

## The Role of Centralized Knowledge Development Centre for Success of SME Sector

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### Abstract

The aim of the current study was to assess the importance of a Centralized Knowledge Development Centre for the progress of the SMEs' in Malaysia and factors that influence SMEs' favorable attitude and barriers that hinder them from adopting this usage in their business. SME is the heart of any national development both from an economy point of view as well as employment. Further SME has to handle a diverse portfolio of things in as short a time as possible and with the minimum manpower they can garner from within their small outfits. Knowledge Management would make it possible, but creating a Knowledge Management system is costly and beyond the professional levels or cost considerations of the SME sector, however it is an important initiative so as to have a competitive edge in this dynamic environment, where the latest information is the key to success. Enterprises need solution based on customized information at a rapid pace, which is possible for the small sector, due to the nimble nature of this sector, if they had the basic information and knowledge of the requirements. Knowledge Management also enables one to become a global player even in their greenfield project if the right information of global needs and consumer preferences, prices etc are available. The questions that arise are: Given this situation, the major questions that arise are: "How can SMEs be encouraged to participate collectively in this KDC?" "Why is the encouragement mediocre with no special focus into training and development and incentives created for them?" "Why have there not been any in-depth studies of this emerging area till date so that there would have been major technological breakthroughs?" It is opined that if there is a Centralized Knowledge Development Centre created professionally, the SME sector would benefit immensely. Though many issues would remain unaddressed even after our study, a fairly good glimpse is expected to be available to the researchers in this regard. Nevertheless a study of the likely benefits as perceived by the SME sector is felt interesting and useful for academicians, policy makers and the industries attempting this development.

### Introduction

Constant and rapid changes occurring in the markets force small and medium sized companies to continuously look for the ways on how to survive grow and be competitive. SME's faces difficulty of establishing knowledge management (KM) practices within the industry and firm. Thus, KM has become increasingly important for all organizations. KM approaches can be divided into people- and technology-oriented categorizations, which basically reflect the origin of the approaches.

It also compares the perceptions of both large organizations and small- to medium-sized enterprises (SMEs) at a Meta level in regard to knowledge management (KM) to improve overall understanding and synthesis of the philosophy and to develop sector-specific learning in the SME sector. This includes the focus on the role of KM within the organization and how organization shape and operations can be affected by KM.

SME needs to develop models to identify their key dimension to facilitate KM thus aligning strategy for efficient performance. This could be used as being intrinsically linked to the social and learning processes within the organization.

Structurally, SMEs are typically informal with flatter organizational structures. They are often weak in terms of financing, planning, training and the use and exploitation of advanced information technology, due to lack of resources. The vast amount of knowledge generated in SMEs is tacit in nature and is lost due to various reasons. KM is a complex integrated process. The field study has indicated that some elements of KM are practiced but in an ad hoc fashion. Knowledge must be identified, captured, stored, mapped, disseminated and created, and used effectively to provide the best possible benefits for organizations. Any technological infrastructure that is put in place to support KM must be adapted to the organization's needs and not the other way round. The effective implementation of relevant strategies, tools and technologies for KM can help SMEs in the

construction industry to move towards a knowledge culture which is vital in today's knowledge economy.

### Objective of study

The objectives of the research are:-

- a. To understand what is Knowledge Development Center (KDC) and Knowledge Management (KM) in a greater view such as definition, the tools use and the applications.
- b. To study the basic fundamental principle and issues of the role of KDC and KM in measuring the success factor of SME's.
- c. To discuss the theory and foundational issues of the role of KDC and KM in measuring the success factor of SME's such as intellectual capital, organizational learning, business innovation, societal learning, ethical social innovation and lastly evolutionary development.

### Literature Review

Knowledge Management is very much focusing on Knowledge Creation and Innovation Systems that revolve around Knowledge Sharing Process. Knowledge sharing Process does not only limited to the internal layer of organization, but also expand in the external layer of the entire environment that the organization is related to. Knowledge Management in Malaysia is still on early stage, but there an increase in the popularity among companies and SME as Knowledge Management can have a positive impact in the company's overall performance. Jameson, Lorence and Churchill (2006) did a case study on Data Quality Assessment Methods in Healthcare Information Systems. The study shows that it need an active communication and parallel communication and sharing system, though the personalized nature of healthcare practice required little need for rigorous data quality assessment in daily practice. The rapid adoption of evidence-based decision support systems at the provider level, however, now suggests that the application of data quality improvement is less likely to be found objectionable in the establishment of standards for information application and management in health care. Such an information-intensive environment requires a system of formal, continuous data quality assessment in service delivery and quality management.

