Toward Investigating the Requirements of Knowledge Management in the Arab Cities: Case Study of the Dubai City

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Abstract: Knowledge management is the process of capitalising on human skills, expertise and relationships in a systematic manner. It is focused on presenting potential useful information to individuals and facilitating information, as well as organising access to and retrieval of knowledge content. The main objective of this research is to tackle the application of knowledge management requirements in Arab cities, taking the case study of the city of Dubai as its focus. The means through which data are collected is secondary research, aiding in addressing the research problem: How do Arab cities, in particular view of Dubai, apply the requirements of knowledge management? The applied requirements of knowledge management in the city of Dubai are found out to be the following: a central memory and collective mind of members of the organisation; information technology infrastructure; multi-dimensional organisational structures; dialogue in human community; and shared knowledge space/tacit knowledge.

Key words: KM • Culture • ICT • UAE

INTRODUCTION

This research is about the application of knowledge management requirements in Arab cities, with particular focus on the city of Dubai as a case study. Today’s economy sees knowledge as people, learning, money, leverage, power and competitive advantage and is more relevant to sustained business than what used to be previously valued, such as capital, labour and land. However, knowledge remains to be neglected, which led to the emergence of knowledge management that combines the needed business strategies, processes, technologies, etc. to address the void in organisations [1]. In the past, the economy depended much on raw materials, equipment and physical power. In a knowledge-based organisation, it is through knowledge that the value of a product increases [2].

Arab economies need much work on the features of knowledge economies-the educated and trained entrepreneurs, rather than conformant management leaders. Various rules are adhered to by decision making in the network economy to the implementation down the hierarchy of the strategic judgments of corporate executives. The Middle Eastern model of decision making follows the family diwaniah or majlis, creating a balance between autocratic and consultative stances. Arab countries have a history of hard-acquired expertise in operational adaptation to its European, African and Indian trading partners. Moreover, there is a need to develop additional measures for Arab region and governments must actively leverage their nations’ intellectual wealth. In this regard, collaboration across nations can bring benefits to Arab professionals. The Arab Club for Information and Arab Knowledge Management Society are two organisations that would bring benefits to Arab states commencing knowledge management [2]. Dubai, an emirate of the UAE, is chosen in this research as a case study to explain the application of knowledge management requirements in Arab cities. Knowledge management proves to be a compelling process that organisations aiming to leverage their activities must employ. It is a specific concern of this study to find out if Arab cities already adopt this process or the extent to which they adopt it, in case they do. The research problem that this research shall deal is: How do Arab cities, in particular view of Dubai, apply the requirements of knowledge management? It is therefore important to determine what these requirements are.

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The knowledge-based theory of the firm surmises that the source of competitive advantage lies in knowledge application. Making an attribution of knowledge to an organisation is difficult without producing knowledgeable or competent performance. Tacit knowledge is produced by individuals who also hold it within themselves. The absence of a central memory and a collective mind is considered a major challenge in the application of knowledge in organisations [3]. Hence, it may be concluded in this paper that a requirement for the application of knowledge management is a central memory and collective mind of members of the organisation. In view of this, creating organisational capabilities involves primary mechanisms for knowledge integration. These are directives, organisational routines and task teams as recommended by [3].

Another requirement of the application of knowledge management is technology, as can be seen in its pivotal role in supporting knowledge application by embedding knowledge onto organisational routines. Moreover, institutionalising best practices through their being embedded into IT might lead to efficient facilitation of routine handling and predictable situations involving environments that are either stable or incrementally changing. However, radical and discontinuous change necessitates an unrelenting need to continuously renew the basic premises that set off practices stored in the knowledge repositories. What it indicates is the need for members of the organisation to remain in synch with contextual factors by appropriately modifying the current environment without blindly applying knowledge. Moreover, it is important to use shared meanings and understanding of the nature and needs of a specific situation to steer rule activation. Albeit the application of existing knowledge goes with corresponding challenges, knowledge management can have the positive application of information technology as it can play an important role in integrating organisational knowledge. The enhancement of organisation knowledge integration and its application through IT can be seen in its support to teamwork and collaboration in decision-making. Increased internal networks and amount of organisational memory can enable IT to apply organisational knowledge. IT can also boost the speed of knowledge management application through the codification and automation of organisational routines [3].

