

How Does Knowledge Management Matter in Enterprise Strategic Flexibility?

Multiple Case Study Approach Based on SMEs in Malaysia

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Abstract

SMEs domestically and globally are encountering tough competition. Globalization, liberalization, information revolution and ICT phenomena have brought about many challenges for all organizations more seriously for SMEs. The only way to cope with these impediments is to be strategically flexible and adaptable to environmental changes and emergent circumstances. Strategic Flexibility requires a comprehensive set of abilities to acquire, interpret, share and utilize knowledge by scanning internal and external environments carefully and profoundly in order to take immediate and proper actions. Therefore managing knowledge is an inseparable component of strategic flexibility. An integrated system has to be executed to strategize all enterprise activities based on knowledge toward becoming flexible strategically. But in enterprise's management literature a dearth of an intensive study in the context of SMEs is vividly felt. Therefore, addressing this gap seems worthwhile for SME's competitiveness; hence, the main objective of this study is to fill the gap empirically based on case-study of some service provider and manufacturing SMEs in Malaysia. Research is concluded with discussion and expressing limitations.

Keywords: Strategic Flexibility, Knowledge Management, SME, Competitiveness

1. Introduction

The business environment is increasingly becoming unpredictable and unsure. Businesses are being pressurized as a result of competition globally (Watson et al. 1997, Ness, 2005), increased complexity, economic uncertainty (Kanungo et al. 1999, Ness, 2005), and a more dynamic marketplace and changing business environment (Brown 2004). Furthermore, the rapid technological revolution and significant trends in globalization present many challenges for firms in this competitive landscape (Hit et al. 1998). For being competitive and dealing with these changes properly, companies impose different policies and strategies. For example, Some

rely on their Competencies to sustain their success (Hamel and Valikangass 2003) such as ; having loyal customers , strong brand name , production efficiencies and so on . These features worked extremely well in the relatively stable circumstances ,But in the wake of today's evolving environment , these competencies are imitable for competitors or they become obsolete over time and so they can not guarantee the success of the company (Hamel and Valikangass 2003). Furthermore, in this highly uncertain market, companies do not have luxurious time to wait and learn from emerging market conditions (Kapasuwan et al. 2007).Indeed, in this changing environment, the enterprise's success relies on its adaptive capabilities (Volberda 1996, Levy and Powell 1998) .Therefore under these circumstances, firms must have flexibility in configuration, reconfiguration and in implementing strategies to become competitive (Bowman and Hurry, 1993; Courtney, Kirkland and Viguerie, 1997; Dickson, Farris and Verbeke, 2001; Evans, 1991; and Moorman and Miner, 1998, cited in Kapasuwan et al. 2007).Strategic flexibility is a capability and theoretically capabilities built upon resources through a systematic mechanism of interactions and utilization of resources (Hitt et al 2007) and since today's enterprises reside in knowledge economy; they are hardly trying to create competitive advantage by utilizing completely their resources. In this battle ground, one of the most important resources which has been extensively utilized is Knowledge and the capability to create, integrate and apply it to the development of sustainable competitive advantages defines the degree of competitiveness (Kogut, and Zander, 1992, Nonaka, 1994). For gaining more knowledge and increasing the depth and breadth of knowledge resources , firms should struggle to increase the efficiency of their knowledge resources(Senge,1990).This endeavor is only won by embracing of a strategic knowledge management system.

the components of strategic flexibility? What does it mean to be strategic flexible enterprise (SME)? And what is the relationship of strategic flexibility and enterprise knowledge management? Addressing these questions smoothens the flow of knowledge in this study and enhances understanding of research area

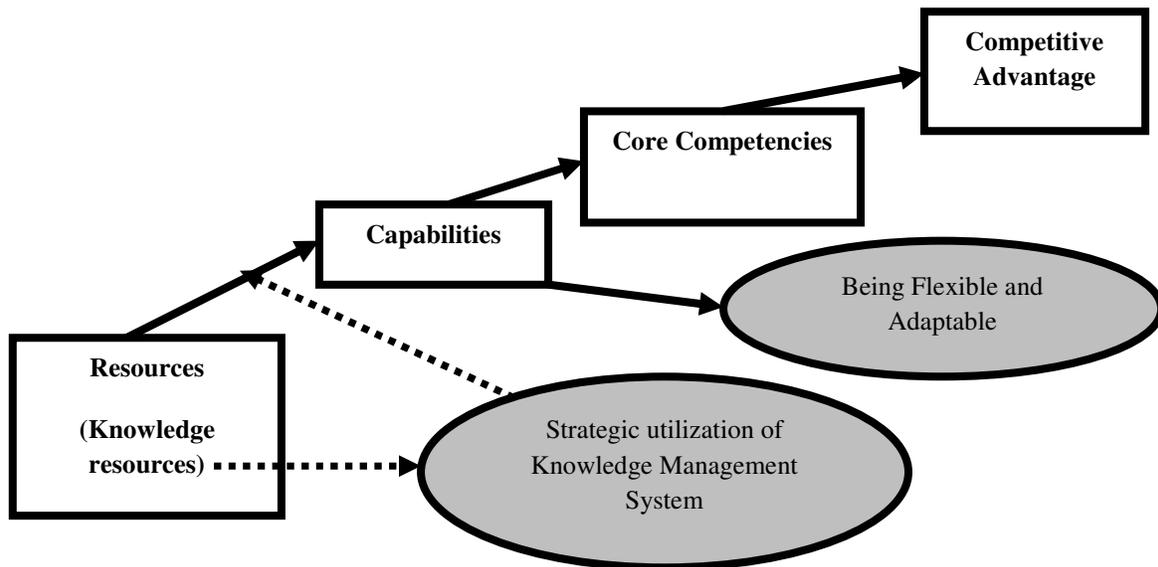


Figure1: From Resources to Competitive Advantage (Adapted and modified from Hitt et al 2007, pp72)

Undoubtedly, SMEs like the larger firms, have been exposed to the effects of developments in information, computing and communication technologies, these new technologies are two-sided blades; they can arguably provide both competitive opportunities and also threats for organizations (Ritchie and Brindley 2000).

On the other side, these medium and small size enterprises have potential to expand themselves globally and trade in global economy. Furthermore, SMEs' executives regardless of scope of their operation, find it more difficult to avoid the risks resulting from increased global competition (Ritchie and Brindley 2000). As we mentioned previously, technology revolution and globalization necessitated flexibility as a critical component for not only survival but also competitiveness of all enterprises irrespective of size and scope of operation. Hence, we can assert that inflexible enterprises in particular SMEs have been influenced more by this risky and unpredictable changing environment. Ritchie and Brindley (2000) supported this Notion by emphasizing that rapid and unpredictable changes are occurring for both large and small organizations. But some questions arise here: to what extent do Malaysian SMEs need strategic flexibility? What are

Therefore, next sections are devoted to answer these questions appropriately. Subsequently, some theoretical tables and graphs are drawn in order to felicitously deepen the conceptualization of theoretical findings. To find appropriate answers for these questions, first and foremost, a diagnostic analysis on Malaysian SMEs makes really sense because this analysis enables researches to come up with more effective studies covering competitiveness of Malaysian enterprises domestically and internationally. After that, in successive sections above questions are empirically addressed and findings are subsequently articulated.

