

## **Increasing the Productivity of Arab SMEs through Knowledge Management**

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**Abstract:** Today knowledge is considered to be the primary resource of competitive advantage. This paper analyzed and assessed the status of KM in SMEs in Arab countries. It also examined the factors that influence the adoption of KM for SMEs in the region. In this paper; a comprehensive literature study, a Knowledge Management's personalization approach were undertaken to set a KM Personalization Framework. Many organizations have profited from KM because they recognize the importance of the KM in business growth and development. However the result of this paper found SMEs, in Arab countries have not realized this importance and still are vulnerable. The study takes this factor into consideration and proposed an adoption approach specific to SMEs in region countries. The study contributes on KM and SMEs literature in both Arab and developing countries and is one of the few studies conducted in the specific region countries.

**JEL Classifications:** D23, F25, M18, O32

**Keywords:** Productivity, KM, SME, Arab countries, Competitive Advantage

### **1. Introduction**

Knowledge management or KM helps in increasing productivity, efficiency and effectiveness in all operations. KM can seriously hamper the growth and productivity of any SME and creates alternate profitable prospects for them. The literature on KM considered in this paper show how this might be applied to SMEs in Arab countries. Many international organizations have profited from KM because they recognize its importance in business growth and development. However the study found SMEs, in Arab countries have not yet realized this importance as enough and still are vulnerable (Al-Sugheyer & Sultanov, 2010).

The potential, that KM offers in improving the innovation and effectiveness has been cited as a key source of competitive advantage (MacKinnon et al., 2002). Despite this pressing need, it is widely accepted that small enterprises – even the most knowledge-intensive ones – are characterized by a lack of uptake of KM initiatives (Nunes et al., 2006). May be because of those KM systems which are expensive to purchase, use and maintain. The aim of this study was to propose an alternative approach to developing KM systems for SMEs in developing economies. Instead of usual approaches, where KM needs heavy financial and other resources, study suggested solution centric approach (Patrick & Dotsika, 2007).

In order to maintain and develop further their innovative skills SMEs need to develop their understanding of knowledge management (KM), as a key business driver rather than as a resource-intensive additional initiative (Zanjani et al., 2008). Today the business environment has become

more competitive than ever before. Small and medium enterprises (SMEs) make substantial contributions to national economies and are estimated to account for 80 percent of global economic growth (Pavic et al., 2007). Today knowledge is considered to be the primary resource of competitive advantage. The conventional factors of production have become secondary. It is straightforward to obtain them, provided there is knowledge (Chen et al., 2006). Davidson and Griffin (2003) pointed out that SMEs have contributed many innovative ideas and technological breakthroughs to different societies. "KM has become the latest strategy in increasing organizational competitiveness" (DeTienne & Jackson, 2001). KM is seen as a vital factor in realizing and sustaining organizational success for improved productivity and innovation. And the critical assumption of KM is that organizations that manage organizational and individual knowledge better will deal more successfully with the challenges of the new business environment. Today, knowledge is the primary source of competitive advantage and the key to success for organizations in the knowledge economy (MacKinnon et al., 2002; Patriotta, 2003).

This study analyzed different aspects of KM role in increasing the productivity of SMEs, with respect to Arab countries and proposed strategies for better implementation of KM programs in the region.

The study consists of six sections. Section 2 contains literature about KM & productivity, SMEs in Arab Region, and KM & SMEs. Section 3 discussed the role of SMEs in Arab countries and the need for KM in SMEs growth. Section 4 highlighted the Challenges and benefits of KM for SMEs and section 5 contains the research results and finding. Section 6 provides research finding and future directions and recommendations.

## 2. Literature Review

SMEs are different from large organizations in several characteristics like resource limitations (financial, human and technological), informal strategies, and flexible structures (Hudson, Smart, and Bourne 2001; Qian and Li 2003). Davenport and Prusak (1988) defined knowledge as follows: 'Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower. In organizations, it is often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.' Knowledge is the primary resource for individuals, organizations and the economy.

