The Effect of Knowledge Management Processes on Organizations Performance

Vplyv procesov riadenia znalostí na výkonnosť organizácií

Saqer SULAIMAN[1]

[1]*University of Public Service - Budapest*

Abstract:

With time, organizations are becoming more interested in managing knowledge processes. Since the beginning of the millennium, knowledge management has become the main concern of contemporary organizations. Due to its implications on efficiency and effectiveness, knowledge management is seen as an essential part of organizational reform and institutional building. Indeed, knowledge management has begun to attract more attention in light of the great challenges that organizations may face, and the steady increase in the importance of goals that knowledge management focuses on achieving to enhance productivity levels. This paper reviews knowledge management and its processes including creation, storage, sharing, application, and knowledge learning. Moreover, this article comes as an attempt to study this vital topic and to pay more attention to knowledge processes and their application as an effective management approach in contemporary organizations. This article aims to achieve three main objectives which are to present a clear view of knowledge management and its various processes that must be integrated in order to improve the performance and productivity of the organizations. The second objective is to identify the challenges that organizations may face in their approach to knowledge management. Third, coming up with a set of recommendations to improve knowledge management in contemporary organizations is another purpose of this article.

Keywords: *Knowledge management, Knowledge management processes, contemporary organizations, performance.*

Abstrakt:

Postupom času sa organizácie čoraz viac zaujímajú o riadenie procesov znalostí. Od začiatku milénia sa riadenie znalostí stalo hlavným záujmom súčasných organizácií. Vďaka svojim

dôsledkom na efektívnosť sa riadenie znalostí považuje za základnú súčasť organizačnej reformy a budovania inštitúcií. Riadenie znalostí začalo priťahovať čoraz viac pozornosti z hľadiska veľkých výziev, ktorým čelia organizácie, a neustáleho zvyšovania dôležitosti cieľov, pri ktorých sa riadenie znalostí zameriava na dosiahnutie zvýšenia úrovne produktivity. Tento článok hodnotí riadenie znalostí a ich procesov a je pokusom o štúdium tejto dôležitej témy a venovanie väčšej pozornosti znalostným procesom a ich aplikácii ako efektívny prístup manažmentu v súčasných organizáciách. Cieľom tohto článku je dosiahnuť tri hlavné ciele. Prvým z nich je predstaviť jasný pohľad na riadenie znalostí a jeho rôzne procesy, ktoré je potrebné integrovať, aby sa zlepšil výkon a produktivita organizácií. Druhým cieľom je identifikovať výzvy, ktorým môžu organizácie čeliť v prístupe k riadeniu znalostí. Tretím cieľom tohto článku je prísť so súborom odporúčaní na zlepšenie riadenia znalostí v súčasných organizáciách.

Kľúčové slová: *manažment znalostí, procesy riadenia znalostí, súčasné organizácie, výkonnosť.*

Introduction

Knowledge is an essential resource for contemporary organizations. Correct and precise management of knowledge improves the decision impacts. Moreover, knowledge has become one of the most important sources of competitive advantage for organizations in many industries. [28], [4], [31], [45]. Generally speaking, there is a direct relationship between the ability of the organization to generate, maintain, retrieve, and share knowledge, and its performance. No doubt that Knowledge enhances the predictability and capacity of an organization, and it "powers the ability of professionals to be their best and to deliver valuable service to customers". [46].

Researchers approached the concept of knowledge from different perspectives. The economic approach depicts knowledge as a limited resource that should be utilized. According to this approach, knowledge has become the key economic resource, not individuals, it is even the only source of comparative advantage and it is basically different from the traditional resources of the organization as it can be transformed into intangible assets information, skills, and intellectual capital. In contrast, Rowley places more emphasis on the social perspective of knowledge and he argues that "knowledge is a social and continuous process that is shaped by learning". [36]. On the same note, a definition by ESCWA relates rationality in decision-making to knowledge, and it defined knowledge as "information used to make better decisions, which lead to rational actions. [44]. Furthermore, Servin and De Brun offer a broad meaning of knowledge and they state "Knowledge is derived from information but it is richer and more meaningful than information. It includes familiarity, awareness, and understanding gained through experience or study, and results from making comparisons, and identifying consequences". [39]. Knowledge management is one of the four core issues that the UNDP utilizes to measure capacity development; it represents capacity constraints we see most commonly encountered across a variety of situations. [43]. In the same context, knowledge can be "distinguished from the traditional factors of production in that it is governed by what has been described as the law of increasing returns". [22]. Every additional unit of knowledge used effectively results in a marginal increase in performance.