**Organisational Structures:** Generally, traditional organisational structures, such as the hierarchy, have been known for their rigidity and for requiring extensive communication processes to enable the free flow of information and knowledge between organisational units. A proposed solution to this problem is the establishment of multi-dimensional organisational structures, which is also called matrix organisation [4]. Specialised structures and roles can also be used in the facilitation of knowledge management through organisational structures. There are three possibilities relating to this: (1) Appointing an individual to the position of Chief Knowledge Officer who is responsible for knowledge management efforts; (2) establishing a separate department for knowledge management; and (3) facilitating knowledge management through traditional knowledge management units – the R and D department and the corporate library [5]. Evidence to the significant effect of IT competency to organisational structure is presented by Lopez, Peon and Ordas [6], favouring the development of more flexible structures. This type of structure is positively related to the firm’s capacity to manage knowledge, thereby assuming a direct relation between IT competency and global knowledge management.

In order to assess the appropriateness of specific design advice for organisations from a knowledge perspective, there is a need to understand the concepts of organisational structure and organisation design, of which the division of labour is considered a key concept underlying them. There is a corresponding need to integrate the tasks involved vis-à-vis the division of labour amongst people and machines. Decisions of organisation design are of two basic categories: either to separate or integrate tasks within production, or either to separate production from control or to join production and control together [7]. Hence, it can be deduced that organisational structure plays a pivotal role in managing knowledge since knowledge management appears to rely in considerable degree on the organisation structure. This can be seen in the fact that the organisation’s hierarchical structure can affect the people and their interaction and the process of transferring knowledge. The flow of data and information is influenced by reporting relationships, including the nature of groups undertaking decisions together, consequently affecting knowledge creation and sharing. By decentralising their organisation structures, companies are able to remove certain organisational layers, leading to the increased size of groups who report to each individual. It must be noted therefore that knowledge sharing tends to occur with a larger group in more decentralised organisations. Further, matrix structures and emphasis on leadership allow the facilitation of greater knowledge sharing alongside cutting traditional department boundaries.
Communities of practice can also be used in the facilitation of knowledge management through organisational structures. A community of practice is a group organised by individuals themselves and is dispersed geographically but communicates regularly to discuss certain issues affecting them [5]. The benefit of conducting communities of practice is that members are able to have access to a larger group of individuals than what can be done by traditional departmental boundaries; thereby increasing the probability of useful knowledge.

**Role of the Existing KM Systems in Organizational Culture:** It is important to note that organisations function as systems of distributed knowledge, which continuously emerge from the actions and interaction of organisational members. Whilst not all knowledge management initiatives involve implementation of information technology (IT), several of them rely on IT as an important enabler [3]. Those posturing against the application of IT in knowledge management do so with the reason that the important organisational knowledge is too multifaceted to be captured electronically. Hence, the argument is that the incentives for sharing knowledge and barriers to such sharing are not really technical. It is furthered that only through dialogue in human community can knowledge and meaning be achieved, which is seen herein as opposed to relying heavily on IT as a source of knowledge creation. Yet, these perspectives are myopic in their view of the various ways in which IT can aid knowledge management. In fact, the ways in which IT can support knowledge management are the following: Access to information; utilisation of search databases and online directories to find an expert or record sources of knowledge; working together in virtual teams through knowledge sharing; and analysis of transaction data to learn about customer needs and behaviour; amongst others [3].

A framework that can be used to analyse and tackle the potential role of IT in organisational knowledge management is the sociology of knowledge and on the view of organisations as “knowledge systems.” This framework identifies socially enacted knowledge processes: Construction, storage and retrieval, distribution and application [3]. Viewing organisations as systems of knowledge mirrors the cognitive and social nature of organisational knowledge as well as how it embodies practices and culture. A certain degree of social knowledge and interaction is required in carrying out the four sets of socially enacted knowledge processes - construction, storage and retrieval, distribution and application – even if the process is wholly automated and embodies codified knowledge [3]. Hence, the use of various forms of information systems can enhance knowledge creation, considering the flexibility of modern IT. Teamwork, for example, can be facilitated through information systems structured for collaboration and support, thereby leading to increased contact of an individual with other individuals.

