

# The relationship of Intellectual Capital, Knowledge Sharing Process and Innovation on Malaysia SMEs' Performance

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*The majority of literature review on innovation, knowledge management and intellectual capital and social capital mainly focus on large organizations and not on SMEs even though, SMEs are dubbed as an important support for large organizations. SMEs are known for their lack of resources and capabilities but they are best venue for knowledge creation and creativity or innovation. Study shown that SMEs is also known for their capability as knowledge creator and innovator capabilities but it is not known whether SMEs are practicing knowledge sharing and what type of innovation takes place in SMEs. This study is to highlight the strengths of SMEs based on their existing resources. This study is to identify the elements of intellectual capital of SME and thus capitalizing the intellectual capital via knowledge sharing and innovation leading to higher performance.*

Field Research: Management, small and medium-sized enterprises, Malaysia

## 1. Introduction

Small and medium-sized *enterprises* (SMEs) have a reputation as boosters of employment, economic growth and economic *dynamics* (Keizer et al, 2002). According to the 2007 Central Bank Governor's keynote address, the *SME* sector has long been hailed as a key driver of the national economy; it contributes 32% to the national GDP of Malaysia (Low, 2007). Ninety-nine out of 100 Malaysian businesses are SMEs and almost 5.6 million Malaysians work in the SME sector (Low, 2007). Although the basics concepts and principles of KM are similar for small and large organizations; there is a difference of the value place on the systematic KM practices like formalized environmental scanning and computer based knowledge sharing systems (Lim & Klobas, 2000). Due to the lack of knowledge sharing systems, knowledge related to the organization's core competencies is held as tacit knowledge in the mind of key employees; therefore SMEs are very sensitive to the loss of employees( Keskin, 2005; Lim & Klobas, 2000).

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Globalization also had given SMEs an abundance of opportunities especially as a supplier and contractor to a large organization (Wang & Chang, 2006). All over the world, especially in United Kingdom and European countries, governments are giving special attention to developing and strengthening the capacity of the SMEs to increase their contribution to the economy (Oke et al., 2004). In 2007, Malaysian Government will be implementing a total of a 190 programmes, involving a financial commitment of RM3.7 billion to help SMEs build competitiveness and capabilities (Low, 2007). But having programme alone would not help SMEs to excel without a proper implementations or directions. Since SME is small and easy to manage, application of knowledge management and innovation would be much easier. Desouza & Awazu (2006) found that knowledge management in SMEs was not manage the way large organizations did but the practice should not be scaled down as SMEs have its own way to be creative around the limitations. One of SMEs contribution is their capability to realize innovation (Keizer et al, 2002). Most of researches done on knowledge management, particularly knowledge sharing (Huysman et al, 2002) and innovation are on large organization as they are seen as more structured and financially strong. Despite of that, many knowledge management practices fail in large organization and they are also fear of innovation because of risk. As SMEs are eager to adapt and adopt knowledge sharing practice (Mc Adam & Mc Creedy, 1993) and interested in innovation (Motwani et al, 1999), therefore there should be a model to suit SMEs based on their scarce resources, skills, expertise, culture and their environment. The special capabilities of organizations for creating and transferring knowledge are being identified as a central element of organizational advantage. There are scarce of literature review that focuses on knowledge sharing and innovation in SMEs. Even though, they have a lot of limitations, equip with a proper structure, system, technology and culture, right people to utilize and circulate their abundance knowledge, SMEs are capable in moving forward together with their large compatriots. Even though, most of literature discuss on constraint resources of SMEs but most of literature highlights on SMEs strength especially in terms of networking, creativity, resourceful and as knowledge creator. Therefore, based on these issues of SMEs, this research is proposing a framework that utilizes existing resources and expertise which is an intellectual capital of SMEs in achieving their competitive advantages

