Chapter 15
Evaluating Critical Success Factors Model of Knowledge Management:
An Analytic Hierarchy Process (AHP) Approach

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ABSTRACT

Knowledge management is a critical issue in today's business world. Knowledge is considered to be one of the most strategic resources of a firm and sources of competitive advantage. This paper identifies and ranks Critical Success Factors (CSFs) for implementation of knowledge management in the Iranian Energy Sector. Using the Analytic hierarchy process (AHP) method the relative quantitative weights of 8 of the major CSFs for implementation of knowledge management are identified, based on analyses with KM designers in the Iranian energy sector. The outcomes of the research designate that the critical success factors in the order of importance are: corporate culture, human and financial resources, strategy and leadership, structures and procedures, meso environmental factors, knowledge management process, macro environmental factors, technology and infrastructure.

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INTRODUCTION

Knowledge has become a critical driving force for business success and value creation (King & Zeithalm, 2003). Many firms are exploring the field of knowledge management (KM) to improve and sustain their competitive advantage, and consider KM as a critical resource. KM strives to make tacit knowledge and experiences more easily available, to increase efficiency and effectiveness of organizations. As KM has become a noteworthy subject in recent years, businesses focus on leveraging and capturing the value of knowledge.

There are several studies focusing on KM in the energy sector. For instance, Jennex (2008) explored the role of using knowledge on the efficiency of companies in the energy sector. The energy sector is one of the largest industries in the Iranian economy. For instance, 60% of the Iranian government revenues are created by oil production (Farzanegan, 2011). The international sanctions have affected both revenue and availability of transfer of technologies and technical assistance for the energy sector. In the resulting resource-constrained environment Iranian energy industry needed to invest more in their own knowledge management (KM) projects.

Exploring and evaluating key factors of implementing KM is an approach for identifying success of KM projects. Critical Success Factors (CSFs) are factors influencing successful performance of individual employees, of individual departments, of individual businesses, and of sectors (Alazmi & Zairi, 2003; Huang & Lai, 2012). Often KM enablers and barriers are defined as critical success and failure factors (Yeh, Lai, & Ho, 2006), however these are most often related to an individual participant's perspective. This study examines preferences of these enablers and barriers in the Iranian energy industry from the perspective of the business. Understanding critical success factors for KM is necessary to be able to support knowledge creating and sharing (Laudon & Laudon, 2004).

To date, several CSF model have been examined in the KM literature, but few studies have compared and ranked CSFs for KM implementation. The study presented in this paper identifies and ranks a comprehensive KM critical success factors model as presented in (Sedighi & Zand, 2012) using the analytical hierarchy process approach (Saaty, 1980). The model presented in (Sedighi & Zand, 2012) used a literature review approach to identify critical success factors and these incorporate both organizational (internal) and environmental (external) factors. The conceptual classification of CSFs identifies six major factors related to the organization and two major factors related to the environment. This paper ranks all categories and factors in a local and a global evaluation using multi-factor analysis. The Analytic hierarchy process (AHP) technique (Saaty, 1980) is used to quantify the importance of each of the CSFs in relation to each other. In addition this paper analyses the outcomes of the questionnaire to calculate factors' weights of these elements with respect to the experts' perceptions in the Iranian energy industry as one of the biggest industries in Iran.

The paper is structured as follow. The first section presents a general overview of critical success factor for KM extending (Sedighi & Zand, 2012), followed by descriptions of each of the factors and the relations between them. The next section ranks these critical success factors with the AHP approach for the Iranian energy industry and the study completes with a discussion of the results and suggestions for future research.