Corso, Martini, Paolucci and Pellegrini (2003) find out that to survive in the global economy small and medium enterprises have to improve their products and processes exploiting their intellectual capital in a

dynamic network of knowledge-intensive relations inside and outside their borders. By erasing traditional constraints to SMEs innovation ability and leveraging their flexibility and responsiveness, Information and Communication Technologies provide SMEs with opportunities for Knowledge Management today in most cases largely unexploited.

Chatzkel(2000) review on Enterprise Intelligence World Summit: Annual Knowledge Conference and Exposition Conference stated that the Knowledge Movement at the crossroads. For an organization to transform themselves into Knowledge Organizations they must align strategies, policies, practices, technologies and people's values (both executive and frontline) to support innovation, while simultaneously increasing rapid knowledge diffusion. This is because organizations are moving their practices beyond the experimentation stage and are making knowledge management and intellectual capital principals the heart of how they are doing their business.

Hingston(2001) also says in his study of Implementing A Knowledge Sharing Website that we need to make alignment with company strategy, and determined high-level support. Without these, any project, for all its merit, would have fallen at the first hurdle.

Papoutsakis and Vallès (2006) has described in their journal that there is positive relationship between shared knowledge and manufacturing performance. Further in their study they demonstrated that Information technology significantly affects manufacturing performance, and has a less significant effect on shared knowledge, as it mainly influences explicit to explicit knowledge transactions. Therefore, managers should become aware that the great challenge is settled on investment in knowledge processes and knowledge workers and managers should also be aware that sharing knowledge in a meaningful manner requires a well balanced merge of technology with the company's culture, in a way that creates a trusting environment that support collaboration. Lastly, the authors said that senior executives need to manage the middle-level managers in an effort to minimize the negative effects due to resistance to change and the various barriers to communication (structural, as well as language and cultural barriers).

Akhavan, Jafari and Fathian (2005) explore the failure-factors of implementing Knowledge Management System in Organization and discover that there are ten important causes to it:

1. Lack of familiarity of top management with dimension of KM and its requirement.
2. Selecting an unsophisticated and inexperienced person for leading KM Team.
3. Improper selection of Knowledge Team members.
4. Wrong planning and improper forecasting for the project.
5. Lack of separate budget for KM Project.
6. Organizational Culture.
7. Lack of support and commitment of top management.
8. Resistance against the change.
9. Inability of KM Team for distinguishing organizational relations.
10. Nonconformities between current and new system.

Chong and Choi (2005) then discover critical factors in the successful implementation of Knowledge Management. There are eleven factors that management needs to understand thoroughly:

1. Employee training is critical.
2. Employee involvement.
3. Open and trustworthy spirit of teamwork.
4. Employee empowerment.
5. Visible top management leadership and commitment.
6. Information System infrastructure.
7. Performance measurement.
8. Knowledge-friendly culture.
9. Benchmarking.
10. Knowledge structure.
11. Elimination of organizational constraint.

Knowledge sharing has an obvious linkage with innovation. Knowledge sharing has to absorb enough knowledge to facilitate knowledge creation and innovation. Innovation is a process that is comparable to learning. Based on that, it is possible to use the principles and theories of individual and social learning to examine and analyze the innovation phenomena in organizations, institutions and societies.

Smith (2000) stated in a book review that action learning intimately connects knowing and doing and also fosters the culture that supports the people aspects necessary for effective and efficient knowledge management. Therefore, a good action learning system has to be placed to support the K-Worker and help turn knowledge into action. K-Workers are those who perform tasks with novelty ideas and focus on the concept of uniqueness. They require a high degree of collaboration and knowledge sharing in order to perform their task as they are dealing with complex

problem solving. Providing them with support system is a critical step towards Knowledge Management implementation. Roy, Falardeau and Pelletier (2001) revealed in their study that an adequate support system for the K-Worker can significantly reduce the amount of time to accumulate and validate information (their main activity) and enable them to perform better and effective decision making. Decision Support System and Performance Support System particularly helps in solving unstructured problems.

Human capital is one of the most valuable and underleveraged corporate assets of the present time Altintepe (2001). For long, managers did not recognize how to invest in human capital and distinguish associated returns.

Recent technological developments and changes in the competitive business environments created an opportunity for better management of human capital at large organizations. The digital communities that adopt free market principles is an innovative concept that is well suited to establish frictionless environments for knowledge exchange, and therefore, for the growth of human capital Altintepe (2001).