2. Malaysian SMEs and Global Competitive Challenges

In a globalized business milieu with tough economic circumstances, Malaysia's commitment to become a regional and international trading power has metamorphosed the country's economic and industrial policies toward developing one of the world's growing exporters of electrical and electronic products. In this rapidly changing global economy, Small and Medium Enterprises (SMEs) are increasingly becoming a priority for national

economic growth (SMIDEC 2004). In this sense providing a safe ground for development of competitive SMEs is a crucial task for creating a thriving economy. The survey done by SMIDEC and UNDP (Ting, 2004, SMIDEC 2004, UNDP 2007) drew the attention toward this point that, Globalization and trade liberalization strategically pose two immediate challenges for SMEs. First, internet-technology and the information explosion have made knowledge as a vital source for survival of all organizations by being centered at the all stages of production. Second challenge was explored as the threats posed by the increasing number of business players. “a freer and more liberalized trading environment brings new players to picture, who alongside strongly entrenched existing ones, threaten traditional market shares” (SMIDEC 2004). But despite these competitive barriers, more integrated global market also has provided some uncontested opportunities and greater access to a broader marketplace. These benefits can be achieved by only those who are proactive and striving to outperform rivals by taking all dimensions into consideration (SMIDEC 2004, UNDP2007). However, the level of preparedness of SMEs to cope with these two challenges varies notably. Although the significance of SMEs in overall performance and also competitiveness of any economy is unquestionable but SMEs like other counterparts, in particular large organizations are encountering many competitive challenges and obstacles under Malaysia’s economic circumstances. The 2005 Census of Establishments and Enterprises indicates that 99 percent of 519,000 business establishments in Malaysia fell under small and medium enterprises. But Malaysian SMEs are still largely dependent on the domestic market and suffer from inability to cope with upcoming international challenges. Based on a survey in 2004 by Small and Medium Industries Development Corporation (SMIDEC) and National Productivity Corporation (NPC), SMEs are only exporting 26 per cent of their total output and their domestic market share is being challenged by the inflow of more competitive products from new emerging economies and other neighboring countries. Therefore conducting a diagnostic analysis on SMEs’ competitiveness in Malaysia makes strategic sense more than ever. This analysis has to be in line with challenges posed in knowledge economy’s environment. After this holistic view we found that technically, diagnostic study on competitiveness of SMEs has two sides, theoretical and practical. In the Malaysian context, SMEs have particular challenges domestically and internationally. These competitive challenges have been highlighted in many recent

studies (SMIDEC 2002, SMIDEC 2004, Ting 2004, UPS 2005, Saleh and Ndubisi 2006 and UNDP2007).

These challenges are synoptically listed as below:

1. intensified global competition
2. competition from other producers (for example; China and India)
3. limited capability to meet the challenges of market liberalization and globalization (adaptability)
4. limited capacity for technology management and development
5. low productivity and quality output
6. a shortage of skills and learning to enrich knowledge-based resources needed in the new business environment
7. A general lack of knowledge and information systems

Having considered these challenges, developing and executing proper strategies and programs to mitigate detrimental effects of these challenges on SMEs’ performance timely and felicitously, is an immediate action for executives and practitioners. Developing a flexible entity and embracing strategic knowledge management systematically can assist SMEs’ executives effectively in this endeavor.

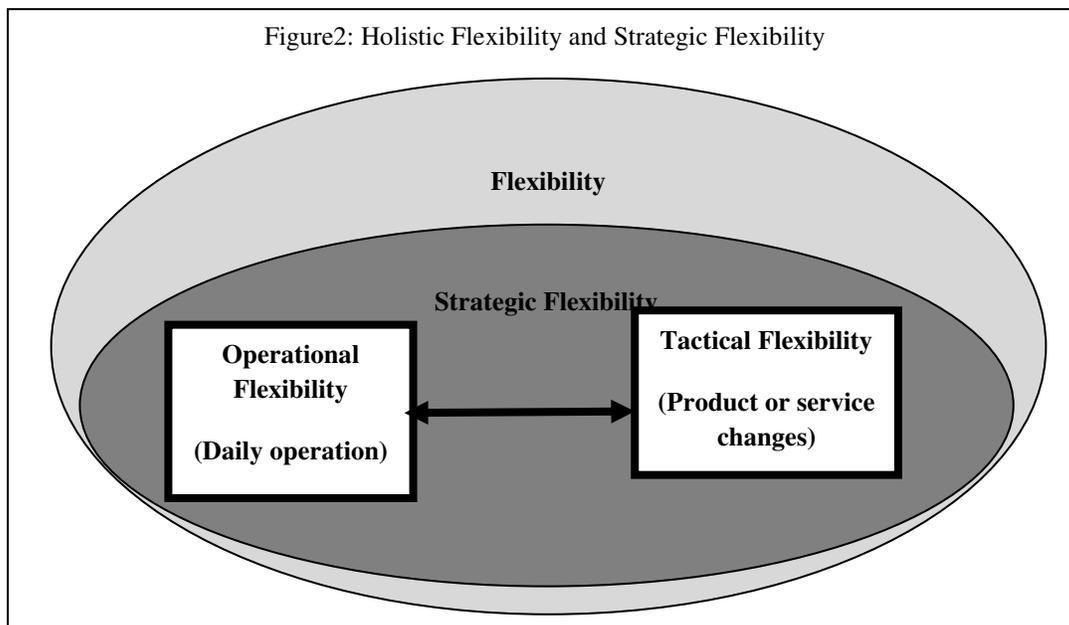
3. Flexibility versus Strategic Flexibility:

Although in the mass body of management literature especially strategic management discipline researchers have classified several aspects of flexibility, including operational flexibility, tactical flexibility, and strategic flexibility (Cannon and St. John, 2004; Carlsson, 1989; Johnson et al., 2003; Verdú-Jover, Lloréns-Montes and García-Morales, 2006, cited in Kapasuwan et al. 2007). Theoretically, operational flexibility deals with short-term operational actions , whereas tactical flexibility addresses product-mix (product design and so on). Strategic flexibility is more important among the other aspects of flexibility because it is a long-term perspective of flexibility which emphasizing a firm’s managerial capability to identify, generate and maintain real options in positioning itself in response to environmental changes and uncertainties (Bowman and Hurry, 1993; Evans, 1991; Johnson et al., 2003 , cited in Kapasuwan et al. 2007). Therefore ,it covers operational and tactical domains as well. According to aforementioned statements it can be easily interpreted that the most important attribute , firms must achieve to operate effectively in the new competitive landscape is strategic flexibility and its beneficial consequences (Hit et al. 1998). All organizations need to develop strategic flexibility in order to respond effectively to these changes speedily timely and properly. This will result in a sustainable

success in the 21st century (Hit et al. 1998). As Hamel and Valikangass (2003) described; companies should encompass the capacity to continuously anticipate environmental changes and adapt their actions before changes become obvious enough to affect their overall performance.

This capability signifies both short-run and long-run actions of the enterprise to understand environmental signals and trends and develop strategies to cope with them in a superior manner. Thus, strategic flexibility is a must for enterprises. Figure 2 clarifies the concept of flexibility and shows that strategic flexibility outweighs operational and tactical flexibility in today's tough circumstances, because it deals with strategy as well as effectiveness and efficiency.

competitive conditions. In fact, strategic flexibility represents firms' capability to realize and generate options and to position/reposition themselves in response to environmental changes in a reactive or proactive manner (Kapasuwan et al. 2007). In summary, theoretically strategic flexibility or resiliency can be seen as the enterprise's capability to mobilize its resources timely, quickly and properly (refer to figure1) in order to predict environmental challenges and trends and also respond competitively to environmental changes.



