Critical Strategies for IS Projects

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INTRODUCTION

Despite enormous progress in the methodologies and technologies used in the development and implementation of information systems (IS), the failure to achieve IS success on a consistent basis continues to plague the efforts of many companies (Clegg et al., 1997). The success or failure of an IS has been defined in a variety of ways depending on a number of factors, such as the nature of the system and the perspective of the various stakeholders (i.e., IS developers, users, and management). In general, IS success is often subjectively assessed on the basis of how well the system achieves strategic, informational, and transactional benefits for the organization (Mirani & Lederer, 1998).

In order to increase the likelihood of IS success, a variety of approaches and recommendations have been offered. One of the earliest and most popular proposals for increasing IS success was based on the concept of critical success factors (CSF). This proposal assumes that IS failure can be significantly reduced by identifying a small set of factors that are essential for the achievement of IS success (Rockart, 1979). Use of the CSFs approach may make the IS planning process more efficient by providing managers with a decision aid for determining the key areas that are likely to need the most attention and how scarce resources should be allocated. Identification of CSF may also enhance communication about potential problems that may arise due to differences in the perspectives among various stakeholders. Another potential advantage of the CSF approach is that it facilitates the learning process. That is, the CSF approach increases stakeholders' understanding of the IS development process and the ultimate objectives of the system and how the overall development process can be evaluated (Pollalis & Frieze, 1993).

BACKGROUND

Some researchers have attempted to identify the critical factors based on an examination of which factors are statistically related to IS success. In this approach, user satisfaction is often used as measure of IS success. One of the first examples of a study based on this approach used a discriminant analysis procedure to examine which factors best distinguished between successful and unsuccessful projects (Ginzberg, 1981). The results indicated that organizational commitment, commitment to change, and extent of project definition and planning were the best predictors of user satisfaction.

Perhaps because some researchers are not convinced that user satisfaction provides a sufficient surrogate measure of the overall success and benefits of an IS (see Mirani & Lederer, 1998), many investigators have attempted to identify the CSFs based on the views of IS experts. In these studies, IS experts directly assessed the relative importance of potential success factors (e.g., Burn & Szeto, 2000; Jiang, Klein & Balloun, 1996). In general, the results of studies examining the views of IS experts have demonstrated some agreement with respect to the CSFs, although some differences have been observed among the various studies.

Much of the early research on the CSF approach assumed that once the key factors were identified, the same critical factors might apply to the development of all IS. However, as the nature and types of IS have become increasing diverse over the past two decades, much of the recent research has adapted the CSF approach to identifying the key elements that apply to various types of IS and to new areas of IS applications. For example, studies have attempted to identify the CSFs in areas involving executive information systems (Chen & Lee, 2003; Poon & Wagner, 2001), object-oriented analysis and design (Pei & Cutone, 1995), computer-assisted software engineering (Summer & Ryan, 1994), geographical information systems (Nasirin & Birks, 2003), data warehousing (Mukherjee & D'Souza, 2003), emerging information systems in the public sector (Bajjaly, 1999), implementation of integrated services digital networks (Lai & Clark, 1998), enterprise resource planning systems (Akkermans & van Helden, 2002; Al-Mashari, Al-Mudimigh & Zairi, 2003; Umble, Haft & Umble, 2003), information systems requirements gathering (Havelka & Sooun, 2002), the IT alignment planning process (Peak & Guynes, 2003), strategic planning in Eastern cultures (Ang & Teo, 1997), managing

decentralized information technology (Birge, 1997), performance of information centers (Guimaraes, Gupta & Rather, 1999), outsourcing implementation (Kim & Young-Soo, 2003; Soliman, Chen & Frolick, 2003), extranet adoption in e-supply chain (Chow, 2004), and facilitating participation of many people in the IS planning process (Peffers, Gengler & Tunnanen, 2003).

Another perspective for remedying the problem of low IS success rates is to identify the causes of IS failure (Williams & Ramaprasad, 1996). According to this viewpoint, there may be inhibiting factors that play a key role in causing IS failure, and therefore it is important to identify both CSFs and critical failure factors (CFFs). Otherwise, a disproportionate amount of attention may be devoted to enhancing factors only to discover that there are inhibiting factors that prevent IS success.

Several studies have surveyed IS experts in attempts to identify the key factors contributing to unsuccessful or abandoned IS projects (e.g., Jiang, Klein & Balloun, 1998; Lyytinen, 1988). For example, Ewusi-Mensah (1997) examined abandoned IS projects and found that poorly defined project goals, lack of project team experience and expertise, inappropriate technology, lack of top management involvement, and escalating project costs were among the reasons for IS failure.

Many of the factors identified as CFFs are the same factors identified as CSFs. Thus, a CFF may simply be the absence of the CSF. However, there appears to be enough differences in the results of studies on CSFs and CFFs to warrant an investigation on the possibility of both enhancing and inhibiting factors (e.g., Lyytinen, 1987).

PURPOSE OF STUDY

Although numerous studies have investigated potential CSFs or CFFs, apparently there has not been any attempt to examine both types of factors in a single study. One objective of this study was to examine if there are any differences in the relative importance of the factors believed to contribute to the success and failure of IS projects.

Consistent with the notion that CSFs may vary depending on the nature and type of IS, a second goal of this study was to examine potential cultural differences in IS developers' views on CSF. A limitation of prior research attempting to identify the CSFs and CFFs is that almost all of the research has focused on the views of IS developers in Western cultures. With an increasing number of corporations developing and implementing IS applications that cross national boundaries and span diverse cultures, there is a need to determine if the factors viewed as most important by IS developers in the Western culture are the same factors viewed as most important by IS developers in other cultures. It may be particularly important to investigate the views of IS developers in Eastern Asia. Several countries in Eastern Asia play a significant role in the area of global information technology (McIntosh, 1999). In addition, the vast differences between Western and Eastern cultures have created a number of obstacles to the successful development of global IS when Asian offices are involved (Burnson, 1989). Thus, this study focused on an investigation of the views of IS developers from Korea.

The present study addressed the following two goals.

1. Which factors do IS developers in Korea view as most important for contributing to IS success and to IS failure?
2. How similar are the views of IS developers in Korea regarding CSFs and CFFs to the results reported in previous studies involving IS developers from Western cultures?

RESEARCH METHODOLOGY

Critical Factors: Based on prior studies examining CSFs and CFFs, this study identified 18 potential factors. These factors are controllable and applicable to IS developers in international environments. The 18 factors are listed in Table 1. The failure factors are expressed as the absence or insufficient condition of the success factors.

Respondents: A systematic random sampling procedure was used to distribute the surveys to IS developer in 10 Korean organizations. The number of IS developers surveyed in each organization ranged from 4 to 29, resulting in a total of 127 useable surveys. Most of the respondents had a least a college degree (83.5%). The average age of the respondents was 32.24 with a standard deviation of 4.42 years. The average number of years of experience in the field was 6.25.

RESULTS AND CONCLUSIONS

The sample means and rank order of importance for the CSFs and CFFs are presented in Table 1. As illustrated in Table 1, user participation, clearly stated objectives, and top management support were viewed as highly critical with regard to both IS success and IS failure. In general, the factors viewed as least important by IS developers from Korea were technical factors and/or tactic-related operational factors (e.g., methodology, prototyping, etc.). Apparently IS developers view organizational factors as more crucial for IS success, possibly because they have