Chapter 6.17

An Overview of Executive Information Systems (EIS) Research in South Africa

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INTRODUCTION

Executive information systems (EIS) are designed to serve the needs of executive users in strategic planning and decision-making. Sometimes the terms "executive information systems" and "executive support systems" are used interchangeably (Turban, McLean, & Wetherber, 1999). Definitions of EIS are varied but all identify the need for information that support decisions about the organization. EIS can be defined as "a computerized system that provides executives with easy access to internal and external information that is relevant to their critical success factors" (Watson, Houdeshel, & Rainer, 1997).

This article is organized as follows: The background to EIS implementation is given. EIS research studies undertaken in South Africa are then described. Some future EIS trends are then suggested.

BACKGROUND TO EIS IMPLEMENTATION

A number of possible indicators for a successful information system (IS) have been suggested in various implementation studies (see, for example, Laudon & Laudon,1998). The definition of implementation includes the concept of success or failure. Implementation is a vital step in ensuring the success of new systems.

The EIS implementation process is defined as the process used to construct an EIS in an effective manner (Srivihok, 1998). Different factors have been suggested by various researchers as influencing successful EIS implementation (see, for example, Rainer & Watson, 1995). However, there is no agreement on which factors play key roles in EIS implementation. A large number of success factors have been repeatedly suggested by practitioners and researchers, even though empirical studies on the success factors are rare.

EIS are high-risk application systems that are expensive to build and maintain (Strydom, 1994). For example, in October, 1997, the largest water utility in South Africa, Rand Water, took a decision to build an EIS (based on Oracle® products) and invested ZAR4.5m in revamping its IT infrastructure to support that deployment. In the case of Rand Water, the organization's EIS eventually played a major role in providing its executives with benchmarking information helping them track Rand Water's overall performance against a set of objective criteria.

EIS RESEARCH UNDERTAKEN IN SOUTH AFRICA

A review of previously conducted EIS research at universities in South Africa is undertaken. From this collection, the nature of EIS research for each study is discussed. South African databases were searched for research literature (essays, technical reports, thesis, dissertations, etc) with the key-words "Executive Information Systems" in the title. Nine successful "hits" were found. Those research articles are reflected in chronological publication sequence in Table 1.

The nature of each of the nine EIS studies in South Africa is now briefly discussed:

- **Researcher No 1: Design and Implementation of Executive Information System (EIS):** DeWitt (1992) discusses critical success factors (CSFs) for EIS development and states that the type of EIS for an organization will depend on the information requirements of the organization. It should be driven by the CSFs that are unique to a particular business. From previous studies, DeWitt (1992) identifies nine CSFs for an EIS (see Table 2) and notes that there "are differences of opinion in the literature regarding the selection of the right technology" as a CSF.

This study was undertaken with sixteen large Cape Town companies from various industry sectors. The findings from Watson's international survey (Watson, Rainer, & Koh, 1991) were compared against the local (South Africa) survey findings. The findings indicate (1) congruences between the literature search and survey findings; (2) major conflicting results between the local survey, the international survey and literature search; and (3) major problems encountered in developing EIS.

- **Researchers No 2: An Assessment of the Penetration of Executive Information Systems:** Twemlow et al. (1992) carried out an exploratory study that showed the extent of EIS penetration in South Africa. The sample (61 companies) was selected from the 1992 Financial Mail survey (a reputable weekly financial publication) of "top" companies in South Africa. The research instrument was designed to evalu-

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