However, Altintepe (2001) is opposed to the requirement of having digital communities. Based on the author's study, digital communities are invaluable to large organizations, their implementation is nontrivial, requiring a major paradigm shift in the way executives view how knowledge is acquired, captured, organized and distributed within their organizations. Moreover, enterprises that decide to nurture digital communities need to develop complex analytical engines to manage the balance of demand and supply through comprehensive compensation plans.

Other than that K-Worker also associates with one of the important terms; Intellectual Capital. Intellectual capital needs to be managed and leveraged better to assist the Knowledge Management System. Abeysekera (2001) stated in a study that an audit on intellectual capital of a firm is vital as intellectual capital is one of the most important assets that needs to be managed consistently and efficiently to harness its value to increase the bottom line.

Therefore, the right infrastructure needed to be parallel with the needs of organization and their human capital's need. Daghfous (2003) has illustrated ways on how to make Knowledge Management a firm's core capability that focus on the vital part of Knowledge Management System; K-Worker or Human Capital.

Fernandez, Segura, Salmeron and Moreno (2006) have given the example of system that can help on the operational aspect of Knowledge Management System; Total Quality Management. To their mind, new KM focus can be based on TQM, in order to take advantage of organizations experiences and TQM management principles and getting effective and efficient strategic, tactic and operational tools in every day making decision process. Appropriate continuous improvement program should lead to Knowledge Organization.

Lewkowicz and Lewkowicz (2001) said that it is important to view the overall strategy as a project. Strategy is examined from the perspective of the ongoing implementation, rather than for its content or ideation. However, the 'implementation' is considered to be the determining factor, in the process of formulation and determination of the content.

Carrillo J. Ph.D. (2003) defined that knowledge-based development is a theoretical and technical field which related to the economic science and the knowledge management. Author proposed a three levels knowledge-based development. First level is social knowledge infrastructure, most KBD program focuses on the multiplication of information, experiences and resources through the ICT. The second level is human capital development; this level is facilitating self-development in natural agents such as through the communities of practice. Third level is development of the social capital system; through the social capital system users can identify, measure, understand and capitalize intangible or knowledge value easily.

Kailer N. and Scheff J. (1999) discussed the external know-how provider can affect the SME co-operation process. Knowledge management contents know-how services which are consultant, training, and research. Tax consultant is the most important co-operation partner in know-how areas of SMEs. Training and educating the employees is one of the ways of knowledge developing. Employees also able to define and develop their knowledge through the research and development and direct affect the performance of the organization. According to the research which done by the authors, we found that the selection criteria of SMEs for the external know-how provider were based on good price-value relationship and majority were recommended by other companies.

Kuan Y. W. (2005) discussed the critical success factor for implementing KM in SME sector and these factors also direct affect to the knowledge-based development in an organization. The seven key

success factors are knowledge leadership, knowledge creating and sharing culture, continuous learning, a well-developed technology infrastructure, systematic organization knowledge process, a strong link to a business imperative, and a compelling vision and architecture (Skyrme and Amidon 1997). Author also mentioned five organization functional areas they are strategy, human resource management, IT, quality and marketing (Chourides et al. 2003). Besides that, author also proposed a more detail and comprehensive model which contain 11 factors for implementing KM in SMEs, they are management leadership and support, culture, IT, strategy and purpose, measurement, organization infrastructure, processes and activities, motivational aids, resources, training and education, and human resource management.

Based on the insights gleaned from the study of knowledge management practices in Turkish SMEs, F. Tunc Bozbura (2007) highlighted KM practices can grouped into four categories. These included communication, training and mentoring, policies and strategies, and knowledge capturing and acquisition. Through a survey in Turkey, author notice that most of the SMEs senior managers believe that the knowledge flow and sharing is not important. By the way, they want to prevent outflow of knowledge from the company. However, this also puts high barriers in front of knowledge acquisition from outside, and makes knowledge sharing harder. The human capital is the most important asset in the organization. F. Tunc Bozbura (2007) suggested organization should provide formal and informal training to the employee and encourage workers to widely open the information sharing channels in both ways (inflow and outflow) because implicit knowledge assets of employees can direct affect the work performance of the company.

S. Maguire and S.C.L. Koh and A. Magrys (2007) discussed the competitive advantage through adopting the information and communications technology (ICT) and knowledge management in the SMEs. ICTs have considerable potential to cut administrative costs through reorganization of internal administration and through alternative provision of services which was suggested by Mansell and Wehn (1998). Technical advances have made computers more effectively and efficiency giving small firms the potential to use software to make the business more competitive (Steinhoff and Burgess, 1993). ICT enable systems to be linked together within and across organizations and national boundaries (Menziez, 1993). According to the authors, some SMEs already implement the ICT in their organization but the problem is the organization did not fully utilize it and some of the employees are lack of the knowledge about the ICT. In this case,

knowledge-based development plays an important role to develop the employee knowledge so that company can gain the competitive advantage.

