

## Investigating the Key Success Factors of Knowledge Management Systems in Public Sector: A Case Study from Dubai

Mohamed Noureldin A. Abdelhakim<sup>1</sup>  
[mohamed.abdelhakim@tud.ac.ae](mailto:mohamed.abdelhakim@tud.ac.ae)

Khaled A. Sabry<sup>2</sup>  
[Khal\\_sabry@yahoo.co.uk](mailto:Khal_sabry@yahoo.co.uk)

Marwan Mohamed Abdeldayem<sup>3</sup>  
[marwan.abdeldayem@asu.edu.bh](mailto:marwan.abdeldayem@asu.edu.bh)

Saeed Hameed Aldulaimi<sup>4</sup>  
[saeed.aldulaimi@asu.edu.bh](mailto:saeed.aldulaimi@asu.edu.bh)

### Abstract

*Modern organizations need to use Knowledge Management Systems (KMS) to achieve their strategic goals. The successful implementation of KMS requires the identification of key success factors. Building a competitive knowledge-based economy is one of the most fundamental goals outlined in the UAE vision 2021. Knowledge Management Systems in Dubai Electricity and Water Authority (DEWA) has been selected as a case study. DEWA is a public-sector company provides electricity and water services to its customers across Dubai. DEWA incorporated KMS into its practices in 2009, aiming at becoming a sustainable learning organization. It has realized the great benefits of implementing knowledge management as it has served as an effective enabler for knowledge identification, storing, sharing, capturing and utilization throughout the organization. This study concentrated on essential success factors behind effective KMS practices. Questionnaire was used for data collection. The findings showed that KMS in DEWA are successful because of internal and external factors. Internal success factors are: leadership and top management support, effective Information and Communication Technology (ICT), employees, culture, organizational structure and processes. The main external environment success factor is the government support for smart government projects; smart city projects; Knowledge Economy pillars such as ICT, education and training, Economic Incentive & Institutional Regime, and Innovation Systems. It is recommended to provide more training, awareness, innovative projects and research to sustain the progress and development in DEWA.*

**Keywords:** Knowledge Management, Knowledge Management System, Key Success Factors, Dubai

<sup>1</sup> Adjunct Professor of Business and Informatics, Canadian University Dubai, UAE

<sup>2</sup> Education Training Interactive, Dubai, UAE

<sup>3, 4</sup> College of Administrative Sciences, Applied Science University (ASU), Kingdom of Bahrain.

## **Introduction**

### **1.1 Background Information**

According to (Burgin, 2010), information is the key to management, research and development and it is of primary interest in modern business. Any organization can be considered as an information processing engine. Information management then became critically important to organizations since the result of their work depends on information management to a great extent (Abdeldayem et al., 2021); (Burgin, 2010).

An organization's knowledge asset has been perceived as a fundamental source of its wealth and success in the current globalizing and competitive environment (Riege, 2005); (Bell, 1973); (Nonaka & Takeuchi, 2004). Thus, the field of knowledge management has quickly gained enormous popularity from both the public and private sectors, and a torrent of research projects have been produced especially on how to foster the creation and sharing of knowledge within organizations and how to implement systems that can protect this knowledge from loss in today's workplace that is very mobile and diverse (Nonaka & Takeuchi, 2004). An enormous number of articles on knowledge management have appeared in academic and practitioner journals, and private and public organizations increasingly realize its importance and attempt to implement KM programs and strategies (OECD, 2003). KM success factors can be classified into five principal categories: 1. Culture; 2. Leadership; 3. Structure, Roles, and Responsibilities; 4. Information Technology Infrastructure; and 5. Measurement (Asgari, 2012); (H & M, 2020); (Mohamed, 2021).

### **1.2 Knowledge management in the UAE**

Characterized by the UAE society today the flow of human knowledge and the diversity of intellectual, scientific, cultural and social achievements, and the growing technological innovation and economic ambitions in all of this strengthened relationship between the scientific and technological triumphs and the availability of information systems in the various aspects of human activity and even become the features of this age is determined by the ability of its members the use of knowledge and component intellectual assets and methods of modern technology and the extent of their ability to absorb and use all of the information and knowledge and then become toll knowledge of a society is the force that drives the present and believe in its future, a strong nation is the most knowledge and the richest thinkers and creators who add to the knowledge of all that is new (Aldulaimi & al Alkawi, 2021).