4.0 Definition of Strategic Flexibility and Its Components

There are many definitions on strategic flexibility. Hamel and Valikangass (2003) defined strategic flexibility in the new term as strategic resiliency: "the ability to dynamically reinvent business models and strategies as circumstances change". They also mentioned that strategic flexibility means; the ability to change before environmental changes can play an important role in the organizations' success. Shimizu and Hitt (2004) defined strategic flexibility as organization's capability to recognize the significant changes in the external environment and then commit resources in order to take appropriate actions timely and quickly. They believed that strategic flexibility is a way to develop and maintain competitive advantage by proacting or responding quickly to changing

This flexibility brings about many advantages for instance; ability to create and maintain competitive edges continuously in a superior way to outsmart rivals. Achievement of this capability first and foremost, requires a full understanding of business environment internally as well as externally in order to acquire information needed for developing resources and dynamic core competencies constantly and continuously. Due mainly to this fact that, capabilities are created through interactions and utilization of resources in a systematic way (Hitt et al 2007, pp 72-73) strategic flexibility necessitates a dynamic system consists of a subsystem to create core competencies based on knowledge resources, as well as a set of interrelated subsystems to develop human capital and new organizational structure by creation of a learning and innovative culture through dully and appropriately utilization and exploitation

of manufacturing and Information technologies (Hitt et al.1998). In addition, accordingly from this systematic process six components are derived as core elements of a system making organization flexible strategically. These six components are:

- 1) strategic leadership which has both direct and indirect influences on strategic flexibility through setting of vision, mission and mobilizing of resources toward competitive advantages and also creation of dynamic competencies , focusing and developing human capital and finally building new structures and cultures.
- 2) Dynamic core competencies, according to Hitt et al. (1998) “In turbulent and often chaotic environments firms need to develop and nurture a unique set of resources to build a competitive advantage. This unique set of resources is built into skills and capabilities, often referred to as core competences. The turbulent and changing nature of the environment suggests that these core competences cannot remain static. They must be continually evolving and developing. Therefore, firms must continue to invest in and upgrade their competences to create new strategic growth alternatives. Here the ability to reinvent these core competencies dynamically brings about strategic flexibility.
- 3) Development of human capital based on evolving strategic needs is an important ability makes firm flexible strategically. Enterprises normally gain this ability through outsourcing of human resource management, training policies to develop and upgrade knowledge workers and their abilities, skills and innovativeness and eventually using of contingency workers also helps firms to satisfy this strategic need and make themselves flexible (Hitt et al. 1998).
- 4) Technology usage is a core activity in strategic flexibility .Enterprises aiming to be flexible has to utilize a proper set of technologies mainly manufacturing and information technologies. Deploying of computer-integrated manufacturing (CIM), flexible manufacturing systems (FMS) and other operational systems bring the capability of being flexible and adaptable more than competitors and also show the way to outperform rivals. For SMEs, due mainly to lack of technical and financial abilities these components have been sidetracked and marginalized by executives. However, government incentives are needed to enable SMEs to reap the advantages of flexibility through utilization of technologies.
- 5) Engaging in valuable strategies makes firm flexible strategically. Here two sets of strategies are named by Hit et al (1998). First one is; Strategies to exploit

opportunities existing in global and international markets and second one are mainly cooperative strategies like strategic alliances and joint ventures which are designed and crafted to enrich enterprise’s capabilities and resources and also create cooperative competitive advantages in both domestic and international markets.

- 6) New organizational structures are needed to make an enterprise flexible strategically. Horizontal, flattened structures facilitate collaboration, coordination and innovativeness. Moreover, “A culture that values innovation, in addition to organizational learning, will increase the use of new technology and improve a firm's strategic flexibility” (Hit et al 1998). Therefore felicitous structure and culture are two vital elements of strategic flexibility.

To put everything in a nutshell, according to aforementioned issues, strategic flexibility requires six components or in better words, a strategic flexible system consists of six elements listed precisely as:

1. Strategic leader and leadership system
2. Dynamic core competencies
3. Skilled human resources and superior human capital
4. Full utilization of latest technologies
5. Engagement in valuable strategies (cooperative and global or international strategies)
6. Horizontal structures and promising cultures

These components and the mechanism of strategic flexibility is graphed as a simplistic illustration in figure 3.

In the next section we indicate some factors existing in enterprise’s internal and external environments influencing strategic flexibility. By linking above mentioned framework with these environmental factors scholars, practitioners and executives gain lucrative insights assisting them to simplify conceptualization of enterprise flexibility, understanding of its mechanism profoundly and subsequently developing and executing proper actions to make their respective enterprises flexible strategically.

5. Determinants of strategic Flexibility

Strategic flexibility systematically requires enterprise’s internal factors to be properly utilized and managed and then, this set of harmonized factors orchestrated and used to make competitive responses to external challenges. Thus, it is argued that, determinants of strategic flexibility are divided into two groups as external and internal components. This

dichotomous structure must be comprehensively understood by enterprises' executives.

Because it basically provides valuable insights into what strategic flexibility is all about. Some of these factors derived from literature survey are listed in table1. Having recognized these components, the importance of developing a system scanning environment and deciphering signals in the environment is a must for any enterprise aiming to become resilient and flexible strategically.

Figure3: Strategic Flexibility System Adapted and modified from (Hitt et al.1998)