Therefore, knowledge management is facilitated by the information technology infrastructure of the organisation. Although the organisation may directly develop certain information technologies and systems to pursue knowledge management, its overall information system must also facilitate knowledge management. The contents of the IT infrastructure are the following: data processing, storage and communication systems and technologies. Such infrastructure covers the entire field of the organisation’s information systems, comprising databases, data warehouses and systems for enterprise resource planning [5]. It is worthy of note that culture-bound procedures can be entrenched into IT to provide examples of organisational norms. The influence of organisational culture on the success of knowledge management initiatives has been recognised by most models of knowledge management. In a study conducted by Khosrow-Pour [8], trust is considered an element of culture in a knowledge organisation. It is found out that trust is an important issue for knowledge management initiatives and that lack of it works against knowledge management. The reason why people withhold sharing knowledge with others is because they do not trust them. Trustworthiness must thus be present in the culture of an organisation pursuing knowledge management. This aspect shall be looked into in this research’s investigation of applying the requirements of knowledge management in Dubai. The study of Ahmad and Daghfous [9] provides evidence that the Arab region does not still receive widely the concept of knowledge management. Most companies in this region are found to be greatly concerned with the confidentiality of their knowledge and the presence of trustworthy partners in their structures. Keeping confidentiality of such knowledge is however not consistent with how knowledge must flow in the perspective of knowledge management. It must be shared by the community and must be transferred with ease.

**Knowledge Management Effective Parameters**

**Leadership:** It is important to consider the role of leadership in knowledge management. According to Knight and Howes [10], the appropriateness of the kind
of leadership roles depends largely on the kind of organisation and the prevailing culture within it, alongside the relevance of the scale of the project to the future of the organisation and the degree of its visibility and top-level buy-in. A whole variety of roles can be found in a knowledge management initiative, including that of the chief knowledge officer, information professional, knowledge broker and technology and process specialist. Beyond the specific roles, leadership in knowledge management can be at any level. A big mistake often committed by senior management is appointing a chief knowledge officer, dedicating some staff to help him/her, allocating some budget and thinking that the individual can already deliver the required application of knowledge management. However, things can only change if such leadership demonstrates the importance of knowledge management through the various communication channels. Lack of leadership or employing the wrong kind of leadership can lead to failure in knowledge management endeavors. Senior management can delegate the task of harmonising the vision for knowledge to the needs of the organisation and manage the details of implementing a specific change programme [10].

**Technology:** The crucial role played by IT and information systems is their ability to support communication and collaboration. Information is transformed into knowledge through the combination of experience, interpretation and reflection. Knowledge can become information and vice-versa; and an important implication of this two-way direction is that information systems aimed at supporting knowledge in organisations may not turn out to be radically different from other forms of IT support. The interaction between tacit and explicit knowledge is also worthy of note here, since their linkage suggests that only those with a requisite level of knowledge can exchange knowledge. A shared knowledge space, typically called tacit knowledge [11], is required for an individual to understand another individual’s knowledge. IT is considered an important aspect of the shared knowledge space, which is also dependent on this space. The dependence of IT on the shared knowledge space is found in the requirement that workers must possess a common understanding of available information within the organisation. The lack of common understanding can lead the knowledge workers not to make use of information. However, relying on IT alone cannot make knowledge management to become more effective. Rather, IT must work with knowledge, thinking and community in order to work well [11].

**Availability Requirements of Applying Knowledge Management in the Arab Cities**

**Knowledge Management Technology in Arab Cities:** The application of knowledge management in Dubai can be seen in its establishment of Dubai Internet City, a pursuit for the eminent achievement in e-government. The City is built on 163 hectares of land, purported to shift the economy towards IT and telecommunications businesses and has been recognised internationally. Civil servants are required to provide public service online or lose their jobs. The pursuit of Dubai City to capitalise on IT for knowledge management is seen in a lot of things, such as provision of a computer and Internet access to every schoolchild by 2003; a new MBA programme offering in e-commerce for professionals within the private and public sectors; and provision of WAP services for payment of renewal of driving license and traffic fines; amongst others. UAE is ranked second on e-government index in the Arab region, whilst Yemen gets the least place [12]. Research and development (R and D) is a part of knowledge [13] and this is considered a growth activity in the Arab region. With the initial availability of reliable international records, R and D has begun expanding at 10 per cent per annum since 1967. In the Arab region currently, much attention is placed on the acquisition and dissemination of knowledge. However, such knowledge remains elusive due to the weak links between its various practitioners, who must establish suitable means and facilities to inter-connect [13].

