Assessing IT Strategy with the STEP Model

Theophilus B. A. Addo, San Diego State University, San Diego, CA 92182, USA; E-mail: taddo@mail.sdsu.edu

INTRODUCTION

It has now become abundantly clear to most business organizations that any so-called "IT strategy" must encompass more than just IT (i.e., the technology) *per se*. Having the "latest and greatest" technological gadgetry (i.e., computers) does not necessarily translate into an effective IT strategy without sufficient attention being paid to the *people* who will be using the technology or the *business processes* for which the technology will be used. To gain competitive advantage in today's turbulent and highly competitive business environment, organizations need to be prepared for continual transformation in order to be successful and be able to respond quickly and effectively to changes in the environment. This includes, among other things, transformation in structure, processes, culture, and philosophy. Additionally, they need to be able to exploit relevant information technologies for their advantage—indeed IT is a major driving force for many organizational transformations and competitive positioning. The focus of this paper is primarily on the technology, process, and staff dimensions of IT strategy.

Increasingly, IT's contribution to a firm's bottom line has come under scrutiny by CEOs, who have invested significant resources into IT systems and projects (Haag et al., 2006, Luftman, 2004, Applegate et al., 2003, Wen and Yen, 1998; Axson, 1996) and are now beginning to seek results and accountability from these investments. While there have been many business successes reported in the literature about corporate IT investments (e.g., Stratopulos, 2000, Hitt and Brynjolfsson, 1996), there has also been an impressive number of failures resulting from unsuccessful IT projects. According to a survey by the Standish Group, 73 percent of corporate America's IT projects in 1996 were late, over budget, or canceled. Project failures cost an estimated $145 billion per year (Thorp, 1999). Notable among the reasons given for IT project failures are the following: a lack of alignment of IT projects with business strategy (Luftman, 2004, Boar, 1994, Floyd and Woodridge, 1990) and a lack of integration of IT into the activities of the people who use it (Bates, 1999). Both of these factors can be mitigated by an IT strategy which incorporates technology, people, and business processes, all within the context of overall corporate business strategy.

The need for a multi-dimensional approach to IT strategy has been articulated by other authors. For example, Bartlett and Ghoshal (1994, 1995) proposed the dimensions of *Purpose*, *Process*, and *People*. The present study uses another model, the STEP model, proposed by Wysocki and DeMichiell (1997), which looks at IT strategy along the dimensions of *Technology*, *Process*, and *Staff (People)*. Specifically, the 'STEP' in STEP model stands for **S**trategy for **T**echnology **E**nablement through **P**eople. This model recognizes that organizations cannot rely on technology, by itself, for competitive advantage but, rather, need to have an information-empowered staff which is able to utilize information technology effectively, as well as efficient business processes, all working together in concert. Using the STEP model, an organization can assess its standing on each of the model's three dimensions of technology, process, and staff to give an indication of how well it is positioned with respect to its ability to exploit IT opportunities for competitive advantage. Such an assessment can also help organizations in the formulation of an effective IT strategy (or the revision of current strategy) by focusing attention on the dimension(s) most in need of improvement.

RESEARCH OBJECTIVE

The objective of this study is to utilize the STEP model to determine how well various organizations are addressing the important performance dimensions of technology, process, and staff. This assessment gives an indication of the ability of these organizations to effectively utilize information technology for competitive advantage and for overall corporate performance.

METHODOLOGY

The STEP model, as proposed by Wysocki and DeMichiell, was strictly conceptual. Therefore, to convert it into a useful and practical assessment tool, it was operationalized as a questionnaire which could be administered to organizations. The questionnaire was created by developing a set of questions that addressed each dimension of the model (technology, process, and staff) as well as a few additional questions seeking demographic and other relevant information from the respondents; approximately 40 questions were developed in total. For those questions pertaining to the model's dimensions, respondents were asked to assign a numerical score ranging from 1 to 10 to each question. Before sending out the questionnaires to the actual respondents, a pilot study was conducted, in which the questionnaire was first sent to eight senior IT and business executives in various organizations in southern California for their comment, feedback, and suggestions with respect to the appropriateness of the questions, the length and duration of the questionnaire, etc. Based on the feedback received from these executives, the questionnaire was refined and mailed to about 350 senior IT and business executives in a variety of companies in various industries in the United States.

DATA ANALYSIS

Some completed questionnaires have been returned and data analysis is still ongoing. The plan of the data analysis is to:

a. determine the relative score on the technology, process, and staff dimensions of the STEP model for each organization (respondent)
b. see if there are any significant differences in the responses given by IT professionals and business professionals
c. see if there is any correlation between the given scores and various demographical factors such as company size and industry.

REFERENCES

Available upon request.

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