



Chapter IX

**Managing Strategic IT
Investment Decisions From
IT Investment Intensity To
Effectiveness**

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Many information technology projects fail, especially those intended as strategic. Yet, there is little research that attempts to explain the link between the IT investment intensity of strategic investment decisions (SIDs) and organizational decision-making, in order to understand this phenomenon. This paper proposes an analytical model employing a number of constructs: effectiveness of decisions, interaction and involvement in the decision-formulating process, accuracy of information and strategic considerations in the evaluation process, rarity of decisions, and the degree of IT intensity of an investment in strategic investment decisions. The model explores the relationships influencing the effectiveness of decisions. Empirical testing is based on a sample of 80 SIDs from Taiwanese enterprises. The results show that interaction, accuracy of information, and strategic considerations are mediators in the linkage of IT investment intensity and the effectiveness of SIDs. The implications of these findings for the management of strategic IT investment decisions are discussed.

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INTRODUCTION

Control issues have been given lower priority than the planning or organizational problems of information management (Earl, 1989). Making effective investment decisions for strategic IT projects has become a critical task. Numerous cases of successful information systems have been cited as a basis for encouraging the strategic use of IT. However, other cases (e.g., the computer-aided dispatch system of the London Ambulance Service) have been failures. For the London Ambulance Service “the single most important factor was the inadequacy of the organization to control such large and technically complex operations” (Hougham, 1996). Such experiences demonstrate the critical importance of managing strategic IT investment decisions (SITIDs) effectively.

Research into SITIDs is not new. Clemons and Weber (1990) provide some principles on which to base an evaluation of a strategic IT venture. Other studies focus on evaluating IT projects (Willcocks, 1992) and report the difficulties involved in evaluation processes (Clemons, 1991). However, evaluation is only one part of the investment decision-making process. It is insufficient to manage SITIDs only through evaluation activities. Weill and Olson (1989) emphasize that “the first step in managing IT investment is to know exactly what that investment is.” It is, therefore, necessary to clarify the nature of SITIDs.

SITIDs form part of corporate strategic investment decisions (SIDs). However, research has concentrated on either SITIDs or SIDs, ignoring the continuous nature of decisions (Simon, 1977). Decisions can be distinguished according to several dimensions, including strategic versus operational, structured versus unstructured, and dependent versus independent. SIDs have different degrees of IT intensity that are also an important dimension of the IT/non-IT continuum. Chou, Dyson and Powell (1997) find IT investment intensity to be negatively associated with the effectiveness of SIDs. However, how IT investment intensity and the effectiveness of SIDs are linked has not yet been convincingly demonstrated and further investigation is needed.

Dean and Sharfman (1996) point out that management may use different processes to make different types of decisions. Further, Mohr (1982) argues that the link between decision process and outcome is so intimate that “the process is itself an outcome.” Taken together, these two arguments may imply that the link between IT investment intensity and the effectiveness of SIDs is not a direct one and the impact of IT investment intensity may be through the decision process. If different degrees of IT intensity lead to different processes, which, in turn, lead to different outcomes, then it is important to know what factors can act in this kind of role, so that they can be taken into account in the evaluation and management of SITIDs. This paper proposes an integrative framework for exploring the relationship between IT investment intensity and the effectiveness of SIDs. The framework is used to gain additional insight into the linkage. The possible relationships are, therefore, derived from the framework. This paper uses survey data from Taiwanese manufacturers to test the hypothesized relationships.

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