R.P. uit Beijerse (2000) discussed the changing in society, economy, and company life. Societies are always changing because of people are always changing and keep developing. Technological and scientific developments are essential conditions for the knowledge economy which including information and communications technology (ICT), networks, international competition and knowledge intensive products. Most companies are focus on skills, quality and image of the products and services. Besides that author also defined three facet of knowledge which are capacity, information, and attitude. Author propose nice knowledge streams in knowledge management, they are share knowledge, utilize knowledge, evaluate knowledge, necessary knowledge, available knowledge, knowledge gap, develop knowledge, and acquire knowledge. Focus on knowledge development, based on the different between the essential and available knowledge, actually we can develop the knowledge by ourselves. Developing knowledge we can be done through research and development (R&D), or through education and training.

Ahmad Raza, A. Rashid Kausar and David Paul (2006) defined the successful application of the knowledge-based development strategy is closely related to the ecological, the cultural, the economic and the ethical pluralities of the human communities. Knowledge-based development interrelated between human begins and the information and communication technology. The context of KBD is to improve and develop human well-being and to enable human beings to achieve their potential (Wilfred, 1997). Organization culture can influence the worker performance directly.

According to the Anabela Sarmentoo and Ana Maria Correia (2003) stated that to achieve knowledge-based society where innovation and competitiveness are the goals to attain. From the organization theory point of view, knowledge management is not the management of resources but of the context where knowledge is used. Knowledge management also perceived as a capacity, which allows SMEs to develop, to innovate and to gain the competitive advantage. Authors proposed six areas must be focus in order to acquisition of knowledge management skills and competences. The six areas are knowledge resources, KM system, organization knowledge, organizational context and culture, intellectual capital, and innovation management.

Kuan Y. W. and Aspinwall E. (2004) discussed knowledge can propel organization to become more innovative, intelligent, adaptive and sustainable if the knowledge able to harnessed and leveraged. Authors also mentioned that KM “push” and “pull” perspective can improve performance of organization. Through the KM system, small firms able to capture customers’ knowledge in areas related to their needs or preferences of the products and services. Implementing KM enable SMEs have a simple and less complex structure, by the way shorten the communication line. On the other hand, small firms possess weaknesses in terms of learning because most small firms will rely more on informal rather than formal learning programs due to their lack of resources. Authors stated that SMEs have less resources and capacity to build and maintain a knowledge repository. SMEs have limited knowledge about computer and technology but also lack of highly educated and experienced employees or expert professionals to initiate such program.

Ganesh D. Bhatt (2000) discussed about the knowledge development cycle which content the knowledge adoption, knowledge creation, knowledge review and revision, and knowledge distribution. Author also discussed several of organizing strategies which implement in each of the knowledge development cycle phase. In the knowledge creation phase, organization able to learn from uncertainty, instability, and randomness through conduct the planned and unplanned experiments. By the way, in the knowledge adoption phase, an organization should acquire and standardize specific knowledge objects, practices, and processes. In the knowledge distribution, all employees should have equal opportunity to access, share, and retrieve the knowledge within the organization. In the knowledge review and revision phase, organization should promote various and diverse views to offer sufficient avenues for learning.

Sebastiao Darlan Mendonca Ferreira and Marcos Neto (2005) explored the cognitive dimension of development is thinking of development as a social learning process that contributes to people taking explicit control of their own development experiences and through the experiences autonomously to solve their problems, so that they can able to solve the same problem in the future. Authors encourage people to share knowledge and stated that knowledge is a public good because once it spreads in society, it has no private owner and everyone is free to use it. Authors also suggested social learning approach like externalization (tacit knowledge can be transformed into explicit expressions for diffusion and future use in knowledge development.

SMEs face many challenges in competitive environment and KM centre is seen as a method to encounter the difficulty. Capturing new knowledge often viewed as critical in defining the capacity for interpreting and absorbing the new information provided by internal employees to create new knowledge. New knowledge often created when there are innovation, creativity and strategy being implemented on products, services and processes (Gray, 2006). According to (Carneiro, 2000), knowledge management indeed contributes to the formulation of competitive strategies. It is said that managers make decisions guided by key resources from KM which employees shared their knowledge in databases. If SMEs in fact combine innovation efforts, ICT, and knowledge development competitiveness can be achieved and well managed method would provide enterprises competitive strategies in integrating new innovation products and technological weapons to face their competitors.

