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Many issues that have the potential to affect the success of an information system development project have been discussed in the literature. Three issues which appeared to discriminate between successful and unsuccessful projects were identified in a 1981 study by Ginzberg. The present study enhances and expands his analysis to evaluate the stability of these issues. The purpose of this updated study is to identify which issues are associated with system development success as measured by computing satisfaction. The results indicate that although some of the issues identified by Ginzberg continue to be relevant to implementation success, their character has changed somewhat. Based on the responses from six companies, end-user computing satisfaction can be explained by the extent of project definition and planning, organizational commitment, breadth of analysis, user responsibility, and commitment to change. User ownership of the system was not considered an issue in the implementation process.

“Implementation of a computer-based information system is an on-going process which includes the entire development of the system through the feasibility study, systems analysis and design, programming, training, conversion, and installation of the system.” (Lucas, 1981). A more restricted viewpoint is offered by Swanson (1988): “Implementation is a decision-making activity that converts a design concept into an operating reality so as to provide value to the client.” Implementation is a process of organizational change and refers to the ongoing process of preparing the organization for the new system and introducing this new system in such a way as to assure its successful use (Davis and Olson, 1985).

Ginzberg (1981) published an exploratory study of the issues that lead to the successful implementation of information systems. Since that time, others have addressed the problem from a variety of viewpoints (Lucas (1981), Swanson (1988), Markus (1983), Tait and Vessey (1988), and others). Their objective has been to identify variables that can affect the process of designing, developing, and installing information systems with the intent of providing designers and managers with the knowledge they need to successfully institute the organizational change inherent in bringing a
The purpose of this study is to provide additional insights into systems implementation success and the issues that affect it. This paper extends and updates the study performed by Ginzberg (1981). Successful implementation issues are identified using a sample of six large companies. A method similar to Ginzberg’s is used to allow comparisons. Ginzberg’s issues are regressed as independent variables in a model with end user computing satisfaction as the dependent variable. Questions concerning the stability of the issues over time can be addressed. Clearly, the organizational environment for systems implementation has changed during this time which could affect the relative importance of the different issues. This study adds to the understanding of issues that affect development success. To determine which issues are associated with successful development, the following research hypothesis is tested:

\[ H_0: \text{There is no relationship between system development issues and system success as measured by end user computing satisfaction.} \]

**Issues that Affect Implementation**

Many other issues that may affect implementation success have been identified in the information systems literature since Ginzberg’s study was published. Some have been empirically verified while others remain prescriptive. This body of knowledge is a result of many years of study and represents a more thorough understanding of the systems development and implementation process. However, these findings are not always consistent with Ginzberg’s results. Figure 1 presents a summary of the issues identified by Ginzberg and others. These issues can be grouped according to who controls them or is most affected by them—user-oriented, designer-oriented, and management-oriented.

User-oriented issues include user involvement, expectation, and training. Various studies have shown that user involvement is very helpful in complex projects and is effective because it restores or enhances the users’ perceived control over their work (Alter, 1978; DeBrabander and Thiers, 1987; DeSanctis and Courtney, 1983; Swanson, 1988; Tait and Vessey, 1988; Zmud and Cox, 1979). User understanding of what the system is going to do is discussed by Swanson (1988), Lucas (1978), Cerveny and Sander (1986), and Ginzberg (1981). User training can help the user understand why the MIS is being introduced and how the project will affect them during and after implementation. This knowledge may make users more willing and able to contribute to an implementation effort according to Zmud and Cox (1979) and Stanford (1984).

While directly affecting users, training can also be considered a designer-oriented issue. Training is often provided to the users by the designer and should include a users’ manual as well as formal training (Gunawardane, 1985; Stanford, 1984; Zmud and Cox, 1979). Other designer-oriented issues include understanding of design quality, proper techniques (e.g. use of implementor), and project management. Designers must have an understanding of users and their information needs (Cherveny and Sander, 1987; Swanson, 1988). The quality of the information system design is the
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