1. Knowledge Management

By the early 1990s, a growing body of academics and consultants were talking about knowledge management as the new business practice, and it began to appear in more and more business journals and on conference agendas. [39]. According to Alavi, & Leidner, the knowledge management approach is "the conscious integration of processes and practices embedded in individuals, as well as in groups and physical structures. Thus, knowledge management is not a discrete, independent, and monolithic organizational phenomenon". [2]. Along these lines, Birkinshaw, states that "knowledge management is more concerned with techniques for building up and applying stocks of knowledge". [7].

The goals of knowledge management are the leveraging and improvement of the organization's knowledge assets to effectuate better knowledge practices, improved organizational behaviours, better decisions, and improved organizational performance. [20]. Meanwhile, Hubert and Lopez identified the on-going role of knowledge management as being the one to develop an environment where people freely create, share, and use information and knowledge; work together toward a common purpose, and are supported and rewarded for doing so. [18].

In general, there are two broad approaches to knowledge management, hard aspect, and soft aspect. [13]. The hard aspect of knowledge management focuses on information technologies that improve the communication and the quality of the decision made and enable knowledge management activities within the organization, [42], while the soft aspect views knowledge as a process composed of a complex set of dynamic skills and know-how that is constantly evolving and changing. [13]. In line with that, Kaps proposed a knowledge management framework; the major components in this framework are people, processes, systems, and culture. [19]. Although IT systems are a minor part in this framework; it can support implementing holistic solutions. (See Figure 1).
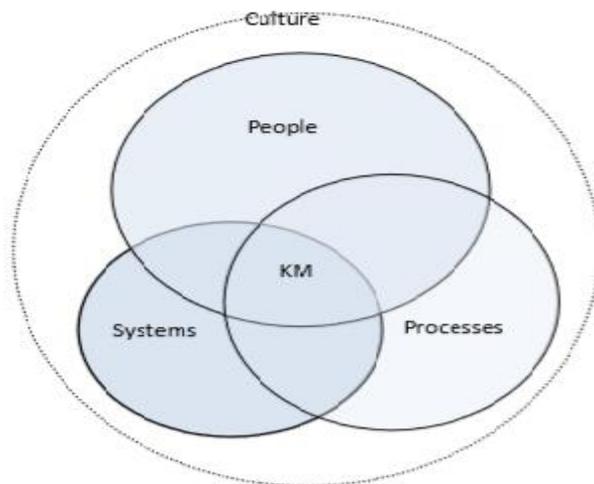

Fig. I Knowledge Management Framework. [19].

As the figure above shows, knowledge management is influenced mainly by four key factors: an individual factor that relates to the level of awareness, process efficiency, organizational culture, and system readiness to assimilate new technologies and ideas. Individuals are the main components of knowledge management, without which action cannot be made, as individuals are the basis by which an organization can transform individual knowledge into a collective one. Organizational culture is a set of ideas, values, customs, symbols, traditions, and ways of thinking shared by all members of an organization. In this view, organizational culture provides the identity of the organization and affects the behaviors of the individuals, and controls their experiences, which in turn affect the productivity and efficiency of the organization. Interestingly, the culture of the organization affects individuals' perception of knowledge and their willingness to engage in the acquisition and sharing of it. However, system and technology in coordination with human resources, contribute to managing, acquiring, disseminating, and maintaining knowledge. In addition, computer hardware and software contribute to documenting decision support and processing systems and facilitate processes related to knowledge management, such as generation and storage. Undoubtedly, processes are having an important role in knowledge management. Through which new practices are developed to achieve interdependence between individuals working in groups. Furthermore, processes imply developing programs to enhance knowledge exchange, monitoring the implementation of these programs, measuring results, reducing costs, and increasing the speed of response. Given the importance of processes' role in knowledge management, it will be discussed in more detail.