### 2.1 Knowledge Definition

Knowledge has been defined in multiple ways. Delahaye (2003) concluded that knowledge is a distinctive source as it has no law of diminishing returns, grows from sharing. Wiig (1997) argued that knowledge is not a new concept, from very early times people have transferred knowledge by succession to the next generation. In ancient cultures, this has taken the form of narratives and songs, which were intended to teach the new generation new skills and survival techniques.

Samuel (1775) wrote in his early dictionary "Knowledge is of two kinds: we know a subject ourselves, or we know where we can find information upon it". Knowledge can be divided into two categories: tacit and explicit. Explicit knowledge refers to the knowledge which can be articulated in formal language such as grammatical statements, mathematical expressions, specifications, manuals, and thus can be transmitted across individuals formally and easily. On the contrary, tacit knowledge refers to the knowledge which is hard to articulate with formal language, but is personal knowledge embedded in individual experience and involves intangible factors such as personal belief, perspective, and value systems (Chesebrough, 2006; Nonaka & Takeuchi, 1995).

## 2.2 What is Knowledge Management?

KM involves knowledge identification, creation, acquisition, transfer, sharing and exploitation. KM is vital for efficiency and organizational competitiveness (Egbu, 2001). Boh (2007) described that KM is a systematic process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value. Menkhoff et al., (2002) defined KM as the task of developing and exploiting both tangible and intangible knowledge resources of an organization. Pillania (2006c) defined KM as “a systematic, organized, explicit and deliberate ongoing process of creating, disseminating, applying, renewing and updating the knowledge for achieving organizational objectives”. KM is a process which involves the management of explicit and tacit knowledge (Nonaka & Takeuchi, 1995).

## 2.3 SMEs in Arab Countries

There is no universally agreed definition of SMEs. Some analyses define them in terms of their total revenue, while others use the number of employees as an indicator. Many Arab countries have recognized the importance of small and medium-sized enterprises (SMEs), and have formulated policies to encourage, support, and fund there. Table1 indicate different types of definitions to SMEs adopted by different region in the word. Despite this variance, a large number of sources define SMEs to have a cut-off range of 0-250 employees. Similarly, in the Arab countries, the definitions of a micro, small, medium and large enterprise vary widely. According to Arab Labor Organization Report for March 2008, for example, in Yemen, a small enterprise is one employing fewer than four workers, a medium-sized enterprise is one that employs between two and nine workers, and a large enterprise is one that has more than 10 employees. In Jordan, a small enterprise is one with between four and 10 employees and a medium-sized enterprise is one with between 10 and 25. Micro-businesses are those with up to four employees. In Egypt a ME is a paid capital of no more than LE1 million and no more than 50 workers.

**Table 1.** A Defining Small Medium Enterprises in Developing Countries

Institution	Maximum # of Employees	Max. Revenues or Turnovers (\$)	Maximum Assets (\$)
World Bank	300	15,000,000	15,000,000
IMF-IADB	100	3,000,000	(none)
African Development Bank	50	(none)	(none)
Asian Development Bank	No official definition. Uses only definitions of individual national governments.		
UNDP	200	(none)	(none)

Source: Tom Gibson, H. J. van der Vaart, Defining SMEs. September 2008, p5

SMEs constitute a very heavy portion of Arab region economies as their contribution in GDP is 35%. According to the Union of Arab Bank Statistics, there are more than 10 millions establishments in the region that fall under the category of SMEs. 90% of the micro and small establishments accounts for 80% of all non-agricultural sector employment. All these statistics clearly indicates the vital role of SMEs in the economic growth of Arab countries.