Chen et al. (2006) stress the importance of external knowledge about customers, suppliers and competitors. Knowledge centre will act like a platform in storing this kind of information. From time to time, information will be updated based on results and solutions regarding all stakeholders for future references. Research done by the authors also found that interviewees believe knowledge can establish good relationship with suppliers which in turn assist them in serving their customers better and meeting their needs. Dvir and Pasher (2004) relate knowledge development centre as foundation to innovation for SMEs. It will be like a hub to gather new knowledge which will be utilized for better innovation. Effective treatment of organizational knowledge resources such as experience, expertise, best practices, lesson learned and others is part of innovation ecology.

Dawson (2000) however insists that knowledge centre will create value to customers or clients for SMEs. Value which is commonly known is better prices but in the higher level, knowledge management perhaps create value through the direct application of knowledge in making customers more knowledgeable. This will become an increasingly important source of customer value as knowledge becomes more central to economic value, and the differentiation provided by other sources erodes. Parker et al. (2005) say that knowledge centre as a library would work for SMEs. Due to the fact that small businesses might not have the financial, personnel and technical strengths to implement the KM system, therefore an opportunity exists for local public and university libraries to provide a service to fill the gap that is developing as a

result of digital age and the need of small businesses for more information and intelligence.

Small and medium-sized (SMEs) enterprises are a vital and growing part of any national economies. In common with most large businesses, SMEs have recognized the importance of knowledge management. The basic research framework is the knowledge process model from Probst/ Raub/ Romhardt (1999) with its eight building blocks. Kerstin Fink and Christian Ploder conducted empirical studies that show for SMEs only four knowledge processes of the building block approach are important. The four knowledge processes are knowledge identification, knowledge acquisition, knowledge distribution and knowledge preservation. Knowledge identification is the process where external knowledge for analyzing and describing the company's knowledge environment is identified. In SMEs it is highly important to identify the key sources of knowledge, experience and know-how in order to stay competitive in the market. Knowledge acquisition refers to what forms of expertise should the company acquire from outside through relationship with customers, suppliers, competitors and partners in co-operative ventures. Another authors, Lorraine Uhlaner, Andre Van Stel, Joris Meijaard and Mickey Folkeringa (2007) agreed with this as in their article they discuss about the knowledge processes where there are a knowledge acquisition phase, in which the organization obtains knowledge both internally and externally, including, for example, hiring new employees, strategic alliances, or going to presentations or seminars. The know-how of SMEs resides in many cases in the head of the experts or knowledge worker. H. Zhou, S.Y.G.L. Tan and L. Uhlaner (2007) also support this statement by saying that knowledge management encompasses not only the related notions of knowledge transfer and knowledge sharing, but also the entire knowledge acquisition and utilization process, beginning with locating and capturing knowledge, and followed by the enabling of that knowledge within the firm. Knowledge distribution is the process of sharing and spreading knowledge which is already present within the organization. Especially in SMEs which are determined by smaller groups, a knowledge sharing culture to facilitate the exchange of knowledge to other groups is highly important and should be utilized by knowledge tools and mechanisms. Knowledge preservation is the process where the selective retention of information, documents and experience required by management takes place.

Rodney McAdam and Renee Reid (2001), has come out with a different set of knowledge management process which are Intellectual Capital models,

Knowledge Category models and Social Constructed models. For Social Constructed models they have divided into four key dimension of knowledge management. First is construction of knowledge within the organization. This construction is not limited to scientific inputs, but it seen as including the social construction of knowledge. Second, the model assumes that constructed knowledge is then embodied within the organization, not just through explicit programs but through a process of social interchange. Third, following embodiment there is a process of dissemination of the espoused knowledge throughout the organization and its environment. Fourth, the knowledge is seen as being of economic use in regard to organization outputs.

Kevin C. Desouza and Yukika Awazu (2006) discuss peculiarities about knowledge management practices at SMEs. First is the dominance of socialization in the SECI cycle as Nonaka and colleagues developed the knowledge creating cycle comprising of four activities that are socialization, externalization, combination and internalization. Socialization helps move knowledge in tacit from between individuals, externalization is the application of tacit insights on an outside entity, combination represents the act of synthesizing explicit pieces of knowledge, and finally internalization is the process whereby one increases their knowledge by learning from external events. The second peculiar finding is the issue of “common knowledge”. Common knowledge, as we define it here, is knowledge that is known to all members of the organization. Exploitation of external sources of knowledge is another peculiarity. SMEs have a knack for exploiting foreign sources of knowledge. Since they are resources constrained, and cannot spend efforts to create knowledge, they look outside the organization for knowledge. Lastly, SME’s knowingly or unknowingly, manage the knowledge the right way.