2. Knowledge Management Processes

Contemporary governments and organizations started to pay more attention to knowledge management processes as their impact can be identified inside and outside organizations. Raguž, et al., argues that "The knowledge capital is not just within the boundaries of the company, but it goes further and passes on to customers, suppliers, partners, and other stakeholders". [32]. Knowledge management processes as the main drivers of knowledge must be in place in order to facilitate and organize the assimilation of knowledge into the organization. Knowledge management processes include knowledge acquisition, creation, storage, transfer, and sharing. These continuous and integrative processes "enable the people within an organization to share what they know, leading to improved services and outcomes". [6]. The integration of knowledge processes is dependent upon three aspects: efficiency of integration, scope of integration, and flexibility of integration. [14]. The following is a summary of these processes:

2.1. Knowledge Creation

It is an essential component of knowledge management processes in organizations and can be achieved through the participation of individuals in identifying problems and finding innovative solutions. To answer the question, how is knowledge discovered. Fernandez & Sebherwal proposed two significant ways: synthesis of new knowledge through socialization with other knowledgeable persons; and discovery by finding interesting patterns in observations, typically embedded in

explicit data. [11]. According to Nonaka, there are four modes of knowledge creation: socialization, externalization, internalization, and combination. [28]. It is not easy to identify these sub-divisions in independent phases while they are moving among people and organizations. "The four knowledge creation modes are not pure, but highly interdependent and intertwined. That is, each mode relies on, contributes to, and benefits from other modes". [2].

It is worth mentioning that, the organization cannot generate knowledge without individuals. The organizational knowledge creation focuses on expanding the knowledge that is generated by individuals and then shares it at the collective level through dialogue, conversation, and communities of practices. Indeed, knowledge creation leads to its expansion through two sets of dynamics: Transformation of tacit knowledge into explicit knowledge and Transform knowledge from the individual level to the collective level. [27]. However, Quinn et al., presented four principles for knowledge creation; enhancing individuals' abilities to solve problems, overcoming individual reluctance to share knowledge, encouraging intellectual diversity within organizations, a transition from hierarchical structures to network organizations. [30].

2.2. *Knowledge Storage*

It includes keeping, maintenance, searching, access, retrieval of data, and information. Knowledge is embedded in the three basic elements of organizations, the human components of organizations, Tools, including both hardware and software; Tasks reflect the organization's goals, intentions, and purposes. [4]. Moreover, knowledge storage represents organizational memory. Organizational memory extends beyond the individual's memory to include other components such as organizational culture, production processes and work procedures, formal organizational roles, physical work setting, and information archives. [2] The process of storing knowledge indicates the importance of organizational memory, as organizations face great risk as a result of losing a lot of the knowledge that individuals carry when they leave these organizations. Obviously, knowledge retention has become very important, especially for organizations that suffer from high rates of work turnover.

2.3. *Knowledge Sharing*

Knowledge sharing (KS) and knowledge transfer (KT) are two different-terms that are sometimes used interchangeably. Actually "many authors and researchers have failed to provide a clear-cut definition for knowledge sharing and, at times, it has been discussed together with the term "knowledge transfer". [21]. Nevertheless, "there is one common dividing line between KT and KS is related to the levels of analysis, in that KS is used more frequently by authors focusing on the individual level, while KT is used more frequently when groups, departments, organizations or even businesses are in focus". [29]. Knowledge sharing refers to "the provision of task information and know-how to help others and to collaborate with others to solve problems, develop ideas, or implement policies or procedures". [38]. Similarly, Paulin and Sunesson argue that knowledge is "The exchange of knowledge between and among individuals, and within and among teams, organizational units, and organizations. This exchange may be focused or unfocused, but it usually does not have a clear a prior objective". [29].

Knowledge sharing has attracted the attention of researchers and organizations in recent years. The commercial success and competitive advantage of companies seem to lay increasingly in the application of knowledge and location of those parts of the organization where knowledge sharing practices can assist in optimizing business goals. [34]. The knowledge network is a powerful driver for knowledge sharing between the members of an organization. [17]. The sharing of practices is often one of the first things to be carried out in a knowledge management initiative. The essence of identifying and sharing best practices is to learn from others and to re-use knowledge. [39]. It is also unsurprising to note that sharing knowledge among teams and working groups leads to the transformation from individual to collective action. Meanwhile, ESCWA emphasized the role of knowledge sharing and it stated "Knowledge sharing is essential to innovation. Innovation is not only impossible without knowledge sharing but, moreover, every innovation is powered by knowledge". [44].

In a knowledge-sharing system, knowledge owners want to share their knowledge with a controllable and trusted group; decide when to share and the conditions for sharing; and seek a fair exchange or rewards for sharing their knowledge. [11]. However, Ramalingam proposed a set of essential tools for collaboration and sharing knowledge including work teams, communities of practice, peer assists, challenge sessions, after-action reviews and retrospect, internet strategies, email guidelines. [33]. Actually, knowledge sharing affects significantly the capacities of both individuals and organizations. When knowledge is effectively circulated throughout the organization, individuals gain access to valuable resources and important strategic ideas rather than just knowledge retention, and this ultimately guides organizations to make decisions with impact.