However, According to OECD (2000) and Asian SME Summit (2009), SMEs make-up the largest proportion of businesses all over the world and play tremendous roles in employment generation, provision of goods and services, creating a better standard of living, as well as immensely contributing to the gross domestic products (GDPs) of many countries. The European Commission gave rise to the term SME in 1996 and defined the term as organizations employing fewer than 250 people (Burns, 2001). In developing countries, SMEs are defined differently for various countries. The term SME covers a heterogeneous group of businesses in a developing economy, ranging from a single artisan working in a small shop making handicrafts for a village market to sophisticated engineering firms selling in overseas markets (Fischer & Reuber, 2003). Generally SMEs in

developing countries have not more than 250 employees. Some important characteristics of SMEs include:

- a) The company is characterized by the entrepreneur who very often also is the owner of the company
- b) The entrepreneur normally is the “general manager”, thus he acts on his own risk
- c) The entrepreneur has a network of personal contacts to customers, suppliers and the relevant public sector. So the contact is close and rather informal
- d) The company usually acts very local
- e) The products offered can be very individual to the customer’s needs
- f) The form of organization is rather informal and flat
- g) The company can react quickly to changes in the environment
- h) The company is not dominated or ruled by another company, e.g. part of big business concern
- i) The market share is normally small
- j) The products are little diversified
- k) About 36% of the SMEs are not older than 10 years (specific development stage)

SMEs are the backbone of the industrialization process of many Arab countries and play a vital part in expanding a country's economy. In Egypt, SMEs account for more than 90% of the total number of establishments, 65 per cent of employment and 47 per cent of manufacturing value added while in Yemen, SMEs comprise 95 per cent of the total manufacturing establishments and contribute 45 per cent of employment and 18 per cent of value added in the manufacturing sector. Across the region, the contribution of SMEs to the overall economic growth and the GDP is high. It was estimated that SMEs contribute 50% of Moroccan industrial GDP and provide employment to 82% of the total industrial sector employment. In Jordan, SMEs constitute more than 92% of all establishments and contribute 63% of the value-added segment. In India, SMEs' contribution to GDP is 30% (Mahmood, 2008).

SMEs' contain various advantages in income growth, entrepreneurial training, creation of technological capabilities, greater flexibility to changing market circumstances, job creation and lower wage inequality and dispersion of industry away from urban areas and regional development (Berry, 1998; Katrak and Strange, 2002). Other benefits of promoting SMEs in Arab countries are according to (Mahmood, 2008):

- a) SMEs foster an entrepreneurial culture and provide resilience in the economy
- b) Contribute to exports
- c) Poverty reduction through employment generation
- d) Facilitate learning geographically and across the sectors
- e) Their efficiency in resource allocation is higher
- f) Reduce inequalities in the economy by distribution of wealth

### **3. Knowledge Management in Arab SMEs**

The SME sector is a very diverse group, ranging from the local corner shop to sophisticated hi-tech start-ups. This finding again underlines the importance of new firms which grow. Both large and small enterprises require continuous generation, sharing and implementation of knowledge in order to maximize their competitiveness and survival chances in the modern information society (Nunes et al., 2006; Pillania, 2008b). However SMEs relatively need more focused approach towards KM as they face severe competition. Saloja et al., (2005) said that a more conscious and systematic

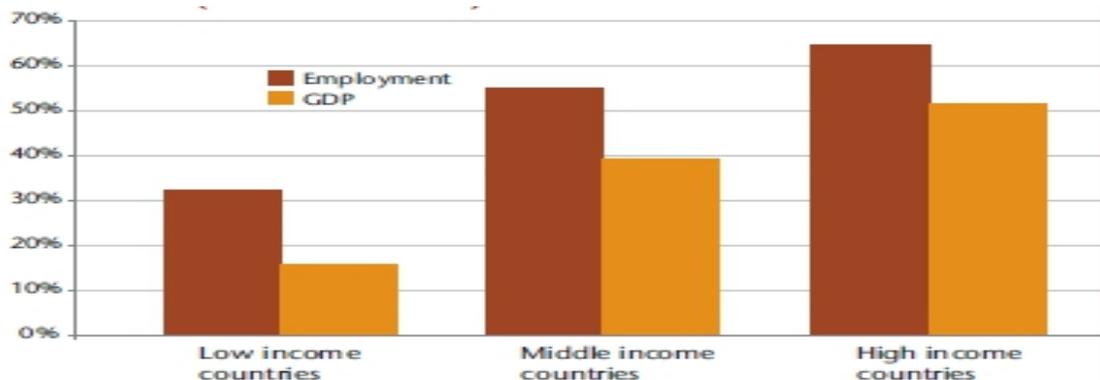
approach to KM enhance SMEs performance and competitive advantage. KM may also promotes innovation and business entrepreneurship, help manage change, and empower employees (Nonaka & Takeuchi, 1995). Zanjani et al., (2009) stated that SMEs need to make operational, tactical and strategic decisions and without accurate information they are unable to undertake this role.