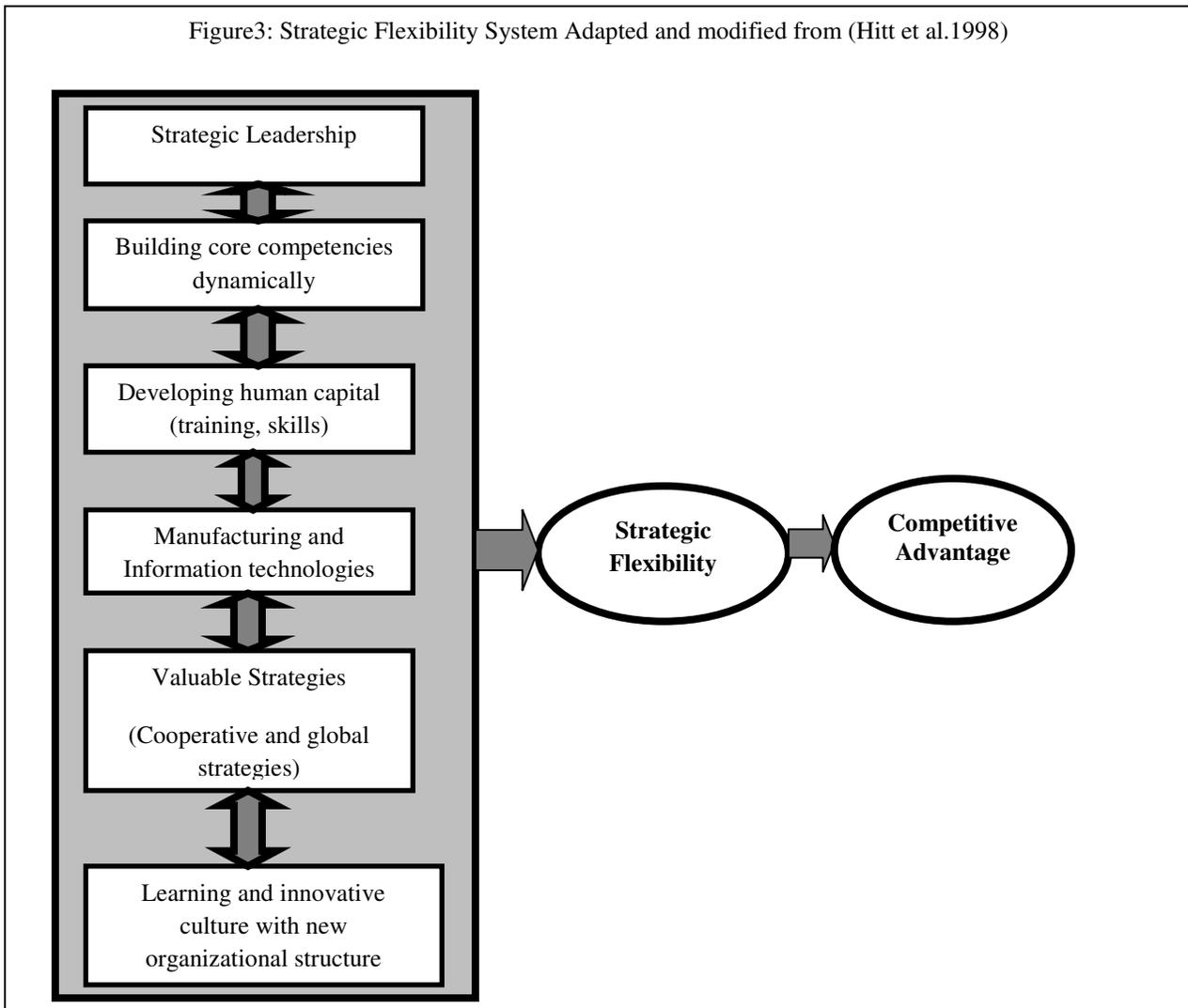


Table1: Flexibility Determinants

Internal Factors	External Factors
the effective use of organizational resources including IS, organizational culture and structure, product design and employee skills and experience requires to build strategic flexibility (Boynton, 1993; Sanchez, 1995; Upton, 1995; Lei et al., 1996; Hitt et al., 1998; Byrd, 2001 , Zhang 2005)	government policies create uncertainty that flexibility enables enterprise to benefit from these circumstance (Kogut 1985 cited in Pauwels and Matthyssens 2004)
Applying new technologies such as IT aid organizations to increase their flexibility(Upton 1995, Fiegenbaum et al.1990, Teece et al 1997; Eisenhardt and Martin, 2000 , Byrd 2001; Sambamurthy et al, 2003 cithed in Zhang 2005)	Upcoming Technologies can contribute to organizational flexibility but it has also shortcoming of difficulty to be upgraded and maintained (Lucas and . Olson, 1994 cited in Levy and Powell 1998)
Information acquisition and interpretation ability (Boynton 1993 cited in Zhang 2005) help firms to become flexible (Kotha, 1995; Sanchez, 1995)	Competitors' movements and retaliations create uncertainty that flexibility enables enterprise to benefit from these circumstance (Kogut 1985 cited in Pauwels and Matthyssens 2004)

6. Merits of Strategic Flexibility

Strategic flexibility brings about Superior performance and Inimitability of core competences (Greenley and Combe 2004, Parnell 2005 ,Sanchez 1995,Hitt et al., 1998 ,Zhang 2005) .These competencies enable enterprise to experience superior levels of internal efficiency leading up to ability to exploit first mover advantages (Avison et al.1995, Eardley et al.1997 , Hammer 1990 , Milla and Porter 1985 , Van Den Ven 1986 cited in Levy and Powell 1998).Therefore, enterprise spontaneously optimizes the ways through which it

achieves both short-term and long-term goals (Levy and Powell 1998 ,Sanchez 1995, Hitt et al. 1998 and Lei et al 1996 , Zhang 2005).Subsequently, through this optimization internal process redesigned (Levy and Powell 1998) because it has been frequently asserted that strategic flexibility leads to constant improvements in the firm's organizational processes and technologies as well as its continuous learning of new organizational knowledge, capabilities and skills (Hayes and Pisano, 1994; Goldhar and Lei, 1995 cited in Zhang 2005).Thus, cycle times enhanced, greater responsiveness to customers' needs and a capacity to create their preferences attained by offering high-quality products or services at low costs (Boynton, 1993; Lei et al., 1996 , Zhang 2005).

In addition, more efficient use of capital resources provided, personal accountability and authority increased, problem solving and decision making rapidly improved and greater levels of improvement, creativity and innovation achieved (Bartlett and Elderkin, 1991; Gentile and Jick, 1987; Pratt, 1993a; 1993b and Pratt and Barnett 2000). From operational perspective strategic flexibility contributes in mass customization, time-to market, operational excellence, lean manufacturing and stockless inventory (Stalk et al., 1992; Treacy and Wiersema, 1993; Kotha, 1995; and Byrd, 2001 cited in Zhang 2005). To synoptically highlight above mentioned benefits of strategic flexibility, figure 4 is graphed.

7. Knowledge Management and Strategic Flexibility:

We understood that strategic flexibility is considered as the most important attribute for all enterprises and also this flexibility is a capability built upon knowledge-based resources. In this sense, the constant and rapid changes occurring in the business milieu force small and medium sized companies (SMEs) to continuously look for ways on how to survive, grow and be competitive. Knowledge-based activities are argued to be the basis of sustainable competitive advantage in today's economy (Valkokari and Helender 2007).

Resource-based and knowledge-based theorists claim that the key role of enterprises is to create, store and apply knowledge to ensure long-term survival (Grant, 1996) .According to Von Krogh et al. (1998), the focus on an enterprise has changed from Porter's environmental view to a resource-based view and during the last decades many authors within the resource-based view have paid particular attention to knowledge as the key resource within organizations (Valkokari and Helender 2007).Thus, KM has become increasingly important for all organizations.

KM approaches can be divided into people- and technology-oriented (Valkokari and Helender 2007). Although there is yet no consensus on KM definition due to its multiple viewpoints and roots in several scientific disciplines and subsequently most authors agree that there are substantial benefits to be gained from the systematic and conscious treatment of knowledge related processes in organizations (Maier, 2002). In light of this fact, March (1991) identified two conceptual dimensions of KM as exploration and exploitation of an organization's knowledge resources to create potential competitive advantages (cited in Zack, 1999).

KM can also deal with different knowledge types to equip user with practical understanding (know-how), theoretical understanding (know-why) and strategic understanding (know-what) of organizational knowledge (Sanchez, 1996). In addition, Knowledge management is the process of critically managing knowledge to meet existing needs (here becoming flexible strategically) to identify and exploit existing and acquired knowledge assets and to develop new opportunities (Quintas et al., 1997), so that it can be said that knowledge management is knowledge creation, which is followed by knowledge interpretation, knowledge dissemination, use, and knowledge retention and refinement (De Jarnett, 1996). Enterprises are successful when they create new sources of knowledge and put emphasis on the importance of linking internal and external sources of knowledge existing in environment (Nonaka and Takeuchi, 1997, pp. 6, 8). In the knowledge-based economy, an organization's capability to create new knowledge through a system analyzing new and existing knowledge is a key success factor (Valkokari and Helender 2007). This notion necessitates a comprehensive strategic attention to be devoted to enterprise's knowledge resources. Choo's (1998) concept of organizational knowing consists of, sense-making, knowledge creation, and decision-making comes to picture more interestingly here.