2.4. Knowledge Application

The main goal of knowledge management is to apply and use knowledge in the organization. Gain knowledge is not enough; an organization must also seek to "effectively apply the existing knowledge to create new knowledge', taking action based on its knowledge-based assets". [2]. Knowledge application leads to the transfer of knowledge to the operational processes which would contribute directly or indirectly to enhancing organizational decision-making and performance. Often, organizations that use knowledge efficiently increase their competitive advantage. Grant identifies three primary mechanisms for integrating specialized knowledge rules and directives, organizational routines, self-contained task and decision-making, and time-patterned sequence activities. [15]. Broadly speaking, the formation of knowledge in organizations is a continuous and on-going process. Researchers underscore that Knowledge becomes useless unless it operates by knowledge management processes. The optimum uses of these processes have a significant positive effect on organizational performance and also lead to evidence-based decisions and better use of resources.

3. Knowledge Learning

The relationship between organizational performance and organizational learning is quite straightforward. Generally speaking, learning is defined as "any relatively permanent change in behaviour that occurs as a result of experience". [35]. However,

for successful knowledge creation to occur, organizations should develop a deeply ingrained learning culture and have education, training, and mentoring programs available to encourage learning. [13]. To conceptualize the relationship between knowledge management and organizational learning, King argues that "Organizational learning is one of the important ways in which the organization can sustainably improve its utilization of knowledge". [20].

However, organizational learning is not limited to individuals. [12]. Indeed, it encompasses two basic learning forms, individual and organizational learning [9]. These two levels of learning in organizations are interacting together in a non-separate manner. The two-way process enables individuals to learn organizational norms, culture, and systems on the one hand, and the culture of the organization adapts to individual ideas and values on the other hand. It is also worth mention that an Individual's learning is an interacting process that implies various kinds of outcomes that include changes in organizational culture and an individual's values and behaviour. As stated by Easterby-Smith, and Lyles all learning outcomes can then, by way of individuals interacting on behave of an organization, be crystallized in organizational routines and values and become organizational learning. [8]. Along with this line, Marquardt proposed three interrelated levels of learning in organizations:

> "Individual learning refers to changes in skills, insights, knowledge, attitudes, and values acquired through self-study, technology-based, and observation. Group or team learning covers the increase in knowledge, skills, and competencies accomplished by and within groups. And organizational learning represents the enhanced intellectual and productive capability gained through a commitment to and opportunities for continuous improvement across the organization". [23].

This socialization mechanism in organizations facilitates the creation of shared mental models since they enable individuals to share their experiences and form common understanding and interpretations of the knowledge they possess. [26]. Meanwhile, some linked knowledge management and learning to "humanitarian and environmental crises which, puts organizations under pressure to share know-how quickly and effectively, so that the latest scientific research findings, as well as lessons derived from previous projects, are readily available". [10]. According to Marquardt, learning is not possible nor can it be sustained without understanding and developing five interrelated subsystems. These subsystems are learning, organization; people, knowledge, and technology. [23]. See Figure 2.
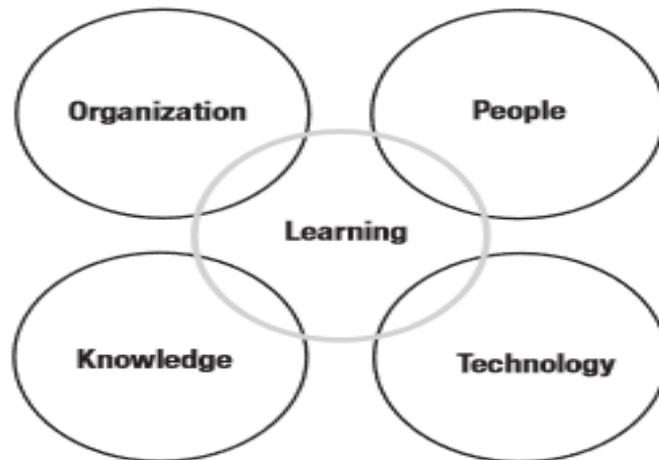
Fig. 2 Systems learning organizational model. [23].

As the figure above shows, these five subsystems are connected to each other and work in a complementary manner, where any disorder in one of them will affect the others significantly. Considering all these different perspectives on knowledge learning and its subsystems and levels indicate the importance of learning for the organizations to improve their performance and solve potential problems. This is crucial in such a globalized world where people's expectations are growing and competition becomes the main prevail attribute.