## **2. Problem Statement**

SMEs provide an interesting setting as they are knowledge generators but are poor at knowledge exploitation (Levy et al, 2003). In organizations like SMEs in which an individual's knowledge becomes his or her primary source of value to the firm, sharing this knowledge might potentially result in diminishing the value

of the individual, creating a reluctance to engage in knowledge sharing activities (Alvesson 1993, Empson 2001 in Ipe, 2003)). In addition, when employee leaves the organization, they take with them tacit knowledge and in some cases explicit knowledge it has not been codified effectively (Lehaney, 2003). All SMEs, knowingly or unknowingly, manage their knowledge (Desouze & Awazu, 2006). Comparing to large organizations, SMEs are the best venue to deploy and implement knowledge management. In doing that, SMEs must emphasize on its business strategy, structure, culture and systems (Beijerse, 2000). Even though SMEs lack of certain resources especially technology in developing knowledge management systems but SMEs are more efficient due to these resource constraints (Ghobadian & Gallea, 1996: in Rodney, 2001). Most of authors agreed that SMEs tend to provide an environment that is conducive to generating knowledge due to their size, single site location, closer social relationship of employees, flatter and less bureaucratic structure and the opportunity for innovative culture set by the owner. Further more, SMEs have informal cultures motivating to encourage more effective collaborations in many ways. Davenport and Binny (1999, in Humphreys et al (2005) stated that SMEs increasingly need to develop their innovation capabilities beyond that of technical innovation. Further more, with the support of government; SMEs can embark on incremental innovation which eventually leads them to radical innovation whenever they are ready. SMEs managers need to focus not only on products, technology and processes but also on culture, norms, values and beliefs which is important for SMEs which have close-knit circle (Gunasekaran et al 1996 in Humphreys et al, 2005). Studies have shown that SMEs contributed to the main innovation of the twentieth century (Oakey, et al 1988; Rothwell and Zegveld, 1982; Rothwell, 1994 in Scozzi and Garavelli, 2005). More than that, innovation in SMEs can be more efficient and effective (Vossen, 1998 in Scozzi and Garavelli, 2005). However, many literatures highlighted the obstacles face by SMEs in innovation such as lack of financial resources, inadequacy of management and marketing, lack of skilled workers, weakness in external information and linkages, and difficulty in coping with government regulations. Although many SMEs in incremental innovation (Lin & Chen 2007), many small companies also succeeded in introducing more radical innovations because of their genetic makeup (Stringer, 2000). Measurement of knowledge sharing or innovation in large organization and SMEs should not be the same as they have different resources, system, structure, strategy and people. While, many literature review discussed on the obstacles and opportunities that SME could be benefit from intellectual, innovation and knowledge sharing but there is no research being done in identifying intellectual capital in SME especially on how intellectual capital lead to innovation and how intellectual capital being capitalize through knowledge sharing for higher performance in SME. As SME is said to be a good platform for knowledge sharing and innovation, therefore it is important to have a framework that suit SMEs by utilizing its intellectual capital.

### **3. Literature Review**

#### **Intellectual capital**

Knowledge is a link between social capital and intellectual capital (Nahapiet & Ghosal, 1998). Intellectual capital is a sum of human capital, structural capital and relational capital. Human capital refers to the value of knowledge, skills and experiences held by individual employees in a firm; structural capital consists of "embodiment, empowerment and supportive infrastructure of human capital" (Edvinsson & Malone, 1997) which includes all the things that support human capital in a firm but which are left behind when employees go home at the end of the day (Mc Elroy, 2002). Relational capital embraces all the relations the firm has established with its stakeholder groups such as customers, suppliers, community, and government (Bontis, 2000). Trust, reciprocity, shared values, networking and norms are all under structural capital that adds value to firm by speeding the transfer of information and development of new knowledge (Mc Elroy, 2002). Dimensions of intellectual capital are divided between type of knowledge and level of analysis in knowledge and knowing. Intellectual capital is multifaceted and the outcome would be depending on what is the goal of the research. The goal of this intellectual capital model is to achieve a multiplicative effect in order to enhance rapid knowledge sharing and develop new business applications and this to be facilitated by the right company culture, leadership and infrastructure (Skandia, 1996a).

