



The Focus of Research in End User Computing: Where Have We Come Since the 1980s?

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During the 1980s, end user computing was often the domain of early adopters or "techies." But during the 1990s, the information technology (IT) revolution reached almost everyone in business organizations. Sophisticated and useful end user tools, lower costs of both computer hardware and software, continued improvements in performance, as well as a more computer-literate workforce have considerably extended end user computing (EUC). To assess the extent to which the focus of EUC research has expanded or shifted since the 1980s, the present paper reviews academic literature on EUC from the 1990s and maps it to a framework developed by Brancheau and Brown (1993). In addition, the present paper statistically compares the distribution of EUC research topics in the 1980s (as classified by Brancheau and Brown) to the distribution resulting from the present review of articles published in the 1990s. Issues identified as being in need of research at the close of the 1980s are revisited to determine if academic research in the 1990s has attempted to address them, and suggestions for future directions in EUC research are extended.

Successful management of end user computing ranks as one of the most important issues in organizations today (Clark, 1992; Guimaraes and Igbaria, 1996; McLean, Kappelman, and Thompson, 1993; Zinatelli, Cragg, and Cavey, 1996). Whereas end user computing (EUC) was often the domain of early adopters or "techies" in the 1980s, during the 1990s the information technology (IT) revolution has reached nearly everyone in business organizations. Continued improvements in performance, lower costs of both computer hardware and software, and a more computer-literate workforce have extended EUC throughout firms (Aggarwal, 1994). Instead of having to rely on a centralized information systems (IS) department for all technical applications, today's knowledge workers are increasingly using sophisticated tools to develop their own computer applications (Blili, Raymond, and Rivard, 1996; Delligatta and Umbaugh, 1993).

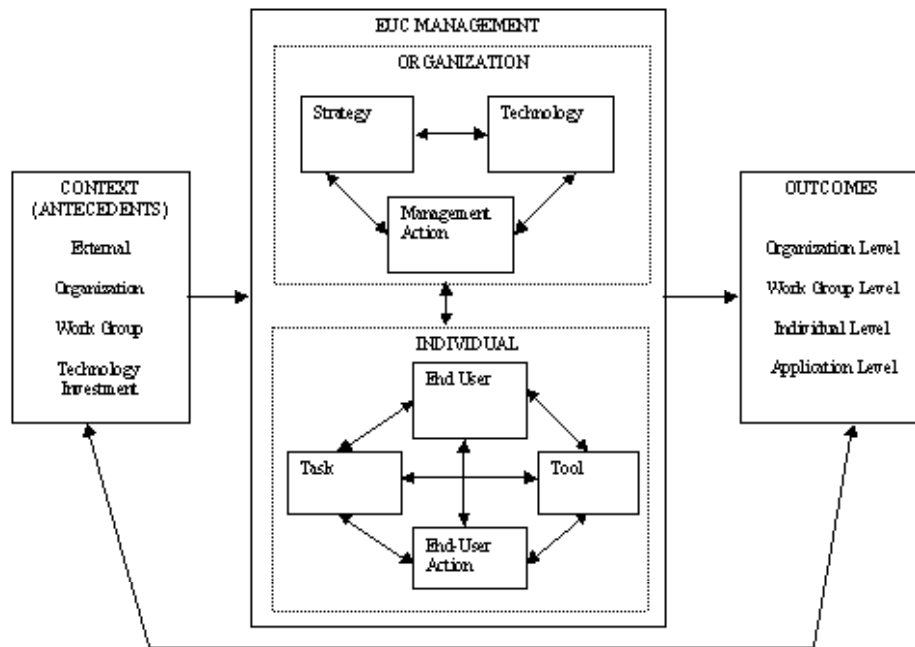
Research on EUC management began with a few seminal articles published between 1979 and 1981. During the 1980's, more than 90 conceptual and empirical studies were published in top MIS journals and major conference proceedings. In 1993, Brancheau and Brown critically surveyed the published research on EUC to determine what was known and

what was still unknown about managing EUC and, by doing so, to help direct future research.

In conjunction with the process of reviewing the literature, Brancheau and Brown (1993) developed a model to organize research on EUC, and this model is reiterated in Figure 1. The model places an emphasis on the *management* of EUC and takes the form of a traditional A-B-C model: antecedents, behavior, consequences. Two levels of behavior are captured in the model: organizational EUC management and individual EUC management. Four levels of antecedents (external, organization, workgroup, and technology investment) and four levels of outcomes (organization, workgroup, individual, and application) are identified. In addition, the model shows relationships among factors as reciprocal rather than as one-way linear causations. The Brancheau and Brown (1993) model captures key factors associated with EUC and, therefore, provides an appropriate structure for surveying and categorizing the research.

The present paper builds on the work of Brancheau and Brown (1993) by reviewing literature on EUC since 1990 (where Brancheau and Brown left off) and mapping it into their model. This review facilitates a statistical comparison of the distribution of topics addressed in the 1980s to the

Figure 1. EUC Management Research Model (Brancheau & Brown, 1993)



distribution of topics found in EUC literature of the 1990s.

The remainder of the paper is organized as follows. First, our classification methodology is described and the results of the content analysis of EUC articles from the 1990s are presented. Next, key articles from the 1990s EUC literature are discussed; this discussion is organized by the components of the Brancheau and Brown (1993) framework (antecedents, organization, individual, and outcomes). Then, the statistical method used to compare the distribution of research topics in the more recent EUC literature to the distribution of the 1980s literature is described and the results of the comparison are presented. Finally, the results of the present literature review and analysis are considered in conjunction with elements of today's EUC environment, as well as with Brancheau and Brown's identification of areas in need of further research at the close of the 1980s, to identify directions for future research.

CLASSIFICATION METHODOLOGY AND RESULTS

Methodology

In the present study, a content analysis of article abstracts and titles was undertaken to determine the focus of EUC articles published in academic journals since the Brancheau and Brown (1993) review. Key elements of the methodology include the definition of EUC that was utilized, the search procedures employed to identify EUC articles, and the coding scheme used in the content analysis.

Definition. A variety of definitions for EUC exist in the literature (Aggarwal, 1994; Cotterman and Kumar, 1989; Wetherbe and Leitheiser, 1985). For this study, the definition of EUC consistent with Brancheau and Brown (1993) is used: the adoption and use of information technology by personnel outside the information systems department to develop software applications in support of organizational tasks. Applications developed by IS professionals and clerical activities which use only word processing, desktop publishing, or electronic communications are excluded from the analysis.

Search procedure. To identify EUC articles in the 1980s literature, Brancheau and Brown (1993) surveyed nine specific journals (*Communications of the ACM*, *Data Base*, *Harvard Business Review*, *Information & Management*, *Information Systems Research*, *Journal of Management Information Systems*, *Management Science*, *MIS Quarterly*, *Sloan Management Review*); published proceedings from two annual conferences (*International Conference on Information Systems*, *Hawaii International Conference on System Sciences*); papers from the 1987 International Federation of Information Processing Workgroup 8.2 (*INFOR*, Volume 25, Number 3); and "a few noteworthy articles published in journals with primarily practitioner audiences or in a special journal issue devoted to EUC management" (Brancheau and Brown, 1993, p. 4). The 1980s literature examined by Brancheau and Brown spanned the timeframe of January, 1983 through December, 1990, but did not include all 1990 EUC articles.

In the present study, two ABI/Inform searches were conducted to gather articles on EUC. The first was a general

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