Knowledge management considered to administration, which are based on, that

knowledge is the most important in modern organizations supplier. Knowledge management seeks to raise the knowledge balance by creation of new knowledge, and the fact that the establishment of knowledge can only be done by individuals, it has some believes that knowledge management is a management individual, or close to, or interfere with the management of people.

Most KM initiatives were focused on explicit knowledge, and companies are investing significant resources in building their ICT infrastructure. The study documents the importance of a companywide KM strategy, top management commitment, proactive HRM policies, and a supportive cultural environment as the critical success factors to advance KM practice and theory in UAE (Siddique, 2012).

### **1.3 Purpose of Research**

The purpose of this research is to define the key success factors of Knowledge Management in DEWA for more improvement and to help other companies in the gulf to learn from this case study.

### **1.4 Research Questions**

What are the key success factors of knowledge management in DEWA?

## **2. Literature Review**

### **2.1 Knowledge management**

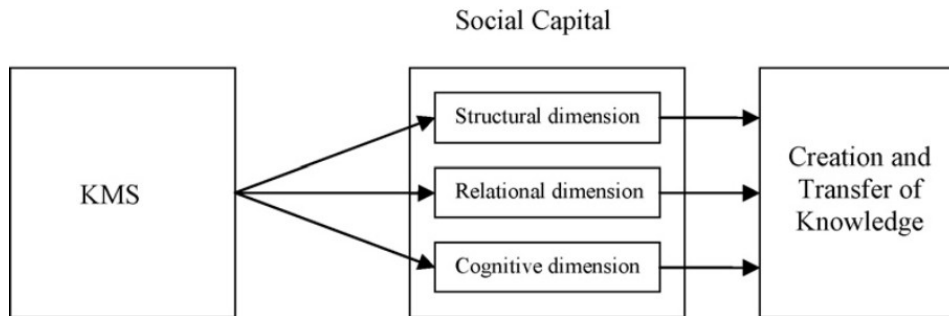
The knowledge management "as the entrance to an integrated system for managing and activating participation in all project assets information, including databases, documents, policies and procedures as well as the experiences of previous experiences carried by personnel" (Hackett, 2003). Knowledge management "as find, store and share information in a useful exercise and insight into the communities and across communities with similar interests and needs." (Rosenberg, 2001). Knowledge management: "as a process by which to find and finding information as a result of a multi-dimensional information of the rankings in many different environments by multiple users." (Levine, 2001). KM defined as "the name given to a group of irregular acts and ranked by the organization can be carried out to get the most value from the knowledge available to them." (Marwick, 2001).

### **2.2 Knowledge Management Systems (KMS)**

According to (Cerchione & Esposito, 2017) on the other hand, a KMS can be divided in two categories, these are KM-practices and KM- tools, which divides the specific IT-based system from the methods and techniques. SMEs tend to use traditional KM-Tools compared to new more efficient ones, which could reflect on the information and communication technologies (ICTs) fast development and

technological changes (Al-Sanjary & Khalifa, 2021); (Aldulaimi & Abdeldayem, 2020); (Cerchione & Esposito, 2017).

Sherif, Hoffman and Thomas (2006) created a model out of hypotheses saying that KMS positively will impact an organization's social capital and that the social capital then will improve the organization's ability in knowledge creation and transfer. The study resulted in all hypotheses approved and a connection between KMS, social capital, knowledge creation and transfer.



**Figure 1.** KMS, Social Capital, and creation and transfer of knowledge. (Sherif et al., 2006)

### **2.3 Knowledge management strategy**

Formulating knowledge management strategy help the organization to understand the flow of knowledge within them, and the benefits that will benefit from implementing knowledge management and critical success factors that will enable the successful implementation as well as what components or approach must focus on. However, due to the fact that the concept of knowledge management is a new, came the different strategies and methodologies for implementation of the exit, with each depending on different situations and factors and components.

