Top Management’s Role in Promoting Decision Support Systems Efficiency: An Exploratory Study in Government Sector in Saudi Arabia

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ABSTRACT

Despite overwhelmingly positive reviews for decision support systems, the IS literature has produced inconsistent results regarding the role of top management and the effectiveness of these systems. IS researchers are concerned with there being a widening gap between research and practice, leading to the current study, focusing on the relevance of these two constituencies. This study employs the Delphi methodology in relation to Saudi Arabia to investigate the reality of the decision support systems in governmental organizations and the diverse issues related to making effective use of them by increasing the role of top management. The findings revealed that there is an absence of a role for IT in the decision-making process, and that there is a lack of robust data warehouse systems capable of supporting organizations’ top management with high-quality information. The study revealed various required reforms of various governmental and institutional arrangements and obligatory aspects of the efficiency of decision support systems.

KEYWORDS


INTRODUCTION

Background

In today’s contemporary organizations, the role of top management has become increasingly complex due to the fast-paced, dynamic, and changing business environment (Loonam & McDonagh, 2005; Bansal & Agarwal, 2015; Momoh et al., 2010). Organizations exist within a global framework and experience continuous technological change. Thus, organizational design has become less static than it previously was (Loonam & McDonagh, 2005). Therefore, this requires a new approach centered on the effective exploitation of all the available tools (Bansal & Agarwal, 2015). The term “top management” (TM) can refer to an individual or to a team of executives who are responsible for directing the organization and controlling the strategic decisions that align an organization’s business with its environment (Carpenter et al., 2004). TM spans the boundary between an organization and the environment within which it operates and leads the strategic decision-making process to maintain an organization’s development and market its competitive advantages (Liu et al., 2015).

TM currently views strategic information technology (IT) solutions such as Decision Support Systems (DSSs) as both a crucial asset for efficient organizational-related information services, and

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a cost-effective decision-making support to manage rising costs. The purpose of DSSs is to provide support to and enable the improvement of managerial decision-making (Arnott & Pervan, 2005). DSSs are “executive mind-support systems” involving a high degree of human-computer interaction in support of “the behavioral aspects of decision-making and extensions of the analytical capabilities of decision makers” (Chen & Lee, 2003, p. 147).

Despite the positive impact of DSSs on organizations shown in theory, the findings of the empirical literature in regard to the effectiveness of DSSs and to their interaction with an organization’s TM have hitherto been inconsistent. Within the DSS literature, Arnott (2006) noted that Information Systems (IS) researchers are concerned with the widening gap between theory and practice in regard to the role played by organizations’ TM in relation to effective DSSs and efficient management. In addition, Arefin et al. (2015) stated that, although the link between the decision-making organization’s TM and DSS capabilities is obvious, it has hitherto remained largely unexamined in the related literature. Further, some scholars (e.g., Kulkarni et al., 2017; Arnott, 2006) have pointed out that IS research on the role played by the TM in developing the organizational capabilities of DSSs has failed to garner continued interest. Therefore, both IS theory and practice have failed to explore the reality of DSSs and the diverse antecedents of their effective use by means of emphasizing the TM’s role.

The Significance of the Study

Little information pertaining to DSS applications in developing countries and their overall organizational effectiveness has hitherto been available. Thus, this study focuses on DSSs in the Saudi government organization context, with the goal of determining the most influential variables between TM and DSSs. It does so by attempting to understand whether the TM in the Saudi governmental sector would be capable of effectively using DSSs—and the antecedent conditions needed for TM to develop decision-making process capabilities geared toward making DSSs efficient. In doing so, this study raises the following questions:

1. How can DSSs increase TM efficiency in the Saudi governmental sector?
2. What is the reality of DSSs in the Saudi governmental sector?
3. Is the Saudi governmental sector TM capable of effectively using DSSs?
4. What issues affect the TM’s role in promoting the efficient use of DSSs in Saudi governmental organizations?

The research questions listed above were investigated and the required empirical data were gathered through five rounds of data collection employing the Delphi method. The data were gathered from a sample consisting of 20 experts selected in Saudi Arabia from four pertinent categories of experts. This study is unique due to the nature, scope, and method of the investigation—it is the first to examine the reality of DSSs and the TM’s role toward the efficient use of DSSs within the Saudi governmental sector. In doing so, it addresses a gap in the literature about the role played by TM in relation to DSSs efficiency in governmental organizations, particularly in developing countries. Therefore, several underlying reasons motivate this important study:

- **First**: Although TM is expected to be effective in dealing with digital space leadership challenges (Van Wart et al., 2017), the interaction between TM and IT systems “remains at the very nascent stages of development” (Avolio et al., 2014, p.105). Some scholars (e.g., Van Wart et al., 2017; Arnott, 2006) have called for a study of the “antecedent conditions” needed for TM to enhance IT system efficiency, which have remained largely unexamined in the IS-related literature. Avolio et al. (2014) emphasized that there is a recursive relationship between the TM and the building of IT capabilities and that, therefore, scholars should consider not only the ways in which IT
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