Chapter VI

Software Use Through Monadic and Dyadic Procedure:

User-Friendly or Not-So-Friendly?

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Abstract

Our research objectives are to provide a theoretical discussion on how software may impact user performance in ways contrary to designers' intentions and users' desires, and to empirically evaluate user performance impacts that derive from ostensibly performance-enhancing software features. We propose that dyadic procedure is associated with higher levels of user performance when compared to monadic procedure. Using word-processing software utilization as the research context, we test the proposition on data from 46 participants. Contrary to expectations, the results suggest that dyadic procedure may decrease the accuracy of users' work. We conclude that software design features that are intended to improve *user performance may have opposite effects, which raise questions about these features' utility and desirability.*

Introduction

Users' access to and utilization of computers have become widespread due in part to developments surrounding graphical user interfaces, multifaceted packaged software, the Internet, and electronic commerce. However, there are indications that suboptimal utilization persists (Brynjolfsson, 1996; Marcolin, Compeau, Munro, & Huff, 2000), which challenges a frequent assumption that unqualified utilization is positively related to performance (Thompson, Higgins, & Howell, 1994). Thus, it may be that users do not know how to carry out effective and efficient computer use, which may potentially have adverse consequences for individual and firm-level performance.

Partly in response to this situation and partly due to competitive necessity, software vendors have continually improved their products to increase ease of use and to enhance user performance outcomes. Despite these advances, we contend that software innovations do not uniformly produce favorable performance impacts. Moreover, we argue that a critical examination of software innovations' impact on user performance is needed for two related reasons. First, the various ways that users apply an innovative feature do not always coincide with developers' intentions, therefore the effects of any feature cannot be fully predicted. Second, while a software designer may *intend* that an innovative feature enhance user performance, the feature may *actually* bring about reduced performance.

Research Objective

Our research objectives are to provide a theoretical discussion on how software may impact user performance in ways contrary to designers' intentions and users' desires, and to empirically evaluate user performance impacts that derive from ostensibly performance-enhancing software features.

Research Scope

Our characterization of computer use relates to software that end users typically utilize in the workplace. End users include workers whose formal role designation lies outside the IS area (McLean, Kappelman, & Thompson, 1993) and who commonly use software referred to as productivity software. Productivity software includes Microsoft Office, Corel WordPerfect Office, Lotus SmartSuite, and the like.

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