## Chapter VIII

# A Knowledge Base for Information Systems Success Research

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## ABSTRACT

*A knowledge base representing the state of information systems success research in the MIS formative period of 1981-87 was published previously. The knowledge base relates five independent variables (organizational environment, user environment, IS operations environment, IS development environment and information systems) to information systems success. This chapter enhances the knowledge base by presenting it in different views. The summary views provide a big picture view of the relationship between an independent variable and information systems success, whereas the detailed views allow researchers to drill down to individual studies that investigated such a relationship. The chapter also illustrates how the knowledge base can be updated to facilitate the ongoing research of information systems success.*

## INTRODUCTION

The purpose of this chapter is to present a knowledge base in an effort to facilitate information systems success research. MIS researchers have studied a large number of factors that may contribute to information systems success

over the years. These studies have produced a lot of data or information. The literature, however, is often not very useful in knowledge synthesis and accumulation as it is plagued by inconsistent findings reported in individual studies. The problem can be attributed to methodological weaknesses of individual studies (Jarvenpaa, Dickson, and DeSanctis, 1985) or simply probability, as Taveggia (1974) put it, "if a large enough number of research has been done on a particular topic, chance alone dictates that studies will exist that report inconsistent and contradictory findings!" (p. 398).

Alternatively, the seemingly inconsistent literature can be the result of inadequate review methods. Rather than a qualitative, narrative review, a meta-analysis can be used to resolve inconsistent findings accumulated in the literature through the application of rigorous statistical procedures (Hwang, 1996). In MIS, this has been done in the areas of graphics (Hwang and Wu, 1990), DSS implementation (Alavi and Joachimsthaler, 1992), GSS (Benbasat and Lim, 1993; Dennis and Wixom, 2002; Hwang, 1998; McLeod, 1992) and user involvement (Hwang and Thorn, 1999). Hwang, Windsor and Pryor (2000) conducted a meta-analysis that aims not to resolve controversies in a given area but to integrate findings of all information systems success studies. Their research produced a knowledge base that provides a snapshot of the state of the information systems success research in the MIS formative period of 1981-87. *Figure 1* is a graphical presentation of the knowledge base, which shows the correlations of five independent variables, information systems, organizational environment, user environment, IS operations environment and IS development environment with information systems success, as measured by use, satisfaction, individual impact and organizational impact. The current chapter intends to enhance this knowledge base to facilitate the ongoing research of information systems success.

# DISCUSSION

The first enhancement to the knowledge base is the publication of the detailed results of the individual studies reviewed by Hwang, Windsor and Pryor (2000). Due to space limitation, Hwang Windsor and Pryor (2000) presented individual results only for studies measuring organizational environment variables. While a summary or big picture view is useful, sometimes researchers may want to drill down to individual studies for further reference and study. This chapter presents the knowledge base in both the summary and detailed views. The summary views are shown in *Tables 1, 3, 5, 7* and *9* and the detailed views are shown in *Tables 2, 4, 6, 8* and *10*.  To assess the relationship between one independent variable, say, organizational environment and information systems success, the reader is referred to an odd numbered table (*Table 1* in this chapter). The detailed view of this relationship follows immediately (*Table 2* in this chapter).

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