4. Knowledge management challenges in organizations

Although the shift to knowledge management helped contemporary organizations access a new resource which is knowledge, it created more challenges for these organizations. To precisely define these challenges, reference must be made to the types of knowledge, especially explicit knowledge and tacit knowledge. A clear distinction between the various types of knowledge is important in order to identify the role that each plays in the effectiveness of the institution and to identify the challenges resulting from its absence. Knowledge has been classified in many and different ways. According to Turban et al, there are two levels of knowledge shallow knowledge and deep knowledge and he explained them as: "shallow knowledge is the representative of surface-level information that can be used to deal with a very specific situation. While deep knowledge is the internal and casual structure of a system and involves the interactions between the system's components". [42].

Certainly, strategy formulation, problem-solving and decision making should be based on deep knowledge. Alavi and Leidner classified knowledge as tacit, explicit, individual, social, declarative, procedural, casual, conditional, relational, pragmatic. [2]. Although "there are many taxonomies that specify various kinds of knowledge, the most fundamental distinction is between tacit and explicit knowledge". [20]. The distinction between explicit and tacit knowledge is vital because it enables analysts to posit several different adaptation mechanisms with different characteristics or kinds of knowledge and learning. [40]. Tacit knowledge represents the knowledge that cannot

be written down, exists in people's heads, and is extremely difficult to transfer. [46]. While, explicit knowledge exists in the form of words, sentences, documents, organized data, computer programs, reports, written instructions, and in other explicit forms. [20]. Both types of knowledge are essential to the evolution of organizations and both contribute to the realization of organizational goals. However, tacit knowledge has the upper hand and offers more opportunities and significant advantages. There are three levels of knowledge management challenges. Explicit knowledge management challenges, tacit knowledge management challenges, and Challenges at the individual level. The main challenge for explicit knowledge management is the tendency to minimal knowledge and poor documentation. Generally speaking, explicit knowledge should be subject to a knowledge management process including; creating, distributing, and retrieving. Undoubtedly, neglecting this is deficient in the performance of organizations. Although tacit knowledge is more valuable than explicit knowledge, it is more likely to be lost. While disseminate and access to explicit knowledge is an easy process, seemingly convey and transfer tacit knowledge consider one of the serious challenges in contemporary organizations. Actually, tacit knowledge leakage is the main challenge facing contemporary organizations as Knowledge may lose because of staff turnover, retirement, or work termination. For example, "70% of the employees in the sales department of some Fortune 100 Corporations in the information technology industry have left in the year 2000, leaving a knowledge vacuum of stunning proportions that their successors are struggling to fill. [5].

Although, "knowledge-based capabilities are keys to organizational success", [3] knowledge can never be completely stored and separated from the individuals who actually own it [32]. Evidently, "The successes of knowledge management cannot be achieved only by new technology, but also the awareness and participation of human resources". [1]. Sometimes, the shortage and inefficiency of human capital may obstruct knowledge management processes. Nevertheless, Knowledge still remains a difficult thing to manage. It does not do well in captivity and it does not survive for long outside its native habitat and, in addition, the lifespan of knowledge ranges from mere seconds to eons. [37]. Meanwhile, Szulanski main focus was knowledge sharing and he identifies several factors that influence knowledge sharing, namely: "causal ambiguity, unproven record of knowledge, lack of motivation, lack of absorptive capacity of a receiver, weak intimacy and relationship between source unit and a recipient unit". [41]. However, Riege divided knowledge sharing challenges into three categories: personal, organizational, and technological, and he argues:

> *"At an individual or employee level, knowledge-sharing barriers are often related to factors such as lacking communication skills and social networks, differences in national culture, overemphasis of position statuses, and a lack of time and trust. At an organizational level, barriers tend to be linked to, for instance, the economic viability, lack of infrastructure and resources, the accessibility of formal and informal meeting spaces, and the physical environment. At a technology level, barriers seem to correlate with factors such as the unwillingness to use applications due to a mismatch with need requirements, unrealistic expectations of IS/IT systems, and difficulties in building, integrating, and modifying technology-based systems". [34].*

The literature on knowledge management shows several challenges facing contemporary organizations in knowledge management. Although the technological challenges are crucial the researchers place more weight on organizational and individual challenges. For example, Goh et al., addressee knowledge management challenges from a Malaysian point of view, and the result of their study underscore the significance of cultural factors in facilitating or inhibiting knowledge management and transfer. [13]. This result is consistent with the argument of Kaps that "cultural barriers in knowledge sharing can be seen in three main areas, individuals, processes, systems". [19]. Meanwhile, some literature focused on organizational, individual, and technological factors as knowledge transfer challenges. [25], [34]. It is also important to note that the technological and informational revolution depends on advanced knowledge produced by creative minds and the optimal use of capabilities. However, if the organization adheres to the traditional methods and patterns in management, this will definitely lead to more difficulties in creating, sharing, and retrieving knowledge inside and outside the organization.