One of this methodology is the methodology of knowledge management critical processes (KMCP) from the works of (Barcelo-Valenzuela et al., 2008) which depends on the core business processes within the organization and knowledge related to the formulation of the knowledge management strategy. The amount of information received from these very big ways, given that all documents, evidence, and processes had to be collected, reviewed and stored in the information technology system. This information, in addition to giving the values and weights of operations and using complex mathematical equations may prove that there is a lot of work to knowledge management team, regardless of whether the method used in a small or large organization (Chaho & Aswad, 2021)

Proven way to be successful in comparison with the results of the questionnaire both resulted in the same results as the formulation of a strategy based on the same basic processes that need to be focused on. However, this method was highly

dependent on KM capable team, a team very supportive administration, and therefore, this methodology may not be useful to organizations that newly implemented knowledge management.

Another approach (Smith et al., 2006) formulation of knowledge management strategy based on the actions driven knowledge in the organization. Speaking way about converting knowledge into action, and put knowledge to work. Thus, the practical use of knowledge referred to in the previous chapter is the focus of the search, because it is the place where the organization to apply what is known in its actions, and ultimately where the procedures are created knowledge-driven. Since the creation of knowledge and the work comes from the final stage of knowledge management, and will be a way for organizations that have already implemented a knowledge management be helpful. This reinforces the fact that the authors of the research methodology used to focus on companies that have already implemented a knowledge management group, and they were sharing stories of success and failure.

To apply the new knowledge management and organizations, and perhaps should focus on explaining the other components in the first quarter. In their article in Harvard business review (Hansen et al., 1999) described the notation (technology-based) and customization (people based) the methods used in the formulation of knowledge management strategy based on competitive strategy of the organization. The article stressed that organizations should focus on one type of strategy full of knowledge management to take advantage. Although the use of data and evidence of a huge consulting firms, explained methods cannot be used for the public sector or the government because of its focus on customers, products and profits.

The particular importance of leadership, identifying KM roles and responsibilities, performance measures, and coordination mechanisms to integrate other functions and to promote KM aspects in the organization. The Department of Human Resources Development (the DHRD) should be reporting to a KM governance committee at the top management level rather than a single leadership position. A KM committee, comprising executive directors, department heads, Knowledge Champions (K-Champions) to lead the entire strategy planning helps in successful KM strategy implementation (Gebba, 2013). A significant challenge in the implementation successfully of KM is a set of design principles to guide the development of a core KM tool for KMS (H & M, 2019); (Butler & Murphy, 2007).

#### **2.4 The tacit knowledge**

Represents the knowledge base for the rest of knowledge as it is the source of any other knowledge and without them cannot move or generate any knowledge, and can be expressed in the skills and practices of individual and group of her portrayal

in the tasks assigned to individuals and is the most difficult in terms of stability and reliability because they represent the rules of thinking orderly and intuition and the ability to govern and this what prevents coded or delivery to others easily.

The tacit knowledge consists of with (Wiig, 1993):

Facts, fixed data, and mental patterns.

Views, shapes, images and concepts.

Judgments and expectations, assumptions and beliefs.

Thinking Strategies

With (Nonaka & Takeuchi, 2004) (know-how) is characterized as difficulty of it as well as a very personal knowledge of hard-formed based on that it becomes transferred to others and involve them difficult, consists knowledge dimension of tacit knowledge of: beliefs, perception, ideals, values, emotions, mental models, all of which are rooted in the people and take them for granted it, and this dimension is a way they understand the world as there are still technical knowledge implicit consists of skills and versatility.

## **2.5 The Explicit knowledge**

Is the knowledge that can be delivered and communicated to others formally or programmer through modern or traditional learning educational processes. refers to (Nonaka & Takeuchi, 2004) in their study where explicit knowledge is knowledge of the organization Limited content which is characterized by external appearances have expressed in painting, writing, speaking and offer technical converted and transmitted. Based on that, could classification shows that tacit knowledge concerned with everything related to the humanitarian aspect transparencies of experience and intuition, thinking and skills as it is inseparable from individuals in the context of personal organization and is the first form of the creation of any new knowledge, but knowledge explicit represent the steel side of the knowledge as they take the form of rules and procedures specific to perform work efficiently and the ability and experience in performing work of the institution, compared to competitors (Abdelhakim & Abdeldayem, 2009).