In implementing knowledge management process, SMEs faced a few challenges. Charles O. Egbu, Subashini Hari and Suresh H. Renukappa (2005) defined knowledge management as a process by which knowledge is identified, created, codified, stored, disseminated, implemented and measured for the benefit of an organization. The first challenge faced by SMEs was in identifying accurately what knowledge was useful and where to get appropriate knowledge. In SMEs, the attempts made to transform tacit knowledge into explicit knowledge have, in the main, been unsuccessful. The ability to survive and thrive relies, to some extent, on an organization’s ability to maintain and retain old and new knowledge in the face of complexity, uncertainty and rapid change. Storing of knowledge is an important

challenge for SMEs. Converting tacit into explicit knowledge and sharing such knowledge is essential in an organization with scarce resources. Knowledge mapping also had a barriers related to how the individual uses knowledge and how organization manage the co-ordination of knowledge between individuals and the organizations. Knowledge dissemination is also a challenge such as lack of time, lack of communication skills and rapid change in Information and Communication Technologies. The last challenges faced by SMEs are knowledge creation.

Lorraine Uhlaner, Andre Van Stel, Joris Meijaard and Mickey Folkeringa (2007) in their article came out with a hypothesis that for SMEs which rely upon knowledge processes to acquire and distribute knowledge for the firm and which report knowledge output via various innovation indicators are likely to grow more quickly than those firms not using such processes.

### Research Methodology

This study was conducted on small and medium (SME) companies in Malaysia. In order to identify the entitled companies, this survey adopts based on Bank Negara Malaysia’s definition of SMEs; for wider coverage and applicability, definitions of SMEs will be based on number of employees and annual sales turnover. Therefore, an enterprise will be classified as an SME if it meets either the specified number of employees or annual sales turnover definition.

#### *Definitions for Small and Medium Enterprises in Malaysia*

The definitions will apply for the following sectors:

- 1. Primary Agriculture;** a small and medium enterprise in primary agriculture is an enterprise with full-time employees not exceeding 50 or annual sales turnover not exceeding RM5 million.
- 2. Manufacturing (including agro-based);** a small and medium enterprise in manufacturing (including agro-based) and MRS is an enterprise with full-time employees not exceeding 150 or with annual sales turnover not exceeding RM25 million.
- 3. Manufacturing-Related Services (MRS);** a small and medium enterprise in manufacturing (including agro-based) and MRS is an enterprise with full-time employees not exceeding 150 or with annual sales turnover not exceeding RM25 million.
- 4. Services (including Information and Communications Technology);** a small and medium enterprise in services is an enterprise with full-time

employees not exceeding 50 or annual sales turnover not exceeding RM5 million.

The targeted respondents who are the owners or key managers were contacted and the nature of the study was explained to them. The owners and key managers are targeted because they own or oversee the operations of their respective organizations. A visit is then made to the consented companies to distribute the questionnaires to the owners or key managers. Some of the questionnaires were distributed directly to the owners, while some of the questionnaires were given to the assistance to the owners or key managers due to their unavailability at that particular time. About 114 usable responses were collected. The response rate can be consider a tolerable rate and adequate to offer grounds for establishing reliability and generality of the findings.

Collection of data from various sources, using the search engine: [www.Google.com](http://www.Google.com) to find journal and articles about Knowledge Management and Knowledge Development Center. Journal includes information on Knowledge Management Application, Knowledge Development Center activities and Knowledge Management issues.

#### *Survey instrument: Questionnaire*

This study was carried out using a set of questionnaire. The purposes of the research are to measure success factors of SMEs from adopting knowledge development in business and to collect general information about knowledge development in SMEs. Parallel with the objectives of this research, the questionnaire was developed according to five sections. Section 1 consists of questions capturing the companies' demographic information, such as types of ownership, years of operation, whether the organizations is currently using internet connection or not. Section 2 consists of question about the assessment on company internet usage. Section 3 consists of question regarding knowledge development adoption factors including awareness of K-Development relative benefits, economic activities, human resource, financial resource, business result and imposition by trading partners. Section 4 consists of question on knowledge development adoption

Table 1 shows, that 47.3% are the manufacturing companies and the rest of 52.7% are the services companies. There is a significant relationship between k-development and type of industry (level of 0.087). This positive relationship implied that SMEs are well aware that implementing k-development system in their company does increase their company's revenues. There is a significant relationship between greater

planning. Lastly, section 5 asks about the benefits and barriers of knowledge development adoption. Section 3 to 5 use the five-point Likert scale, measuring from 1= strongly disagree to 5= strongly agree.