5. Recommendation for developing knowledge management processes

To overcome knowledge sharing barriers Martinez claimed that trust among employees has a strong impact on knowledge-sharing behaviours, People who have a sense of self-efficacy and who believe in their abilities to help solve job-related problems are more likely to share what they know. [24]. However, Grant argues that "the focus upon knowledge application and disregarded for knowledge creation is a more serious limitation for knowledge management". [15]. Furthermore, he called for a comprehensive knowledge-based theory of organizations that embed all types of knowledge. Meanwhile, Herrmann identifies five knowledge management barriers technology, content, routine and procedures, organization, and personal and he identifies solutions and new methods to overcome these barriers. [16]. To approach barriers in technology he suggested cheap software and teaching lessons. To approach barriers in the content he suggested audio files or video files, while to approach procedures barriers he suggested departmental meetings and working plan. Also, to approach organizational barriers he proposed informal chats to receive strategic information about the organization. Last but not least, he suggested training sessions, discussion rounds, presentations, and incentives as the best solutions for dealing with personal challenges and barriers. Furthermore, the author would like to highlight the following recommendations too:

- Transforming individual work into collective action by encouraging teamwork. And the formation of task forces to solve problems and ensure the share of knowledge among the employees of the organization. Additionally, motivating workers towards developing and participating in the collective vision, and providing opportunities for individuals to participate in dialogue, research, and discussion is another key point in creating a unified vision and sustainable institutions.
- Documentation is the safest way to preserve an organization's knowledge. Furthermore, it is important to transform personal knowledge into professional knowledge in the form of documents and procedures manual.
- Encouraging learning, which increases the number of people familiar with the company's knowledge assets. It also reduces the risk of knowledge loss due to job leaving by highly skilled workers, as there are people ready to replace them. It is

also important to note that having systems in place for understanding, disseminating, and sharing learning is essential. Besides, identifying and empowering leaders who support learning at the individual, group, and institutional levels.

- Focusing on information technology and social media for the purpose of creating, sharing, and disseminating knowledge in the various departments of the organization. It is also important to encourage employees to engage in communities of practice in order to share and develop knowledge.

Conclusion

There is no doubt that knowledge is a major resource in contemporary organizations in both the public and private sectors. As there are fundamental shifts in the status of wealth and the value of resources from being material and financial to being made up of knowledge and intellectual capital. The adoption of knowledge management and the application of its various processes constitute an evolution in the performance of organizations. Additionally, it enhances the organization's ability to make optimal use of resources and take advantage of available opportunities.

There is a clear discrepancy between the various institutions in the extent of their use of knowledge management. While private sector organizations and NGOs are observed to use knowledge management processes to a large extent, government institutions and agencies are less likely to use these processes, especially in developing countries. There is a direct relationship between an organization's practice of knowledge management and its effectiveness. Organizations that practice knowledge management processes are more effective than other organizations that do not use them. Given the recentness of the field of knowledge management, it faces a number of challenges. These challenges include, but are not limited to, resource challenges where many knowledge management efforts fail due to the allocation of insufficient human and material resources. This makes the results achieved below expectations. One of the main challenges that governmental and private organizations face in knowledge management in developing countries is the ambiguity of the concept of knowledge management for the majority of employees. Also, convincing employees of the need to share knowledge remains an indispensable matter in contemporary organizations. Nevertheless, accurate strategies and follow-up are essential to overcome this challenge. It is important to mention that, the challenges that organizations may face regarding knowledge are numerous, adopting knowledge management enhances their capabilities and provides them with more opportunities. Finally, it is interesting to note that, looking for knowledge should be one of our main goals in life, as knowledge is a basic requirement in the administrative process. As a matter of fact, one cannot isolate himself from his/ her surrounding environment, thus, knowledge should be part of the organization and society. The most important thing the employees, students, and others should know is how to develop about things, work, and how they can be improved through knowledge. If you develop such curiosity and start to ask such questions, this certainly leads to individual, organizational, and societal improvements.

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Author:

Saqer SULAIMAN – University of Public Service, Budapest, Hungary. E-mail: saqersul@yahoo.com