## **3. Research Methodology**

### **3.1 Case study**

Using the case research method allows for in-depth investigation and rich description, particularly with adopting a single case research methodology. On the other hand, the case research method allows for in-depth investigation and rich description, particularly with adopting a single case research methodology. The nature of the research is descriptive so the researcher tried to describe a problem on the practice, diagnosis, and through a survey and analysis of the views of relevant staff about the research, the researcher used the descriptive and analytical

approach supported in the collection of the information and necessary data from the books of knowledge and literature, and scientific journals, university letters, dictionaries and glossaries in Arabic and English keywords and some of the documents issued by the DEWA and also the views of staff about the research.

### 3.2 Sample

Sample of 150 Employees were selected from different department and managerial levels. 100 valid questionnaires were received.

### 3.3 Research tools:

The researcher using a set of tools like Literature Review as secondary date and the questionnaire as primary date, and then evaluate and analyze the Knowledge Management practices in DEWA.

## 4. Data Collection and Analysis

### 4.1 Data Collection

The researchers collected the data from Literature Review as secondary date and the questionnaire as primary date, and then evaluate and analyze the Knowledge Management practices in DEWA.

### 4.2 Data Analysis

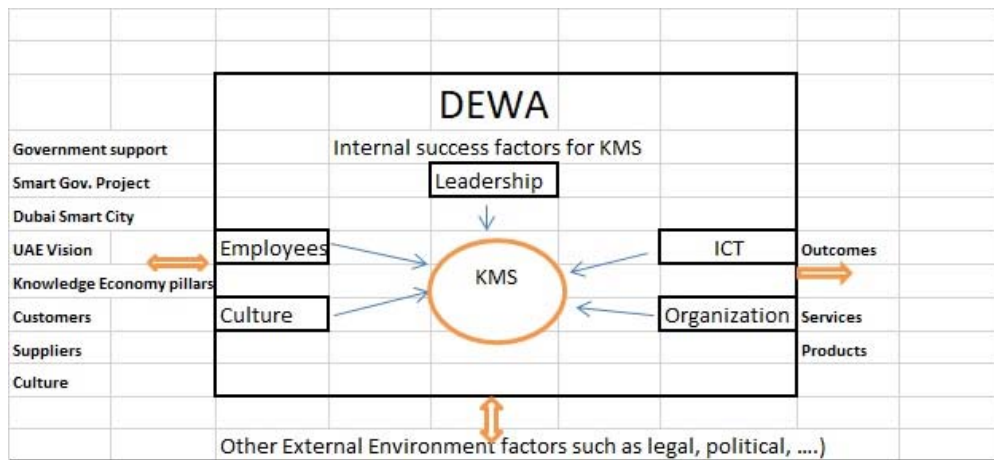
The following results are the Key success factors from the collected data.

No	Key success factors	Agree & Strongly agree %
1	Leadership and top management support	92%
2	Government support for smart government and knowledge economy projects	85%
3	Successful implementation of ERP system supports the success of KMS	83%
4	Active corporate governance systems	80%
5	Successful IT governance system	78%
6	Effective Information and Communication Technology systems	72%
7	Organizational culture that support KM activates and processes	68%
8	Employees competencies and awareness about IT	64%

9	Organizational units responsible of knowledge management	56%
10	Availability of an updated data, information and knowledge	52%
11	KM department is effective and efficient that help to improve decision making	52%
12	Exchanges data, information required easily.	44%
13	Availability of training programs	32%

**Table (1) The Key success factors**

### 5. Proposed model for KMS key success factors in DEWA



**Figure 2: Key success factors for KMS in DEWA**

### 6. Conclusion

This study concentrated on essential success factors behind effective KMS practices. Questionnaire was used for data collection. The findings showed that KMS in DEWA are successful because of internal and external factors. Internal success factors are: leadership and top management support, effective Information and Communication Technology (ICT), employees, culture, organizational structure and processes. The main external environment success factor is the government support for smart government projects; smart city projects; Knowledge Economy pillars such as ICT, education and training, Economic Incentive & Institutional Regime, and Innovation Systems. It is recommended to provide more training, awareness, innovative projects and research to sustain the progress and development in DEWA. Using the case research method allows for in-depth investigation and rich description, particularly with adopting a single case

research methodology. The case research method allows for in-depth investigation and rich description, particularly with adopting a single case research methodology.

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