### **Data Analysis and findings**

#### *Hypotheses*

##### *1. Null Hypothesis:*

There is no relationship between awareness of knowledge development relative benefits and company background.

##### *Alternate Hypothesis:*

There is relationship between awareness of knowledge development relative benefits and company background.

##### *2. Null Hypothesis*

There is no relationship between actions that would be taken by the company and the various activities.

##### *Alternate Hypothesis*

There is relationship between actions that would be taken by the company and the various activities.

##### *3. Null Hypothesis*

There is no relationship between benefits of knowledge development adoption and company's return on investment.

##### *Alternate Hypothesis*

There is relationship between benefits of knowledge development adoption and company's return on investment.

##### *4. Null Hypothesis*

There is no relationship between barriers of knowledge development adoption and usage of internet.

##### *Alternate Hypothesis*

There is relationship between barriers of knowledge development adoption and usage of internet.

satisfying the customers and the type of industry at the significant level of 0.084. The positive relationship implied that SMEs are aware that k-development system increases the customer satisfaction while doing business with them. Furthermore, there is a significant relationship between k-development reduces company's cost and the type of industry at the level of 0.068 The positive relationship shows that SMEs are



well aware that by developing the k-development, it reduces the company's cost.

As shown in table 2 the highest type of activities conducted through internet based system are e-mail (60.9 percent) and seeking information (53.6 percent). The lowest types of activities conducted through internet based system are advertising (45.5 percent), public relation (10.9 percent), and direct marketing (10.9 percent). There is a significant relationship between online orders for customers and selling activity at the significant level of 0.01, which is 0.404. This positive relationship implied that the higher the level of selling activity, the higher the company places online orders for customers. And also there is a significant relationship between e-mail usage, customer service and support activity at the significant level of 0.01, which is 0.444. Many SMEs were willing to provide their quality customer services through their webpage and direct links of contact. The study shows there is significant relationship between companies has their own website and advertising activity at the significant level of 0.05, which is 0.373.

Based on the hypothesis test that has been made, there is relationship between benefits of knowledge development adoption and company's return on investment. (Table 3)

Table 4 shows that 75.5% of them are currently using Internet based system to support their business while the remaining of 24.5 % still do not use Internet based system for their business purpose activities. Based on the table 8, it can be derived that the value of a 95% confidence interval of difference in both upper and lower categories are between a rate of 3.09 up to 3.70 which is assumed to be at a constant rate despite the having a varied value.

Studies show that, there are nine different correlations that were collected from the survey. This includes using the internet, unsuitability for business; unavailability of KD qualified personnel, company network, cost, software price, imbalance investment, uncertainty of laws and security issue. Study shows the correlations between using internet and with the

other correlations does not have much significance difference in value, where much of the values are at a constant rate.

From the studies can be concluded there is a significance differences between the barriers of k-development adoption and the internet usage in SMEs.

### Conclusion

In conclusion, the rapid changes occurring in terms of political, technological and economically should be viewed and changed over time to ensure the success of SMEs. Knowledge should be made use wisely to enable the small companies to survive and grow as it ensures future success. Framework should be develop based on the company process and investing in their human capital is a source of competitive advantage as gap between various factor can be identified easily thus making an informed decision. Knowledge development centre should be viewed seriously in terms of understanding its value and benefits that will be beneficial to the organization to carry out its activity in an effective manner despite cost being the main issue. Continuous learning of personnel is very important as it will help the organization to be ahead in terms of critical information thus making the level of intellectual capital higher where knowledge needs to be shared and evolve over time for doing things efficiently. Besides that, many other critical success factors must be taken under consideration such as benchmarking and the need to change the culture from within the organization. Knowledge development will be a success if organization were to invest in human capital rather than focusing much on financial as it requires transfer of knowledge in any form. Despite obtaining interesting findings in this study, the limitations lie in the scope of this study which is limited to only small portion of SMEs in Malaysia. A wide range of samples from various industries is required for the generalizability of the results.