#### **Intellectual capital in SMEs**

According to Desouza and Awazu (2006) the organizational capital in SMEs is primarily developed and maintained by means of its employees. Even though, there is lacking of knowledge repositories maintained by owner, knowledge is created, shared, transferred and applied through the organization's members without the intervention of automated mechanisms usually found in larger firms. On top of that, employees develop common knowledge so as to better organize works (Cohen & Kaimenakis, 2007). From the perspective relational capital, SMEs acquire more knowledge from their customers because of its close proximity (Wong & Aspinwall, 2004) and able to develop their relational capital with greater ease and use the available knowledge from their associations or membership more readily in order to achieve higher performance (Desouza & Awazu, 2006). Bontis (1998) in his study of intellectual capital in Malaysia, found that intellectual capital domains affects performance. Montequin et al. (2006) proposed an integrated framework for intellectual capital measurement and knowledge management implementation in small and medium-sized enterprises. However, Montequin et al (2006) didn't measure it against performance. Cohen & Kaimenakis (2007) had carried out a research on intellectual capital on knowledge intensive SMEs but only to find structural and

customer capital link to performance even though human capital is said to be the most important capital in a firm.

## **Innovation**

Innovation models and innovation structures take different shape in different cultures (Pohlmann, 2005). Leadership is important in innovation culture (Ahmed, 1998). It is the task of organizational leaders to provide the culture and climate that nurtures and acknowledged innovation at every level (Ahmed, 1998). This particularly important for SMEs as owner should lead and encourage, nurture innovation culture of SME ( Avlonitis & Salavou, 2007). According to Edwards, surprisingly few studies examine the embeddedness of innovation in SMEs (Oakey 1993, Shaw 1998, Panniccia 1998, Freel 2000, Jensen and Greeve 2002) which shown that SMEs capable in engaging in innovation in developing its competitive edge. Traditionally, SMEs demonstrated poor ability in innovating products and processes (Caputo et al. 2002). However, based on several cases of European Union study showed that SMEs appear to be favored in innovation (Caputo et al, 2002). Most of the innovation studies are focused on large organization which cannot be assumes is transferable to SMEs (Humphreys et al., 2005). Motwani et al (1999) explored the management of innovations in French SMEs and found that both the way of managing and the structure that supports innovation are important to innovation in both product and processes (Abbot et al, 2006). SMEs vary in their interest and approach to innovation because of differences in their sources of capital (Susman et al., 2006; Hadjimanolis, 2000). The type of innovation that SMEs pursue also depends on whether their industry is emerging (where radical innovation is more likely) or is mature (where incremental innovation is more likely) (Nooteboom, 1994). The innovation in products, processes or services of varying type and degree can be appropriate for different SMEs in different industry sectors or product life cycle stages (Susman, et al.2006) and product innovation is more importance for small firms (Damanpour, 1996). Avermaete et al. (2003) found that there is a significant relationship between product innovation and process innovation in small company. This further supported by Schmidt (1990) to the large extent that process innovations are connected to product innovations, and even being preponderated in many SMEs. Innovation has demonstrated a strong and an influential relationship with SMEs performance (Wolff & Pett, 2006). Therefore, there is a need for studies on how innovation is implemented within the constraints and characteristics of SMEs (Humphreys et al., 2005).