Wong and Aspinwall (2004) described two complementary perspectives about KM importance in SMEs. "Pull" perspective, which identifies the potential benefits or improvements that are crucial for small businesses, include for example improved competency, efficiency, innovation, learning and knowledge sharing. And "push" perspective, which deals with the external or environmental thrusts that push them to the forefront of KM, include amongst others, competitive pressure, globalization, movement of large companies toward knowledge based organizations (Davenport & Prusak, 1988). The knowledge of employees of an organization is an important asset and such knowledge should be garnered for the ultimate good of the company.

There are some other underlying reasons for which SMEs need to manage their knowledge resources.

- a- SMEs compete on the basis of their competencies and knowledge is an important resource to be competent, hence have to use knowledge more than traditional resources.
- b- The owner of SMEs, usually are also manager needs to transfer knowledge to employees. iii) SMEs usually did not find or unable to retain good minds; hence they must settle for less qualified but motivated human resources.
- c- Key stake holders like lending institutions, investors, suppliers, and customers, judged SMEs on the basis of their knowledge and strategies to put knowledge in right use. (Zanjani, Mehrasa & Modiri, 2008).

Another factor, which explains the emergence of KM concepts, is the continuous 'rightsizing' trend. Starting in the 1980s, corporate downsizing measures led to the loss of valuable information and knowledge resources and subsequently to the emergence of KM as strategic countermeasure. The driving forces like globalization have lead individuals and organizations to appreciate the important role of knowledge in an increasingly competitive world market (Davenport & Prusak, 1988). KM plays an important role for many SME companies in gaining competitive advantage and business survival. Knowledge in a company should be properly managed and controlled to be effective and competitive, therefore, there is no excuse or option to them to manage individual and organizational knowledge to continuously improve their process and compete in market.



**Figure 1.** SME contribution to employment and GDP

**Source:** World Business Council for Sustainable Development (WBCSD), Promoting SMEs for Sustainable Development, WBCSD, July 2007, p2

SMEs as a part of business sectors are no different from any other business sector. SMEs have a set of distinctive needs as described in the above section that call for the deployment of a KM system for generating, sharing, and refining organizational knowledge. However, in practice, SMEs are still very reluctant to take KM principles into their strategic thinking and daily routines (McAdam & Reid, 2001; Nunes et al., 2006). SMEs usually lack resources such as finance, technology, land and labor. Therefore, SMEs must do more with less (Desouza & Awazu, 2006). SMEs need to be creative in working in order to manage knowledge with limited resources (Zanjani et al., 2008). Figure 1 demonstrates SME contribution to employment and GDP in Arab the sub-categories: High income: ((Bahrain, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates), middle income (Lebanon, Libya, and Oman, Algeria, Djibouti, Egypt, Jordan, Morocco, Syria, Tunisia) and low income (Comoros, Mauritania, Sudan, and Yemen) (WBCSD. 2007).

Thus, SMEs in Arab countries, in comparison with large enterprises are on back step for the availability of resources to manage knowledge. SMEs do have certain advantages in the practice of KM.

- a- SMEs flat structure and short decision making process allows shorter and faster information flow which can improve communication, as well as easier to permit new change initiatives.
- b- SMEs flexible culture provides a good foundation for a change, for example the practices of quality initiatives.
- c- People dominated together with organic behavior, rather than bureaucratic and system dominated, and this helps improve the chances of success for new initiatives.
- d- The high incidence of innovativeness can nurture a continuous improvement culture. Knowledge, if properly harnessed, enables SMEs to stand out in the competition and outperform their rivals, thus maintaining a competitive edge (Wong and Aspinwall, 2004).