Table 1: Type of industry

Type of industry					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	service	58	52.7	52.7	52.7
	manufacturing	52	47.3	47.3	100
	Total	110	100	100	

Table 2: Various activities conduct through the Internet based system

Various Activites						
			Frequency	Percent	Valid Percent	Cumulative Percent
Buying	Valid	yes	33	30	30	30
		no	77	70	70	100
Procuring	Valid	yes	19	17.3	17.3	17.3
		no	91	82.7	82.7	100
E-mail	Valid	yes	67	60.9	60.9	60.9
		no	43	39.1	39.1	100
Seeking information	Valid	yes	59	53.6	53.6	53.6
		no	51	46.4	46.4	100
Selling	Valid	yes	38	34.5	34.5	34.5
		no	72	65.5	65.5	100
Distribution	Valid	yes	24	21.8	21.8	21.8
		no	86	78.2	78.2	100
Promotion	Valid	yes	43	39.1	39.1	39.1
		no	67	60.9	60.9	100
Direct Marketing	Valid	yes	12	10.9	10.9	10.9
		no	98	89.1	89.1	100
Advertising	Valid	yes	50	45.5	45.5	45.5
		no	60	54.5	54.5	100
Transaction	Valid	yes	19	17.3	17.3	17.3
		no	91	82.7	82.7	100
Public Relation	Valid	yes	12	10.9	10.9	10.9
		no	98	89.1	89.1	100
Customer service & support	Valid	yes	44	40	40	40
		no	66	60	60	100

Table 3: Return on Investment

Return on Investment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< RM 250K	27	24.5	25.7	25.7
	RM 250K -< RM 10M	16	14.5	15.2	41
	RM 10M - RM 25M	6	5.5	5.7	46.7
	< RM 200K	36	32.7	34.3	81
	RM 200M -< RM 1M	15	13.6	14.3	95.2
	RM 1M - RM 5M	5	4.5	4.8	100
	Total	105	95.5	100	
Missing	0	5	4.5		
Total		110	100		

Table 4: Using of Internet

Using of Internet					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	83	75.5	75.5	75.5
	no	27	24.5	24.5	100
	Total	110	100	100	

Table 5: One sample T-Test of awareness of knowledge development relative benefits

	Test Value = 0					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
KD reduces cost	45.324	109	0	3.5	3.35	3.65
KD greater satisfies customer	57.044	109	0	3.709	3.58	3.84
KD increases revenues	43.216	109	0	3.518	3.36	3.68
KD improve company's image	59.021	109	0	3.727	3.6	3.85
KD enables company to access new product	53.217	109	0	3.591	3.46	3.72
KD quickly and easy access competitor's info	49.93	109	0	3.664	3.52	3.81
KD helps employees to heed company's culture	42.049	109	0	3.464	3.3	3.63
KD enables networking easier and simpler	45.911	109	0	3.691	3.53	3.85

Table 6: One sample T-Test of actions that would be taken by the company

	Test Value = 0					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Uses e-mail with suppliers & distributors	13.667	109	0	2.136	1.83	2.45
Uses e-mail with customers	13.886	109	0	2.036	1.75	2.33
Has website	15.51	109	0	2.318	2.02	2.61
Website enables customers to place orders	18.368	109	0	2.982	2.66	3.3
Website for suppliers to view stock quantity	19.731	109	0	3.136	2.82	3.45
Places online orders to reduce time	20.34	109	0	3.173	2.86	3.48
Places online orders to customers	21.786	109	0	3.3	3	3.6
Places online orders to suppliers	23.219	109	0	3.327	3.04	3.61

Table 7: One sample T-Test of benefits of knowledge development adoption

	Test Value = 0					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Reduce cost and time	59.689	106	0	3.766	3.64	3.89
Increase speed and reliability	62.04	106	0	3.925	3.8	4.05
Reduce inefficiencies	46.783	107	0	3.75	3.59	3.91
Build closer relationships	51.932	107	0	3.87	3.72	4.02
Effective tool	52.261	106	0	3.869	3.72	4.02
Create business opportunities	58.22	106	0	3.907	3.77	4.04
Enhance access to market info	55.166	107	0	3.917	3.78	4.06
Facilitate new ways of manage business	48.367	107	0	3.713	3.56	3.87
Developwell plan, implement & monitor	47.149	107	0	3.741	3.58	3.9

Table 8: One sample T-Test of barriers of knowledge development adoption

	Test Value = 0					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Unsuitability for business	48.118	107	0	3.546	3.4	3.69
Unavailability of KD qualified personnel	44.395	107	0	3.407	3.26	3.56
Unavailability of company's network	38.992	107	0	3.259	3.09	3.42
High cost	31.672	107	0	3.333	3.12	3.54
Software prices are expensive	32.221	107	0	3.454	3.24	3.67
Imbalance investments	42.374	107	0	3.454	3.29	3.62
Uncertainties with the laws	39.521	107	0	3.315	3.15	3.48
Lack of confidence in security	43.373	107	0	3.537	3.38	3.7

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