Computer Information Satisfaction: A Longitudinal Study of Computing Systems and EUC in a Public Organization

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The measure of user information satisfaction (UIS) with an information system has become an important measure of the success of an information system. This paper reports on the use of end user computing (EUC) management techniques in a large public organization. The Ives, Olson, and Baroudi short-form measure of user information satisfaction was utilized before and after EUC management was introduced. In addition, the Doll and Torkzadeh measure of end user computing satisfaction was used to validate the satisfaction measure. A sample of mainframe and personal computer users of administrative computing systems from five departments was used in the analysis. Based on the results of the analysis, the EUC management techniques employed during the experimental period do not appear to have been effective for either the personal computer or mainframe application users. In addition, the paper presents a review of the relevant information satisfaction literature as well as the user information satisfaction scores of the sample.

Effective management of computing resources in large organizations is essential in today’s businesses. This is particularly the case for personal computing resources. End user computing (EUC) has become an important component of the management activities for personal computing. With the rapid growth and relatively new occurrence of personal computing, as well as the need for effective management of this resource, recent research has been in the areas of EUC, information centers, and EUC training.


The measure of user information satisfaction (UIS)
with an information system has become a common measure of the success of an information system. Different types of user information satisfaction instruments have been developed. The instruments developed by Bailey and Pearson (1983) and Ives, Olson, and Baroudi (1983) focus on the measurement of general user satisfaction. Other studies have also focused on UIS as a measure of success (Bailey and Pearson, 1983; Baroudi, Olson and Ives, 1986; Baroudi and Orlikowski, 1988; Doll and Torkzadeh, 1988). A second instrument, developed by Doll and Torkzadeh (1988), focuses on the measurement of end user computing satisfaction with a specific application. Recently, Torkzadeh and Doll (1991) reported on the short- and long-range stability of the end user computing measure of UIS.

Empirical research that focuses on the management of computing in the public organization is needed. In particular, longitudinal studies on the effectiveness of EUC management are desired. The objective of this study was to analyze the effectiveness of an EUC management strategy in a public organization. The purpose of the paper is to report on the effectiveness of strategies used in the management of computing services. Two measures of user information satisfaction were used to assess the effectiveness of the strategies. Satisfaction scores of applications using the strategies were compared to those that did not use the strategies. The satisfaction scores were compared to those taken before the strategies were implemented. In addition, results have been broken down into five user departments’ scores.

Review of the Literature

User Information Satisfaction (UIS)

The evaluation of computer software systems has focused on two areas of measurement: efficiency and effectiveness. Efficiency measures how well the system utilizes the resources (benchmarking, for example). Effectiveness measures how well the system accomplishes what it was intended to do. For many years the research in software performance evaluation focused on measures of efficiency. Recently the focus has been on measures of effectiveness (Srinivasan, 1985) and UIS. The measurement of UIS has been accomplished by several methods. Ginzberg (1981) and Rushinek and Rushinek (1986) used single-item measures of satisfaction. In other studies, multiple-item instruments have been developed to measure UIS to one degree or another (Bailey and Pearson, 1983; Gallagher, 1974; Ives, Olson, and Baroudi, 1983; Pearson, 1977; Shew, 1976; Schultz and Slevin, 1975; Seward, 1975). For an excellent review of the literature, see Ives, Olson, and Baroudi (1983).

The participation or involvement of the user in the software development process has been associated with system usage and with system satisfaction in several studies (Dickson and Powers, 1973; Ives and Olson, 1984; King and Rodriguez, 1981; Lucas, 1975; Olson and Ives, 1981; Robey, 1979). In addition, several recent studies have focused on user information satisfaction (UIS) (Baroudi, Olson, and Ives, 1986; Baroudi and Orlikowski, 1988; Doll and Torkzadeh, 1988). The study by Baroudi and Orlikowski (1988) showed that the short-form measure of UIS provides a reliable and valid measure of UIS. Factor analysis, correlation analysis, and reliability scores were used to evaluate validity and reliability.

The study by Doll and Torkzadeh (1989) showed that the end user computing measure of UIS provides a reliable and valid measure of UIS. Factor analysis, correlation analysis, and reliability scores were used to evaluate validity and reliability. In addition, Torkzadeh and Doll (1989) showed that the end user computing measure of UIS is internally consistent and stable. The test-retest correlation method was used to evaluate consistency and stability.

Although some concern has been expressed (Galletta and Lederer, 1989; Treacy, 1985) regarding the Ives, Olson, and Baroudi short-form instrument’s reliability and validity, the Ives, et al. short-form is frequently used (Barki and Huff, 1985; Mahmood and Becker, 1985; Raymond, 1985) to measure user information satisfaction. It was designed to measure UIS in the more traditional data processing environment, and has not been used in end user computing research (Doll and Torkzadeh, 1988). This article presents results of a study using both the Ives, et al. short-form instrument and the Doll and Torkzadeh end user computing satisfaction instrument to measure UIS of users of administrative computing systems in a large public organization.

End User Computing (EUC)

Significant research has been conducted in the area of EUC. Munro, Huff, and Moore (1987-1988) and Alavi, Nelson, and Weiss (1987-1988) both present EUC management strategies. The former suggests that a framework is needed by managers to help them: understand the dimensions of EUC strategies, understand how their organization fits into the framework, and understand mechanisms they have to influence their strategic EUC orientation and position. They present four strategies of EUC growth in the context of varying degrees of