adoption/non-adoption decision takes place (or a macro-level of analysis). However, what about situations in which there is institutional pressure influencing an adoption decision? This paper posits that institutional pressure external to an organization may alter the directionality and outcome of the decision. This study adopts the Technology-Organization-Environment framework to examine the context of a physician's decision about whether or not to adopt Electronic Medical Record (or EMR) technology. It reports on a multiple state study within the United States that examines the technology, organization, and environmental factors that discriminate between adopters and non-adopters.

1. INTRODUCTION

For several decades the information systems field has studied the individual-level decision to adopt Information Technology (IT) with the primary goal of making it easier for organizations to derive value out of IT by increasing their effective and efficient use of the deployed IT (Viswanath Venkatesh, Thong, & Xu, 2012). This line of work has resulted in a broad set of theories including

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the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh et al., 2012), the Task-Technology Fit (TTF) (Goodhue & Thompson, 1995), the Perceived Characteristics of Innovations (PCI) (Moore and Benbasat, 1991), and others (Schwarz & Chin, 2007). While these adoption theories seek to explain how and why users adopt technology, little is known about the behavior of non-adoption.

While the topic of non-adoption has been discussed within the literature (Bhattacherjee and Hikmet, 2007; Lapointe & Rivard, 2005; Schwarz, Schwarz, & Cenfetelli, 2012), the focus in previous work has been upon the perceptions of the individual towards the innovation (or a micro-level of analysis), neglecting the broader context within which the adoption/non-adoption decision takes place (or a macro-level of analysis). The micro-level focus on individual-level adoption (as exemplified by UTAUT) focuses upon how an individual perceives an innovation and the role of this perception on the decision regarding whether or not to adopt the innovation. We expect that in many technology adoption contexts this view will adequately address the key factors influencing adoption. However, what about situations in which there is institutional pressure influencing an adoption decision? We posit that institutional pressure external to an organization may alter the directionality and outcome of the decision. Specifically, in situations in which there is strong institutional pressure, we postulate that organizational and environmental considerations (or macro-level factors) will be significantly stronger than innovation-level perceptions (or micro-level factors) in the adoption decision.

In this study, we adopt the Technology-Organization-Environment framework to examine the context of a physician's decision about whether or not to adopt Electronic Medical Record (EMR) technology. Given the pressure from the United States government for physicians nationwide to adopt EMR technology and that the adoption and implementation of EMR technology was ranked as the top concerns for physicians (Gregg 2013), we will examine the impact of this institutional pressure upon the adoption decision, theorizing that this pressure has shifted the salient factors away from the innovation (or micro) level to the organizational and environmental (or macro) level. Thus, we highlight a gap in the literature, namely, a lack of understanding of the relationship between the environmental considerations, the organizational structure, and the individual level attitudes and decisions regarding the adoption/non-adoption decision of the individual.

2. THEORETICAL DEVELOPMENT

2.1. The Technology-Organization-Environment Framework

While many theories exist to explain adoption behavior, few of our approaches examine macro-level influences on micro-level behaviors. One notable exception is the Technology-Organization-Environment (or T-O-E) framework proposed by Tornatzky and Fleischer (1990). According to the T-O-E framework (Figure 1), there are three elements that influence the adoption decision: the organizational context, the technological context, and the environmental context. Within each of these contexts are specific constructs that dictate whether or not an innovation is adopted.

Originally proposed at the firm level, T-O-E has been utilized as a broad framework utilized to study both individual and organizational level adoption decisions. As summarized in Table 1, the framework has been employed across a variety of contexts, including e-business (Lin & Lin, 2008; T. Oliveira & Martins, 2010; Kevin Zhu, Kraemer, & Xu, 2003; Zhu & Kraemer, 2005; Zhu, Kraemer, & Xu, 2006), ERP (Pan & Jang, 2008), Knowledge Management Systems (Lee, Wang, Lim, & Peng, 2009), e-commerce (Liu, 2008; Oliveira & Martins, 2009; Teo, Rangana-