## **Knowledge sharing**

Desouza & Awazu (2006) found that SMEs have been practicing knowledge management either knowingly or unknowingly. SMEs dominating socialization of the SECI model by Nonaka & Takeuchi (1999), make their communication level is very efficient that lead to deep and broad common knowledge

possessed by its employee. On top of that, their knowledge transfer is faster. Since SMEs are constraint of resource especially knowledge, they are creative in exploiting knowledge from outside (Desouza & Awazu, 2006). SMEs are always assumed a universal model of innovation that involves a linear process when knowledge is easily and readily exchanged (Edwards, 2007). Beside that, SME were powerful as they controlled access to and transfer of knowledge and their methods were simple but effective (Lim & Klobas, 2000). Maravelakis et al. (2006) state that small and medium-sized enterprises (SMEs) have a shorter line of communication which makes them more flexible which give them more advantages in terms of sharing knowledge.

Tacit knowledge transfer is important in creating innovation in SMEs in rivalry. Due to lack of knowledge sharing systems, knowledge is related to an organization's core competencies is held as tacit knowledge in the minds of key employees; so SMEs are very sensitive to the loss of employees ( Lim & Klobas 2000) but this is argued by Desouza & Awazu (2006). If tacit knowledge remains the most important form of knowledge for organizational success, smaller organizations remain highly reliant on such knowledge (Lim & Klobas, 2000). Beside, size of the firm does not affect tacit knowledge transfer (Cavusgil et al 2003). Moreover, SMEs do not usually have the resources or expertise to exploit tacit knowledge in its most sophisticated for (Cavusgil et al 2003). Furthermore, there is no evidence to support that knowledge transfer to larger organization is much easier and faster. SMEs are good knowledge creator but poor knowledge retention (Levy et al, 2003). A study carried out by Humphreys et al.(2005) showed that learning was the weakest domain in SMEs. The study which was carried out for six years showed that knowledge management, particularly knowledge sharing lapsed in SMEs especially among employees. And the most significant hurdle of knowledge management or knowledge sharing in particular is organizational culture.

## **Intellectual capital and innovation**

Bontis (2000) found that in non-service industry have a better capability for transforming individual employee knowledge into non-human knowledge, in short, much of intellectual capital in non-service industries is absorbed in the large capital outlays ( i.e machinery and equipment) found in construction and other manufacturing-intensive industries. Human capital has no direct impact on performance but has impact on other capitals which in turn affect performance. Innovation capital has indirect affect on performance. Intellectual capital which consists of human capital, structural capital and relational capital will affect performance indirectly (Wang & Chang, 2006) which is through another process which is innovation capital as proven by Jin Chen (2004). Innovation is the use of new technological and market knowledge to offer new product or service that customer wants (Afuah, 2003). Nooteboom (1994) claims that the concept of tacit knowledge which is embedded in the human capital is an important context of an innovation. Innovative organizations rely on multiple sources for ideas.

Knowledge and skills forms the basis of competence to innovate (Tang, 1999). Cavusgil et al. (2003) state that innovation is depends on knowledge where firms that create and use knowledge rapidly and effectively are able to innovate faster and more successfully than those that do not. Based on research of few successful organizations, he found out that tacit knowledge transfer boost innovation as tacit knowledge is difficult to transfer and deploy across borders than explicit knowledge and would be likely rare for competitors to replicate or imitate.

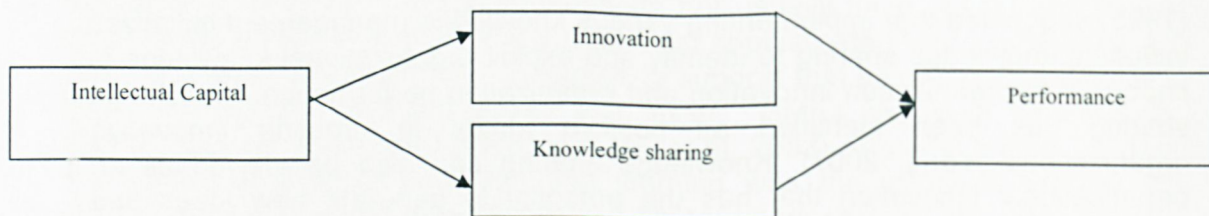
## **Intellectual capital and knowledge sharing**