During all of these strategic stages, an organization has to deal with information needs, the search for information, and the use of available information (Valkokari and Helender 2007). Therefore, Knowledge management is the process of knowledge creation, which is further followed by knowledge interpretation, analysis, knowledge dissemination and use in strategic decision making and development, and finally knowledge retention and refinement to develop new knowledge resources constantly and superiorly (De Jarnett, 1996, McAdam and Reid 2001). It has been widely discussed that KM affects organization internally and externally (Quintas et al.

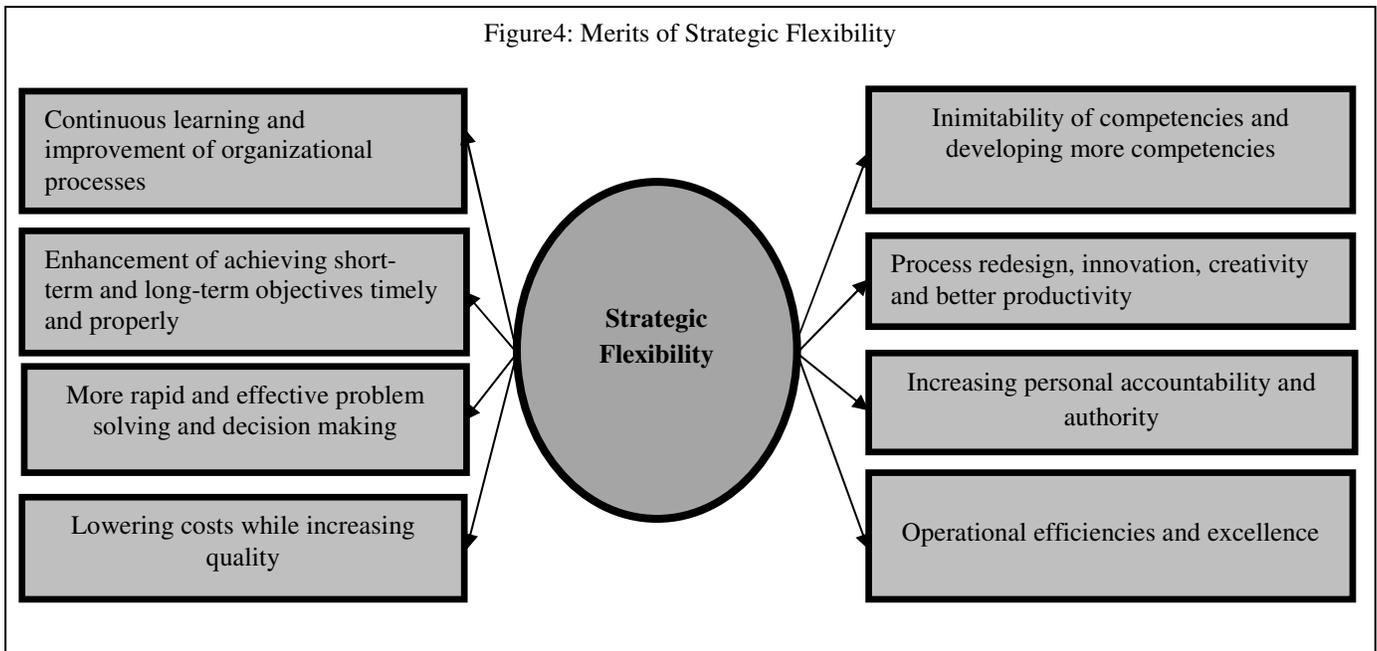
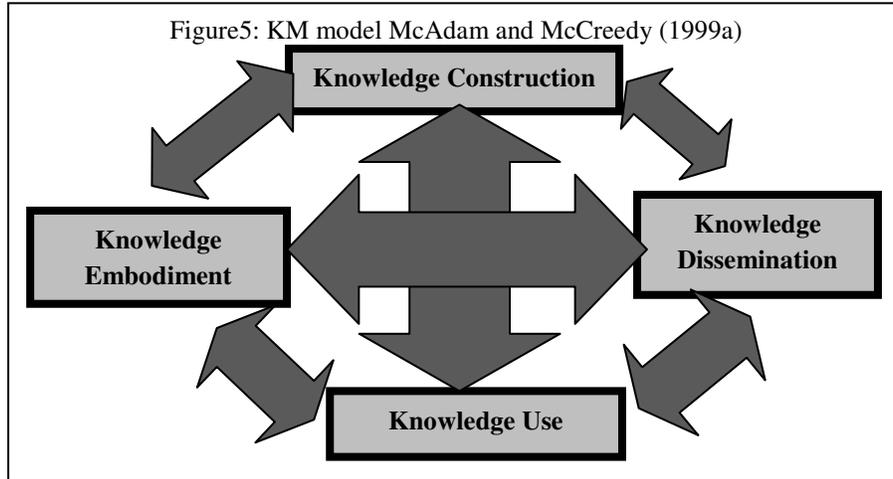
1997). In this sense, Quintas et al. (1997) and De Jarnett (1996), put more emphasis on the role of KM within the organization and how organization's performance and operations can be affected by KM. hence, it can be perceivably argued that, the time is right for KM to devolve and make a contribution within the SME sector, (Ramsey, 1996 McAdam and Reid 2001). KM concepts, principles and practices provide a seedbed and a fertile ground for SME sector where scarce resources, market agility, closeness to the customer, fewer layers, etc have made them drastically different from large enterprises (McAdam and Reid 2001).

8. Knowledge Management Model

In this study we adapt KM model contrived by McAdam and McCreedy (1999a) used in the study conducted by McAdam and Reid (2001). This model of KM fits with strategic flexibility mechanism in which environmental scanning and creation of knowledge resources play the most important roles. The model entails four steps as knowledge construction or creation (generation), knowledge embodiment, knowledge dissemination and finally knowledge utilization or use (figure 5). Construction of knowledge within the organization is to acquire and generate knowledge as inputs. Nonaka and Takeuchi (1995) labeled this part of KM as "organizational knowledge creation" which is referred to the creation and development of knowledge within the organization and conversion of tacit or implicit knowledge into explicit. Sternberg (1999) indicated that successful SMEs are characterized by creating new knowledge through the process of innovation in a promising and conducive environment.

This model further assumes that constructed knowledge is then embodied within the organization through learning and innovative culture, not just by explicit programmes but within a process of social interchange between employees in order to improve human resources. In this stage, encouraging participation is strategically seen as valuing all the sources of knowledge within an enterprise, especially in the SME sector, where inherent agility and responsiveness at all levels is considered as a key competitive advantage (McAdam and Reid 2001a,b).

Sternberg (1999) asserted that successful SMEs are characterized by creating new knowledge through the process of innovation.