Arab countries allot around 6 per cent of their GNP in education. Some students are provided 100 per cent enrolment in the first three levels of education and those in the university level enjoy up to 35 per cent enrolment of age group. Albeit other Arab countries lag behind, there is however a considerable number of university graduates, which is placed around 10 to 12 million in a 90-million labour force [13]. According to Zahlan, Arab countries are consumers of knowledge and such consumption can be investigated through an examination of their current economic activities. For example, the knowledge content of consulting and contracting firms can be emphasised, alongside their participation in Gross Fixed Capital Formation (GFCF) expenditures. The projects on which these expenditures are allocated in turn provide a viable insight on how connectivity can be established in organising professionals. Considerable growth is also exhibited by consulting firms in the Arab region, which have now a total of 15,000. Most of these firms handle small-scale work, however. There are also larger ones that
employ 1,000 engineers or more. The field of civil engineering is where the overwhelming majority of these consulting firms are found, where favoured areas are roads and buildings. There are only few companies who specialise in industrial and chemical engineering. However, supporting facilities, policies and knowledge infrastructure promoting connectivity between relevant professional groups are weak and limited. This leads to prevention from playing an adequate role in acquiring and accumulating knowledge. Massive brain drain and labour migrations are results of unemployment. Such unemployment may also be attributed to inadequate training programmes and absence of valuable skill certification systems. Promoting connectivity amongst professionals alongside adopting policies that support the growth of knowledge capabilities are considered the key to benefiting from knowledge management in the Arab region [13].

Organisational Culture of Arab Cities: Culture is an important factor in the determination of the readiness of a specific country in terms of knowledge management. A nation’s life is characterised by language, belief system and national heritage. In Arab countries, specifically in Saudi Arabia, it is found out that the main languages used in business organisations are Arabic and English, with the former taking the lead in the conduct of business transactions. Arabic is the main language used in social communication whilst English and other languages are used as a communication medium in some public or private organisations. Moreover, it is found out that only slight support is provided by societal and working culture in research and development (R and D) in the field of Information and Communication Technology (ICT). Cultural factors including beliefs, heritage values and religion create a corresponding impact on employees, which may affect how they perceive the adoption of ICT and knowledge sharing [14].

In their examination of organisational culture, Abdallah and Albadri [14] suggest that there is only medium impact produced by the culture of employee on his or her job. Organisational culture can have a positive influence if employees are working in their own country but such influence cannot be found if they are working abroad. Analysing this fact is worthy of note here. One would reflect on the possible reasons why a positive influence of organisational culture is present only in people working within their own country but not when they are abroad. One factor that can be perceived here is the presence of elements pertaining to exchange of tacit knowledge, which is obtained through dialogues in human community. Certainly, such dialogue can be easily facilitated when one is in his or her own country and where organisational culture is promoted, through which meaning and knowledge can be achieved, as earlier noted by Alavi and Leidner [13].

It must be noted that the Arab culture and the IT diffusion are predominantly influenced by the sense of time. Good evidence posits how Arabs perceive time differently from other cultures. The Arab sense of time is enshrined in a scenario exemplified by how top management enables paralleling process through various tasks at the same time [15]. This value of sense of time is worthy of consideration when analysing the application of the requirements of knowledge management in the city of Dubai, leading one to the questions, “In dialogues in human community, would members consider time as a necessary factor in their exchange of knowledge?” “How does time play a pivotal role vis-à-vis facilitating IT infrastructure, multi-dimensional organisational structures, shared knowledge space and community of practice?”

The study of Twati and Gammack [16] suggests a relationship between organisational culture innovations and adoption of information systems. It indicates that no difference can be found in the type of organisational culture between the oil sector and the banking sector in the Arab region. One would be led to the analysis that it would be important to consider national culture, for example, as a significant factor constituting organisational culture in companies in Dubai, since the Arab culture (beliefs, heritage values and religion) governs the ways through which employees and management perform their roles in the organisation. This notion is worthy of consideration in the transfer of knowledge and in applying the requirements of knowledge management.

Leadership Style and Existing Technology: In a study conducted by Grant [17] about leadership style in selected companies in Dubai, it is found out that there exists a positive and significant relationship between self-management leadership style and transformational leadership on one hand and entrepreneur’s organisation, on the other. In particular, a strong and positive relationship exists between self-management leadership and innovation. It means that a company’s entrepreneurial activities are motivated by the extent to which leaders encourage employees’ goal-setting activities and
self-observation. It is also furthered that self-management leadership behaviour plays an important role in influencing employees’ entrepreneurial actions in the firm’s efforts to reconfigure existing businesses or create new ones.

It must be noted here that transformational leadership predicts dimensions of entrepreneurial organisations better than transactional leadership, which is shown to have a negative impact on innovation dimensions. This idea is congruent with the notion that hierarchical attitudes are opposed to the promotion of creativity and innovation within the organisation and tend to produce formal structures, which obstruct dialogue and knowledge flow [17]. Dubai is impressive for its technology and finance cluster, which allowed it to attract eminent technology players such as Microsoft, Oracle, Compaq and Cisco Systems, amongst others. The international Data Corporation recognises Dubai as amongst the four global technology host-spots.