Knowledge is an important asset in intellectual capital. But the existence alone does not help the organization without properly utilized it. Therefore, it is important to activate knowledge sharing activity in order to transfer and share tacit knowledge in the organization. Darroch & McNaughton (2002) identified that knowledge sharing can be viewed as an organizational innovation that has the potential to generate new ideas and develop new business opportunities through socialization and learning process of knowledge. Interaction between individuals is essential in the innovation process (Gold et al., 2001). Darroch (1995) suggested that implementing various knowledge management initiatives including knowledge sharing to identify and exploit organizational knowledge is important to organization innovation and organization performance. Knowledge sharing has been identified as positive forces in creating innovative organizations (Yang, 2007). Knowledge sharing can also be viewed as an organizational innovation that has the potential to generate new ideas and develop new business opportunities through socialization and learning process of knowledge workers (Lin, 2006). Innovative firms develop new products through creating and sharing knowledge (Koskinen, 2005). Beside that, generative innovative ideas relies on knowledge of existing artifacts and practices (Ward et al 1999). Knowledge sharing has been identified as positive force in creating innovative organizations especially when there are more positive social interaction culture (Connelly & Kelloway, 2003; Yang, 2007). The process of innovation depends heavily on knowledge (Gloet & Terzioski, 2004) therefore knowledge sharing is important in innovation in SMEs. By developing this framework, in terms of perspectives on knowledge centered principles, knowledge sharing infrastructures and knowledge based initiatives; the objective is to focus on how organizations could better fulfill their roles in these strategic areas. The role of information technology, even though vary depending on resource constraints, in knowledge sharing process is important especially to promote a flourish of innovations.

## Intellectual Capital, knowledge sharing and Innovation, Organizational Performance

Intellectual capital is a basic capital for the organization especially SMEs. But this intellectual capital needs to be mobilizing in promoting higher performance which is through innovation and knowledge sharing. Innovation is a resource-dependent and based on the development of social system (Pohlmann, 2005) and intellectual capital is the main source of innovation. While knowledge management is aimed to improve the share and exchange capabilities of organizational knowledge so as to compile an exert wisdoms with collective effort. Therefore the importance of having knowledge management is knowledge to be shared among employee in making knowledge as their precious internal resources. Results based on research of application of intellectual capital ( Jin Chen, 2004; Wang & Chang, 2006, Bontis, 2000) found that intellectual capital need a medium to influencing performance which is through innovation and knowledge sharing.

### Conceptual Framework



Based on the discussion above, researchers would like to present the framework for this study. As mentioned earlier, most of study did not integrate intellectual capital, innovation and knowledge sharing; this study would like to explore the relationship of intellectual capital, innovation and knowledge sharing on SME performance.

### 4. Research Methodology

This paper is a part of on-going PhD research on SMEs, focusing on intellectual capital thru innovation and knowledge in manufacturing. The unit analysis would be SME. Researchers plan to distribute questionnaire to SME of manufacturing as listed in the government's database. Questionnaire would be distributed by mail to manager or owner of SMEs in Malaysia.



## 5. Conclusion

This new framework would give new insights to SMEs in capitalizing their intellectual capital for a better performance. Regardless of their geographical locations, SMEs need to find a new way how to survive and to be competitive in emerging of globalization. Organic structure and culture of SME may foster knowledge innovation; many structural features suggest they are unable to obtain sustainable competitive advantage from that innovation. The owner-manager attitude of SME is paramount. The fact that most of the knowledge shared by SMEs is explicit suggests that some management of the sharing process is the hands of the SMEs (Levy et al, 2003). Many researchers (Calvert et al 1996, Hofstede 1991, Janssens et al 1995, Nejad 1997, Porter 1990, Nejad 1988) suggest that using the findings of innovation studies in advanced countries to explain innovative behavior in less developed countries is likely to be inappropriate. This new finding would help SME to look further in their internal resources in maximizing their performance via innovation and knowledge sharing.

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