#### **4. Challenges & Benefits for Arab SMEs with KM**

The economies of the Arab countries lack diversity, face weak managerial structure poor training and skill structure, and lack of Social protection a situation which has remained unchanged since the early 1990s. Oil exports are still the main economic engine of the region. Many people, not only in the oil-rich countries, have private incomes and there is still secondary dependence on oil revenue throughout the region.

Arab SMEs due to their size face lot of problems related the knowledge management that make them vulnerable and prevent them from attaining a sustainable growth. These problems are particularly significant in the areas access to financing, human resources development, business regulations and restrictions and technological capability. In presence of such problems, many SMEs are unable to meet the challenges created due to liberalization and globalization of markets. Spender (2002) asserts that the intangible nature of knowledge makes it harder to identify and manage; consequently it cannot be treated in the same way as other organizational assets. SMEs in both Arab and developing countries have to face many challenges regarding KM adoption. Cultural barriers such as distrust, religion background, lack of recognition and communication, knowledge is power mindsets, retrenchment concerns and so forth act as demotivators with regard to effective knowledge sharing and utilization of 'what we know'. Organizational culture plays a critical role in adoption and successful implementation of KM in SMEs. Von Krogh (1998) stated "high organizational care culture" as a key element in KM development as its helps people to share ideas, information and knowledge. Many SME owner-managers lack even fundamental concepts about KM and are unaware about underlying benefits of KM.

Another crucial challenging for SMEs is developing KM competencies and visionary leadership. SMEs may face also regarding KM:

- a- SMEs rarely have a KM policy on strategic level;
- b- Delegation of decision-making authority
- c- Use of more sophisticated KM tools (Von Krogh, 1998).

Handzic and Hasan (2003) identify two major challenges for KM: achieving an objective picture of the field, based on formal and sound research, which integrates diverse perspectives of researchers and practitioners; and bridging the gap between theory and practice, thereby providing well-established KM strategies, tools and procedures for managers.

The lack of technical skills and management know-how on a business- level has impeded the birth and growth of businesses. To overcome these obstacles, formulation of KM development policies and capacity development of SMEs in the region as well as what have been done in other developing countries like in Brazil, Malaysia which have developed KM policies and systems to foster the SMEs development.

Consequently such challenges and resistance to change in KM adoption and successful implementation is natural. This resistance was manageable as it was because of lack of KM knowledge and lack of training about KM implementation.

## 5. Arab SMEs and KM Strategies

KM strategy depicts the general approach an organization aim to take to align its knowledge resources and capabilities to the intellectual requirements of its strategy, thus reducing the knowledge gap existing between what a company must know to perform its strategy and what it does know. (Zanjani, et al., 2008). It is clear that the benefits of KM to SMEs development are numerous, especially for the Arab countries, what may include: - Availability of modern technology, - Reduce the cost of product development, - Faster product development, - Facilitation of marketing policies, - Increases accountability and incentivizes performance, - and improves access to finance.

Other important and inter-related factors include the saturation of the market for large corporate and the need to diversification of business categories. Considering the nature and requirements of SMEs in Arab countries, researchers proposed personalization strategy for KM. Personalization is a strategy to manage the knowledge that is formed via human communication. Personalization strategy focuses on dialogue between individuals, not knowledge objects in a database (Alejandro, 2011). It is a person-to-person approach where knowledge is shared not only face-to-face, but also by electronic communications, thus building networks of people (Meron~o-Cerdan, et al., 2007). Personalization, on the other hand, provides a rich medium for communication, as it is concerned with the use of people as a mechanism for sharing knowledge (Boh, 2007). If the business strategy focuses on generating new or customer specific solutions or product innovations the personalization strategy should be chosen rather than the codification strategy (Greiner, et al., 2007). Personalization strategy is more suitable for SMEs conducting tasks that are more innovative in nature (Zanjani et al., 2008). And here is detailed the main problems that SMEs face in the Arab countries region.

### 5.1 Weak Managerial Structure

Most of the small and medium enterprises in Arab countries are owned and managed by one person who takes care of all the managerial functions of the enterprise: organization, marketing, production, accounts, etc. Such heavy load on the owner-managers prevents them from working-out

proper strategic plans for their businesses, as they are usually bogged down with the problem of daily running.