The Dubai cluster involves actors benefiting from geographical proximity. It consists of Dubai Internet City, Dubai Silicon Oasis and the Dubai International Financial Corporation [18]. The Dubai Silicon Oasis was established as an initiative of the Crown Prince and hence functions as a high-technology semiconductor and microelectronic industry park. The Dubai Internet City, on the other hand, is purported to support the business development of ICT companies by providing an ecosystem for knowledge economy. The City is considered the biggest IT infrastructure in the Arab region with its being established within a free trade zone and its being hailed as the world’s largest commercial IP Telephony system. This assemblage of high-technology knowledge and financial firms has provided evidence for Dubai’s success. The UAE government is the one facilitating this environment that allows foreign companies to enjoy 100 per cent tax-free ownership, repatriation of capital, ease of licensing and registration, intellectual property protection and absence of currency restrictions [18].

Given the discussion about leadership style in Dubai, it may be inferred that such leadership is harmonised with the requirements of knowledge management in terms of ease of knowledge flow. As noted above, transformational leadership is shown to have a positive impact on innovation dimensions. This positive impact exhibits ease of promotion of knowledge transfer and knowledge management, since leadership is able to promote an environment where innovation can easily take place. Hence, this research posits that the type of leadership commonly employed by most companies in Dubai is one that facilitates innovation, thereby suggesting that knowledge management occurs and is being applied amongst these organisations in the city.

**Main Findings and Observations:** After making the above analysis and research study, we see that the main requirements needed for the application of knowledge management in Arab cities are the following:-

- A central memory and collective mind of members of the organisation
- Information technology infrastructure
- Multi-dimensional organisational structures
- Dialogue in human community
- Shared knowledge space/tacit knowledge

In Dubai, information technology infrastructure is shown to be largely used as a requirement of knowledge management. Albeit the establishment of such infrastructure does not initially appear to be for the purpose of knowledge management, its amount is considered sufficient to push through a knowledge management system. Moreover, the transformational leadership style, which is the current leadership type in most selected companies in Dubai, is consistent with the adoption of a multi-dimensional organisational structure rather than hierarchy, as pointed out by Maier [4]. This would indicate that companies in Dubai are already employing the needed leadership style, information technology infrastructure and organisational structure designed to enable viable functioning of knowledge management.

As suggested by the type of leadership being carried out in most companies in Dubai, the transformational leadership style, it may be inferred that these companies do not in general adopt the hierarchical organisational structure since thus structure is not congruent to the implementation of transformational leadership. Hence, one may conclude that these organisations employ a multi-dimensional organisational structure, a structure that is consistent with the facilitation of knowledge management and is even a requirement of the application of knowledge management. The multi-dimensional organisational structure, as noted by Becerra-Fernandez and Sabherwal [5], promotes decentralisation, in which certain organizational layers are removed, enabling the company to increase the size of groups who report to each individual. This decentralised structure also enables
ease of knowledge flow, which therefore leads one to analyse that such knowledge flow may be present in companies in Dubai. Shared knowledge space, which allows an individual to understand another individual, is suggestive of the willingness of Dubai citizens to work within their own country and hence foster a positive influence of the organisational culture. This notion is suggestive of Alavi and Leidner [3].

**Concluded Remarks:** This research deals with the application of knowledge management requirements in Arab cities, with particular focus on Dubai as a case study. The research problem that it aims to address is how Arab cities, in particular view of Dubai, apply the requirements of knowledge management.

Why it is important to tackle knowledge management is because knowledge application is considered the source of competitive advantage, taking the point of view of the knowledge-based theory of the firm. Accordingly, the Arab culture appears not to receive widely the concept of knowledge management as most companies found in this region exhibit strong confidentiality of their knowledge and the existence of trustworthy partners with whom they transact business. However, keeping one’s knowledge to oneself is not what knowledge management requires, since such knowledge must be transferred with ease and must not be withheld.

This research shows that Dubai is a prospering economy with its features of advanced information systems infrastructure. The leadership type carried out in most of its companies is transformational, which is consistent not with a hierarchical organisational structure but with a multi-dimensional organisational structure. The decentralised system promoted by this structure enables ease of knowledge flow, which harmonises with the application of knowledge management. This research identifies the requirements of knowledge management as the following: a central memory and collective mind of members of the organisation; information technology infrastructure; multi-dimensional organisational structures; dialogue in human community; and shared knowledge space/tacit knowledge.

**REFERENCES**