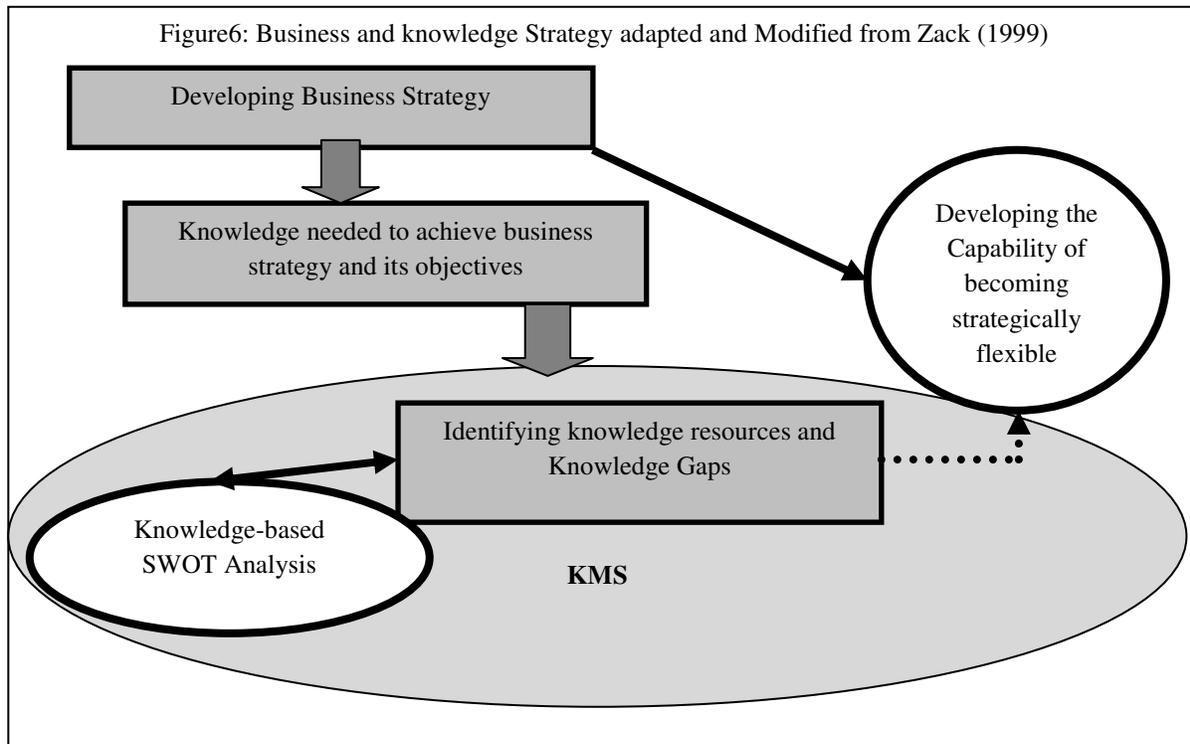
Following embodiment is a process of dissemination of the knowledge throughout the organization and its environment. And finally the knowledge is used in regard to organizational outputs and responses to environmental signals and trends (McAdam and Reid 2001). Accordingly, the SME sector would appear to need to develop understanding of KM further as a key business driver rather than as a resource-intensive additional initiative (McAdam and Reid 2001). In regard to this model, retrospectively

Zack (1999) asserted that a knowledge management system and all strategies involved with that, should support the business overall strategy. Here the main strategy is to become flexible. To do this, Zack proposed a model entailing four steps in order to weave KM and strategy:

1. defining strategy,
2. determining needed knowledge to achieve strategy,

3. assessing knowledge resources and their values and applications and eventually;
4. Comparing them to find out knowledge gaps.

enterprise is enabled to become adaptive and develop resilient strategies.



One method to carry out this process is “knowledge-based SWOT analysis” (Zack 1999 cited in Rao 2005 page 327). This analysis basically refers to environmental scanning internally and externally. The knowledge management strategy will need to address the weaknesses and threats which are resulted from knowledge gap and hindering the process of flexibility (Rao 2005 page 204). This system is synoptically graphed in figure6.

Based on this notion, any knowledge management system covers 10 strategic domains (figure7) which must be taken into account in order to achieve an intensive insight into strategic flexibility and its requirements (Rao 2005 Page 204). Knowledge gaps must be recognized and properly bridged among these 10 critical domains. This action brings about a seamless flux of knowledge into firm and feeds strategic flexibility process felicitously. Every one of these areas directly influences strategic flexibility of the enterprise. Therefore, strategic flexibility as a strategic core capability focalizes knowledge management. Subsequently the enterprise’s knowledge management system is centered at the process of strategic flexibility. Only in this way the

9. Research Methodology

This study is conducted on the basis of multiple case study approach. This method technically employs qualitative techniques to understand the concept of strategic flexibility in an enterprise and the role of knowledge management embedded in flexible system from perspective of Malaysian SMEs. Since case study approach typically incorporates numerous sources, it provides a fuller picture of the business unit under study, but often relies primarily on personal interviews and unobtrusive observations during data collection (Bonoma 1985). Therefore, based on above conceptual framework a set of relevant questions developed to be appropriately addressed and answered through observations, interviews with SME’s executives and document analyses. Data triangulation in terms of time, space and person is carried out as an important component of case study analysis. Because in case study research as a theory building study, a prior view is needed of the general constructs that are to be studied (Yin, 2003)

10. Conceptual Framework

According to theoretical findings derived from a combinative literature survey on knowledge management system and strategic flexibility, we

argue that strategic flexibility for an enterprise needs a strategic knowledge management system as an infrastructure in order to acquire and interpret knowledge coming from internal and external evolving and elusive climates. These knowledge resources must be properly utilized in order to make an enterprise strategically flexible. This argumentation is exhibited as a conceptual framework in figure 8.

11. Case study design

Case study design can be classified as single or multiple case designs as well as either holistic or embedded designs (Yin 2003). Therefore, in adherence to objective of this study and in congruency with research flow, a multiple holistic case study design is selected to investigate strategic flexibility and the role of knowledge management system in Malaysian SMEs.

12. Case selection

The population of interest for this research study consists of small and medium size enterprises performing in service and manufacturing sectors located in Kuala Lumpur, Malaysia. A total of 10 SMEs were selected equally distributed among small and medium sized enterprises based on number of employees as a criterion of classification by Malaysian government. The brief description of SMEs is shown in table 2. This selection has enabled us to explore behavior of both small and medium sized enterprises comprehensively across two main economic sectors of Malaysia.

Table 2: Description of SMEs in this Study

SME	No of Employee	Enterprise	Sector
1	15	Small	Service
2	16	Small	Service
3	18	Small	Manufacturing
4	18	Small	Manufacturing
5	19	Small	Service
6	30	Medium	Manufacturing
7	23	Medium	Service
8	25	Medium	Manufacturing
9	22	Medium	Manufacturing
10	26	Medium	Service

13. Methodological Soundness

One of the most important factors in designing any research study is establishing methodological soundness. Strong techniques have to be utilized in order to develop sound research design, data

collection and data analysis stages (Parkhe, 1993). In this sense, for dealing with validity and reliability, Yin (2003) presented several Techniques which are precisely listed in table 3.