### **5.2 Poor Training and Skill Structure**

The workforce engaged in small and medium enterprises in countries of the Arab region suffer from poor training, and low level of skills. Those personnel consider “learning on the job”, and by practice, as the most important venue of training, and skill acquisition. They have low regard for the usefulness of formal education and learning in classrooms.

### **5.3 Lack of Social Protection**

Working conditions are widely prevalent in the small and medium enterprises in Arab countries, as the bulk of the workforce in these enterprises suffer from the lack of social protection, in particular:

- a) Absence of social insurance;
- b) Long working hours of frequently 50 hours or more (El-Mahdi 1992);
- c) Absence of minimal sanitary and safety regulations;
- d) Frequent use of child labour (El-Mahdi 1992).

### **5.4 Reliance on Personal Saving and Informal Finance**

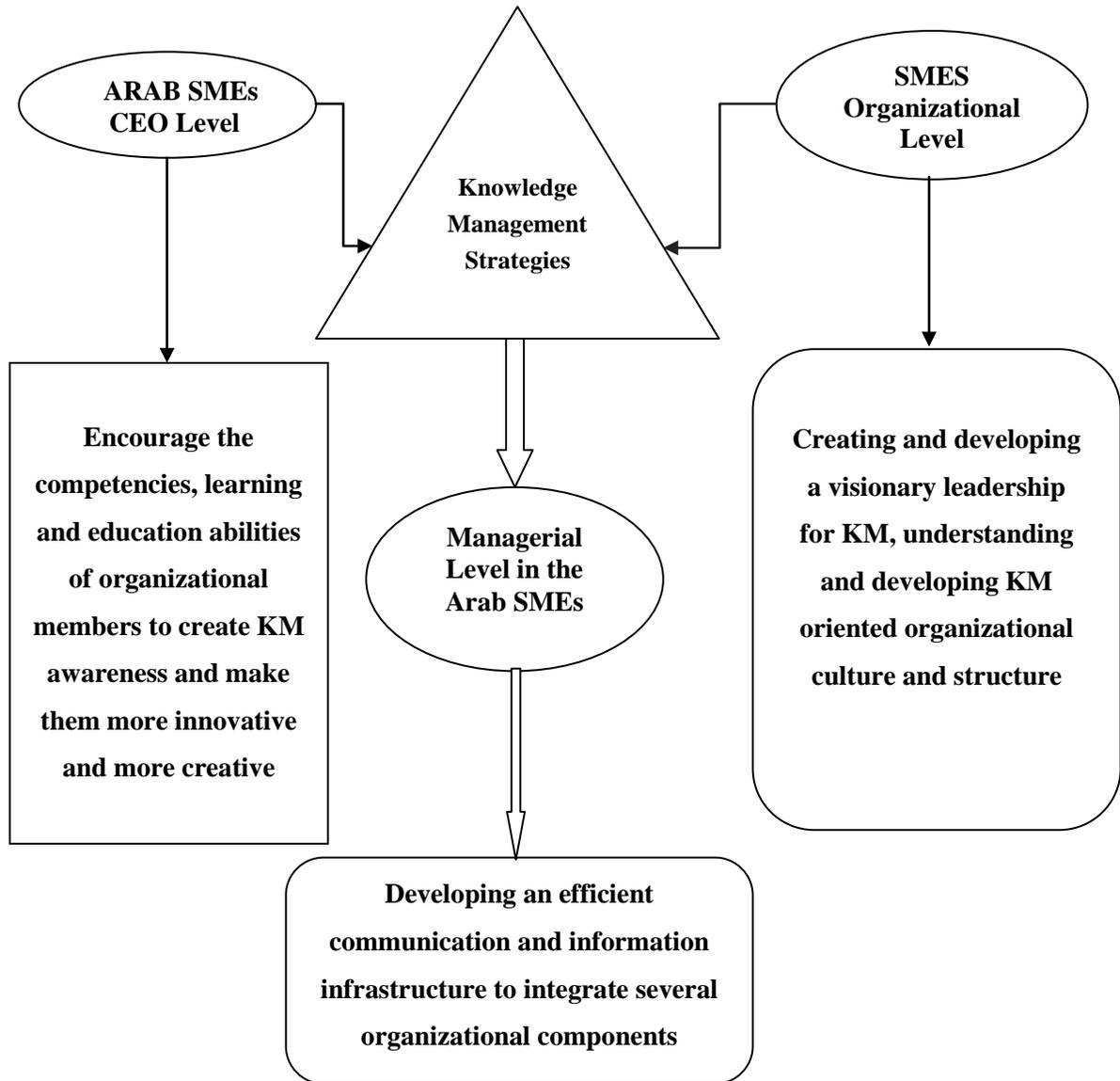
Formal credit system does not play any significant role in the provision of financial support to start-ups or to expand existing enterprises. Entrepreneurs have to raise money through their own informal sources of finance.

