A Technology Commitment Model of Post-Adoption Behavior

Y. Ken Wang, University of Pittsburgh at Bradford, USA
Pratim Datta, Kent State University, USA

ABSTRACT

Every year, individuals and organizations end up adopting (licensing) many competing software products. Yet, over time, much of the adopted software remains unused because users forgo the use of one software product for another adopted alternative. Although much research in the IS field has examined initial IS adoption, less is known about such post-adoption behavior. This article argues that a sense of “technology commitment” to one technology over other adopted alternatives is key to sustained post-adoption use intentions. By forwarding a technology commitment model, this article investigates the antecedents of technology commitment and its consequent effects on IS continuance. In the model, the article also examines how technological inertia moderates IS continuance intentions. Gathering empirical evidence from IS continuance intentions related to Webmail services, findings from the study offer interesting insights into the mechanics of continuance.

Keywords: Individual Characteristics, Information Technology Adoption, IS Use, User Behavior

INTRODUCTION

Consider most technology products and you will find that competing substitutes run the gamut. Additionally, the lure of shareware, freeware, and demo versions made available online by vendors has further spurred initial adoption among users. While individuals and organizations may adopt software alternatives, users, in the post-adoption phase, choose to continue to use a certain software technology and relinquish their use of a competing alternative. A study found that organizational adoption and investments in software range between 30 and 40 percent of the IT budget (Gallagher, 2006).

While both individuals and organizations adopt several technology products, only a few products actually experience continuance (Selwyn, 2003). The rest remains adopted yet underused, gathering dust as “shelfware.” Shelfware is a term used for software that has been adopted, but remain underused in the face of available alternatives. As such, shelfware refers only to software that has available adopted alternatives. Shelfware consists only of non-core software (e.g. document processors, image manipulation software, server software, email clients). Shelfware does not include core software technologies such as ERP (enterprise resource planning) or mainframe operating systems software where organizations cannot afford to adopt alternatives because of cost and effort.
considerations—requiring the choice and use of a single software product over extended periods of time. Therefore, the scope of our discussion limits itself to post-adoption user behavior for competing technology alternatives within a single technology category.

Shelfware is a growing concern for individuals and organizations alike. The issue is so acute that controlling shelfware is an essential control mechanism in any software asset management (SAM) program (Gallagher, 2006). Software that has been licensed but remains underused not only contributes to sunk-costs but also adds to the total cost of ownership (TCO) without offering instrumental benefits through use. The issue however is not only contained within organizational boundaries. Individual users also incur similar degrees of over-adoption and underutilization of software. It is common to find several examples of installed (adopted) software in our own computers that we rarely end up using. The importance placed by vendors on shelfware could easily be understood in the context of the Microsoft Windows XP operating system. Microsoft Windows XP has built-in functions that trace underused icons and remark on the periodicity of use of installed (adopted) software programs in their “Add/Remove Programs” function. While the effects are conspicuous, much need to be done to spell the linkages between IS adoption and IS continuance. What drives user intentions towards continuance of one technology product yet forego the use of other adopted technology product substitutes? Central to unraveling IS continuance is the need to understand why users end up using one of the many alternate (and easily/freely available) software products—an issue germane to scholars and practitioners. For research, understanding user behavior surrounding IS continuance allows for an extension of the adoption model. For practice, vendors of technology products would be immensely interested in knowing how and why users choose to continue to use a certain product among a set of competing alternatives.

The issue of IS continuance is equally relevant for customer relationship management (CRM) practices. Customer relationship management relies on distinct aspects of acquiring and retaining customers. While initial adoption allows for customer acquisition, retaining customers has become particularly important, especially in the face of hypercompetition. IS continuance highlights that very aspect of customer retention by surfacing the long-term (intended) behavior of users towards a particular technology product among other adopted alternatives in a competitive market. In customer relationship management, vendors therefore confirm retention by examining how long users continue to use a product in the face of other adopted alternatives. Unless research and practice are aware of why customers continue to use a certain technology product, the mechanics of continuance may remain anecdotal.

The remainder of this article proceeds as follows. The next section reviews significant prior research in IS literature that relates to post-adoption behaviors. Synthesizing commitment theory and continuance theory, a theoretical model linking technology commitment to IS continuance intentions is proposed in the model development section, followed by the empirical validation of the hypothesized model. Finally, we end with a discussion of the empirical results and the limitations of this research.

**LITERATURE REVIEW**

Within existing IS literature, there are three major lines of research in respect to users’ continued use of technologies. The first line of research extends the technology adoption model (TAM) to the research of continued use of IS. Scholars in this line of research view post-acceptance as an extended stage of acceptance process arguing that the same set of pre-acceptance predictors (e.g., usefulness and ease of use) remains major antecedents to continued use (Davis, 1989; Davis et al., 1989). TAM, along with its variations, emphasize the unidirectional causal relationships between cognitive beliefs and behavior intentions, overlooking social, psychological, and economic influences such
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