14. Data Collection

Data were reaped through a set of interviews with SMEs' executives and also observations and document analysis. First of all a set of questions (open-ended) were e-mailed to SMEs' executives and they were asked to respond based on their knowledge about their respective SME's structure, ICT infrastructure, competencies, employees and competitors and other theoretical competent, after that a set of interviews made and direct observation upon daily performance of SMEs were conducted. Simultaneously some relevant documents were analyzed. This combinative approach of gathering data first of all fulfills the requirements of case study research and validity of constructs secondly, provides an intensive bundle of knowledge to streamline data analysis and inference building.

Subsequently case study protocol and Semi-structured interview protocol were to ensure the reliability of data. Moreover, a database was developed for future applications and also to guarantee the accuracy of reliability test. Each interview lasted approximately 45 minutes and each observation lasted around 2 hours. The responsiveness of SMEs was satisfactory.

15. Data Analysis

Miles and Huberman's (1994) matrix analysis technique and Yin's (2003) concept of pattern matching were utilized to analyze data and systematically compare concepts and theories with the case data. This should be noted that, case must be individually analyzed before being incrementally analyzed and data analysis and collection overlapped. This approach is considered vigorous enough in order to build an analytical inference.

Table 3: testing reliability and validity of data in case study research (Yin 2003)

Testing component	Techniques	Research stage
Construct Validity	Use of multiple sources of evidence Establish chain of evidence	Data collection Data collection

	Have key informants review interview transcripts	Data collection
Internal Validity	Pattern matching Address rival explanations	Data analysis Data analysis
External Validity	Use of multiple case design Replication logic using analytical generalization	Research design Research design
Reliability	Case study protocol Semi-structured interview protocol Develop case study database	Data collection Data collection Data collection Data collection

16. Findings and Discussion

Since, the need for strategic flexibility has been theoretically and empirically discussed (kindly refer to previous sections) and moreover, it has been argued that, today’s menacing competitive challenges, have made strategic flexibility an imperative capability to be developed by SMEs’ executives, developing a comprehensive understanding of the extent to which strategic flexibility has been perceived by these executives makes really sense. In adherence to this argumentation and equally importantly to address our first research question, following statements are extracted from our analysis:

First of all a holistic review on executives’ perception shows that, executives of all enterprises express some sort of analogous statements about strategic flexibility either same with operational flexibility or as a superior one and also enterprise’s knowledge management. These expressions are classified into three groups. Group one represents perception of flexibility whereas group two contains the overall perception of strategic flexibility and finally group three reveals executives’ perception of enterprise knowledge management. These findings are arranged as follow:

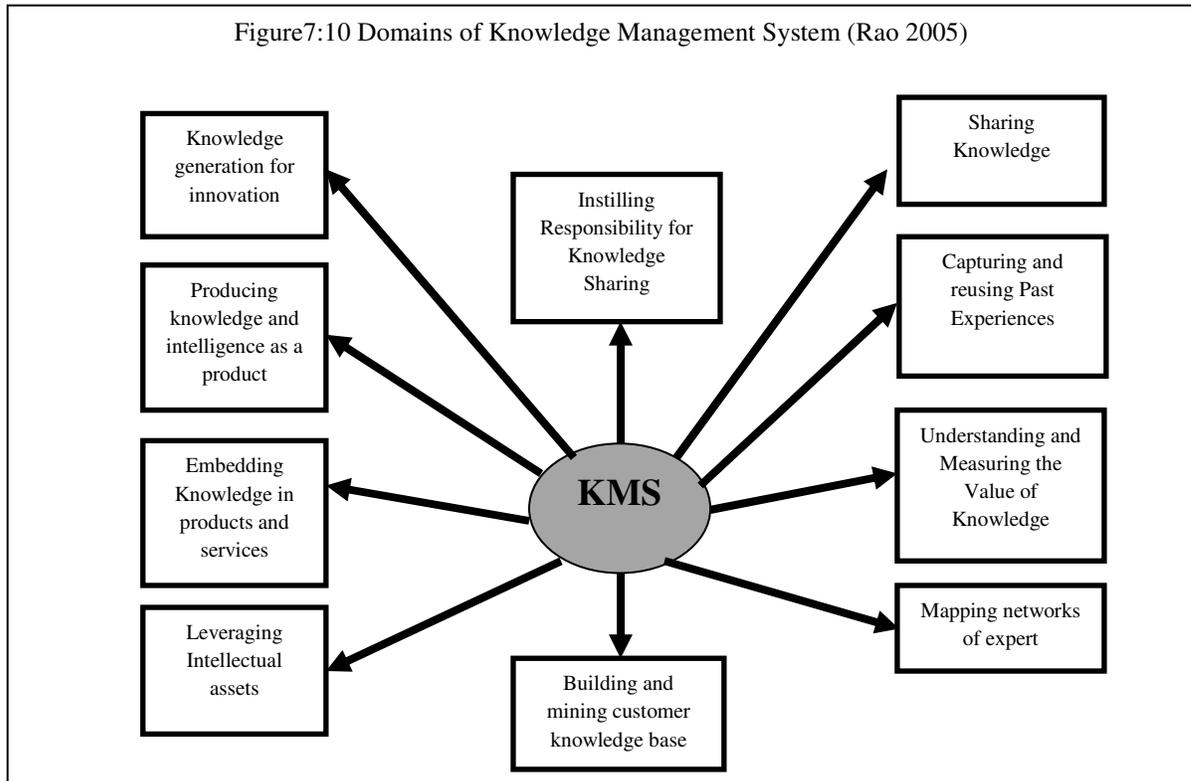
Statements in regard to SME’s flexibility:

1. Flexibility means adaptability and this adaptability itself comes from ability to understand competitors and customers

- actions and forecast them timely and rightly as much as possible
2. Acquiring talented and skilful staffs and updating their skills are core objectives of an enterprise under elusive business milieu
3. Information technologies can help partially an enterprise to become flexible in all aspects particularly marketing, CRM, manufacturing and operational
4. Operational and tactical flexibility are main concerns of SMEs in face of competition
5. Collaborative strategies like joint venture have been always seen as tools to develop operational abilities and flexibility
6. Flexibility (here mainly operational and tactical) needs a continuous flow of financial resources whereas this flow has been frequently stopped due to lack of supports by governments and other agencies in promoting SMEs development in time of fierce competitive forces from MNCs.

Statements in regard to SME’s strategic flexibility:

1. Strategic adaptability requires a comprehensive set of abilities to add value to the products and/or services
2. Strategic flexibility needs a less hierarchical structure in which decisions are made collaboratively.
3. Strategic flexibility is built upon strategic mindsets of all staffs
4. SMEs lack resources to acquire latest technologies and do need governmental incentives and supportive facilities
5. Fierce competition and reliance on domestic markets take SMEs away from opportunities sparkling in international markets.
6. SMEs are facing tough challenges in selecting and recruiting skilled workers because they are normally hired by big companies



Statements in regard to SME's Knowledge Management:

1. Knowledge management and IT enable HR to fill skill gaps and enrich organizational human resources (training and learning)
2. Knowledge management mainly is a system to store and retrieve knowledge used in marketing, operational and tactical decision making
3. IT infrastructure can partially enhance knowledge sharing and flow of information among insiders and also between insiders and outsiders
4. Operational information , competitors movements and customers expectations are the most demanded sources of knowledge
5. Flexibility needs ability to interpret and analyze knowledge sources quickly and properly
6. Strategic flexibility undoubtedly needs ability to gather and analyze information about both competitors and customers mainly by using ICTs

