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Learning new uses of technology: Situational goal orientation matters

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Abstract

We study the decision to learn a new use of technology within a post-adoption context. This particular nuance of technology adoption is interesting because while the technology has been adopted at some level by both users and organizations, expanding technology use relies on users adopting additional tools and features within a given system on their own accord. This study addresses how situational goal orientation moderates the effects of ease of learning perceptions within the post-adoption context. We find that when a potential user has a situational learning goal orientation, they indicate intent to learn a new use of technology regardless of whether the technology is perceived to be easy or difficult to learn. However, potential users with a situational performance goal orientation indicate intent to learn the new system feature depending on ease of learning. These results have implications for future research using traditional technology acceptance parameters in the post-adoption context, and provide evidence that situational goal orientation is an effective managerial intervention for use in organizational training.
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1. Introduction

Businesses invest large sums of money in technology (up to 50% of firms' capital budgets) (Rockart et al., 1996), yet do not see comparable gains in productivity due to lack of full implementation by employees (Devaraj and Kohli, 2003). We study this phenomenon, specifically the decision to learn a new tool or feature within a technology that has already been adopted and used at some level. This context is interesting because while the organizational adoption decision has already been made, individual users have the ability to increase the use to a level that would benefit them and their organizations (Jasperson et al., 2005). We answer a call in the literature by studying the impact of a potential

managerial intervention on the decision to learn a new use of technology to increase efficiencies on the job (Jasperson et al., 2005). The managerial intervention of interest in this study is situational goal orientation.

Specifically, we study whether potential users are more likely to switch from a known means of completing a task to learn a new systems approach based on their situational goal orientation and ease of learning perceptions. The interaction of these constructs is interesting because depending on the situational goal orientation of the potential user, ease of learning perceptions may affect intent to learn a new use of technology contrary to what the Technology Acceptance Model (TAM) would predict (if only the main effects of ease of learning were present). We attribute this interaction to the potential user's reaction to the possibility of failure.

In the context of post-adoption behavior, potential users are faced with the possibility of attempting to learn, but failing instead. This potential failure may result in lost time

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and productivity, which are valuable commodities. Consideration of failure in a voluntary, post-adoption environment is important, because potential failure is not likely as a steep barrier in initial adoption or mandatory use phases as "failure time" is likely built into the implementation budget. Within the context of post-adoption behaviors, "failure" time would be costly to the user. Thus, this is a dimension of ease of use that should be considered.

When considering the impact potential failure has on the decision to learn a new use of technology, we believe that situational goal orientation will be an effective intervention. Goal orientation theory describes how the type of goals pursued by an individual affects decision making (Nicholls, 1984; Dweck, 1986). The two distinct classes of goals that have been identified are learning goals and performance goals. A learning goal is defined by eagerness to learn for the sake of self-improvement, whereas a performance goal is defined by wanting to appear better (or at least no worse than) one's peers.

The facet of goal orientation that deals with the reaction to failure is what we find to be interesting in the post-adoption context. With learning goals, failure is deemed a part of the learning process and, as such, is not feared. However, with performance goals, anything that might jeopardize performance is considered a threat, so failure is feared (Button et al., 1996). In the context of this study, if a potential system user has a situational learning orientation, they should view learning a system or a system feature as a positive self-improvement opportunity and intention to learn will not be as heavily influenced by ease of learning perceptions because fear of failure will be diminished. On the other hand, if potential users have a performance orientation, fear of failure will be heightened, which means that intention to learn will be influenced by ease of learning perceptions as traditionally shown in acceptance and/or adoption studies.

This study investigates the efficacy of situational goal orientation as a practical managerial intervention that can motivate users to expand their use of technology to increase effectiveness and efficiencies on the job, even when the technology is deemed difficult to use.

2. Background and hypotheses

This research investigates the decision to learn and use a new feature of an existing technology to replace a less efficient means of completing a routine task. This has been described as finding the equilibrium between exploring new possibilities (within a system) and exploiting old certainties (within a system; March, 1991). Most users of technology use a specific subset of available features, and seldom elect to extend this subset on their own (Jasperson et al., 2005). While determining how to encourage more encompassing use of technology on the job is of practical concern (Bowen 1986; Nambisan et al., 1999; Mahmood et al., 2001), there are a limited number of experiments studying this particular nuance of technology adoption.

Bhattacherjee (1998) performed an experiment where participants had to complete a task for which they had been trained, but they were given the option to complete the task using a more efficient/effective software solution that they had to learn in order to implement. The participants were more inclined to learn and use the new tool when the reward for doing so was significant. In a more recent study, Loraas and Wolfe (2006) performed an experiment where participants read a vignette that described a situation whereby the hypothetical character was faced with a routine task and had the option of learning a new software to complete that task, thereby also increasing future efficiencies. When the participants had sufficient motivation to follow their referents' preferences (staff accountants early in their careers) subjective norms dominated the decision of when to learn the new software to complete the task.

Our goal is to extend these findings by more closely examining the characteristics of the post-adoption context and to explore the efficacy of situational goal orientation as a managerial intervention to promote system users to learn new uses of technology.

2.1. The post-adoption context

The traditional technology adoption context typically focuses on new technologies, whereas the post-adoption context is concerned with users learning new features or functions within a system that has already been adopted by the user at some level (Jasperson et al., 2005). While traditional technology acceptance studies (whether using the TAM, or such more recent adaptations) rely in part on perceptions regarding ease of use to inform a potential user's intent to use a technology, we believe perceptions regarding ease of learning to be a more appropriate construct for the post-adoption context. Research on the discriminant validity of ease of use and ease of learning has concluded that the two constructs are highly correlated (.79), and are in essence, congruent (Roberts and Moran, 1983; Whiteside et al., 1985). However, we believe these constructs differ in one specific area, and that is the consideration of potential failure.

This subtle difference is important because an assumption that is inherent in most technology adoption studies is that once intent to use a technology is formed, there are no impediments to use (Loraas and Wolfe, 2006). However, in the post-adoption context, after forming intent to use, the potential user still has to attempt to learn the technology, and that attempt carries with it the possibility of failure. This potential failure is inversely related to perceptions regarding ease of learning. If ease of learning is perceived to be high, the perceived likelihood that the potential user will fail, if he or she tries to learn, will be low. On the other hand, if perceptions regarding ease of learning are low, the perceived likelihood the potential user will fail, if he or she tries to learn, is high. This potential for failure is especially salient in a voluntary environment, where the potential