### **5.5 Growth Constraints**

The majority of the small and medium enterprises in Arab countries face serious growth constraints, namely:

- a) **Demand constraints**, due to the shortfall of demand among those income groups who are likely to buy goods and services of the SMEs.
- b) **Financial constraints**, as the huge lack of access to the financial credit market, led most of the small establishments to match expansion to their internal cash flows.
- c) **Management constraints**, due to the lack of proper organizational structure and managerial expertise.

Through the suggested KM strategy of personalization, SMEs will able to leverage upon its tangible and intangible assets, to learn from past experiences, whether successful or unsuccessful, and to create new knowledge. This KM strategy needs to implement at three different levels in SMEs, people level, organizational level and technological level as described in figure 2. At the people level, KM needs to emphasis on the competencies, education and learning abilities of organizational members to create KM awareness and make them more creative and innovative. At organizational level, KM is concerned about the development of a visionary leadership and a sound organizational culture to ensure maximum sharing of innovative and creative knowledge. Chan and Mauborgne (2003) also suggested constructive leadership behavior and development of a healthy organizational culture as important enabler of KM. Technologically, effective KM requires the efficient organization of a suitable communication and information infrastructure (e.g. intranet) based on suitable and relevant taxonomies and knowledge repositories (where applicable).



**Figure 2.** Knowledge Management Strategy for SMEs in Arab countries

## 6. Conclusion

It's not necessary that the development of KM will solve all the problems SMEs presently face. Most small and medium enterprises in the Arab region are family businesses, as the "extended" family plays a dominant role in ensuring business continuity and daily survival; providing the needed knowledge, finance, the moral support, and the necessary networks within the country. SMEs in Arab countries have done very little for KM development in their organizations. However SMEs will be in position to deal effectively with demands of present competitive era by managing individual and organizational knowledge. Arab SMEs need to make knowledge resources more productive with the help of proposed KM strategy.

SMEs in the region need to create such an environment which can boost interaction between individuals and teams ensure maximum participation and a high level of motivation to become more

creative, competitive and encourage an innovative spirit. The proposed strategy for developing KM will help them in achieving stated objectives.

Knowledge Management's personalization approach is most relevant to Arab SMEs and for other developing countries because this has the greatest potential for the sharing of valuable tacit knowledge to reduce the following obstacle: Weak managerial structure, Poor training and skill structure, Lack of Social Protection, in particular: a) absence of social insurance; b) long working hours of frequently 50 hours or more (El-Mahdi 1992); c) absence of minimal sanitary and safety regulations; d) frequent use of child labour (El-Mahdi 1992). Reduce Reliance on personal saving and informal finance, Growth Constraints, namely: a) Demand constraints, b) Financial constraints, c) Management constraints,

The personalization approach framework developed in this study may guide policy makers in Arab region to pay an attentive attention to help SMEs in their countries to build KM awareness. Government agencies, chambers of commerce and SMEs need to commit more resources and work collectively to make the KM more profitable for SMEs. Also the owners and managers of SMEs need to change their attitudes and think positively about adopting new changes like KM adoption to remain competitive.

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