Table 4 summarizes these argumentations based on interview by SMEs’ executives and their expressions. Therefore, this study shows that the overall understanding of SMEs’ executives about flexibility, imperativeness of strategic flexibility, and also requirements of being flexible, especially strategic linkage between strategic flexibility and knowledge management, is satisfactorily good. However some barriers are impeding these enterprises to achieve prerequisites of strategic flexibility or develop and acquire elements of strategic flexibility. These impediments are crippling SMEs to link KM with components of strategic flexibility and benefit from being flexible strategically. These obstacles can be briefly listed as:

1. Financial barriers to acquire and update new technologies
2. Disability to develop proper human capital
3. Disability to develop and maintain international cooperative strategies mainly because of dependency on domestic markets and insufficient resources

After these explanations, in consistency with the main objective of this study we have fleshed this research out by going into more details about strategic flexibility and knowledge management. Results from analysis of documents, observations and also deep analysis of interviews with executives (CEOs, HRM, IT manager and other top managers) unleashed some classifiable facts that, SMEs have two distinctive perceptions of strategic flexibility and also two different attitudes toward knowledge management. Group one holds this belief that strategic flexibility is equal to operational flexibility and for being flexible, resources, capital and effort must be devoted to machinery to take proper daily operational actions based on environmental , market and industrial changes, rather than IT infrastructure and databases ,so that strategic flexibility is somehow misunderstood with operational and tactical adaptabilities ,efficiencies and effectiveness . In this group executives believe that knowledge management deals with human resources and training along with learning. These activities are enough to enable enterprise to be flexible. In this domain Knowledge management is normally performed by HR managers or CEOs (Entrepreneurs).These SMEs normally are performing in manufacturing sectors. In contrast, second group encompasses SMEs more in service sector whose executives see KM as a different and independent discipline from IT and HR. they believe that KM, IT and HR are closely intertwined in an organized manner to equip an enterprise with more advanced resources,

communication abilities and human skills. In addition, executives in this school of thought take strategic flexibility as a long-term objective which is enhanced and facilitated through achievement of operational flexibility. In addition, executives in both groups suffer from impediments previously mentioned. Therefore SMEs in Malaysia are typically navigated toward knowledge-mediated strategic flexibility based on two different mindsets. One creed sees flexibility as operational and tactical adaptabilities enhanced with basically managing knowledge of employees in a simplified manner and competitive barriers can be overcome by developing manufacturing and operational abilities and technologies along with training of staffs. Second creed sees flexibility in a more sophisticated manner within which strategic flexibility is set as a long-term objective and will be achieved by concentrating on a broader view of knowledge management and its relationship with ICTs.

Table4, summary of SMEs’ executives’ expressions

SMEs’ Executives										
	1	2	3	4	5	6	7	8	9	10
	S-S*	S-S	S-M*	S-M	S-S	M-M*	M-S*	M-M	M-M	M-S
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	-	✓	✓	-	✓	✓	-	✓
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	✓	-	✓	✓	-	✓	-	✓	✓	-
5	✓	✓	✓	✓	✓	✓	-	✓	✓	-
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	✓	✓	✓	✓	-	✓
11	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	✓	✓	✓	✓	✓	-	✓	✓	✓	✓
14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	✓	✓	✓	✓	✓	✓	-	✓	✓	✓
16	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
17	✓	✓	✓	✓	✓	✓	✓	-	✓	✓
18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Analytical Expressions (according to above classification)

S-S: Executive of a Small Service Enterprise
 S-M: Executive of a Small Manufacturing Enterprise
 M-S: Executive of a Medium Service Enterprise

M-M: Executive of a Medium Manufacturing Enterprise

Therefore, the way in which ICTs (information and communication technologies) and human capital as a source of knowledge are treated can define the extent to which SMEs' executives take knowledge management and strategic flexibility (in an integrated system) into consideration. To simplify understanding of these findings we classify SMEs in two sets, first category indicates strategic flexibility vis-à-vis operational and tactical types of flexibility in which SF1 means strategic flexibility in group one and SF2 in group two (Figure9). Whereas second category exhibited in figure 10 shows two different mindsets of KM in relation with strategic flexibility derived from analysis of two groups. (KM1 by group one means paying less attention to KM, ICT and strategic flexibility and paying more attention to operational and tactical flexibility consequently insufficient utilization of knowledge management. In contrast KM2 shows more attention paid to knowledge management and KM is considered as strategic means in development of human capital and capabilities needed by strategic flexibility, therefore, this consideration is long-term and more strategic) .To synthesize these two set of empirical emergent points, figure 11 is drawn and illustrates that poor IT infrastructure of some manufacturing SMEs has led to inaccurate perception of strategic flexibility and ambiguity in distinguishing operational, tactical and strategic flexibility .

This problem seems to be likely to result in losing competitive edge and falling behind rivals for SMEs. In contrast, those service SMEs that have utilized more advanced Information technologies and have spread knowledge management activities among all employees achieved better and more accurate understanding of strategic flexibility. This insight will probably equip them with ability to become flexible and outsmart bigger counterparts in the industry. In figure10, KM1 indicates overall understanding of knowledge management and its role in strategic flexibility of the enterprise from the perspectives of executives in group one and KM2 does the same for executives in group 2.

Therefore this qualitative study found two distinctive mindsets and consequently put more emphasis on this phrase that although SMEs' executives in Malaysia have seemingly proper understanding of strategic flexibility, knowledge management and their relationship but in practice they behave in two different ways and deal substantially different with these two constructs (as previously mentioned and elaborated). Figure 11 integrates these two and depicts that this categorization and conceptualization

should not be misunderstood by practitioners and scholars. These findings are consistent with the findings of some recent studies. For instance Robertson and Powell, (1997) and Levy and Powell (1998) believe that accurate and sufficient utilization of ICT gives SMEs flexibility not only operationally and technically but also strategically. This argumentation has been supported by Gunasekaran et al. (2001), Zhang (2006) and Kapasuwan et al. (2007). In this sense more recently, Maguire et al (2007) show that SMEs do not generally utilize ICT fully, they lack resources and skills to reap benefits of these technologies and thus they fall behind competitors and lose flexibility in manufacturing, Marketing and developing new services and products.

16. Limitations

Like other empirical studies this research is also confined with some limitations. Understanding of these limitations paves the way for future researches and illuminates the research domain for further investigations. We explained some of these limitations as follow: time constraints and complexity of documents of some SMEs in particular in manufacturing sector were two important forces adversely affected the smooth and sound flow of this study. A big portion of SMEs lack systematic documentation programs and records which negatively affected not only their flexibility process but equally importantly implicate on a poor knowledge management structure. This shortcoming also made data analysis more difficult for us. In addition, improper knowledge and shallow understanding of some executives about competencies of their respective enterprises also deviated this study from a sound basis. Poor internet infrastructure caused some delays in data collection and also enfeebled the process of knowledge acquisition, interpretation and diffusion across the enterprises. Conducting a survey over SMEs in different sectors and then performing case study analysis is time-consuming and costly. Time constraints and cost barriers have limited this study. Moreover, Malaysia is a multicultural country and therefore its workforce is diversified but this study did not address the influences of diversity on enterprise's flexibility procedures. But poor management of diversity has weakened knowledge management performance and also flexibility of a system as a whole area, so that respective researches must be designed to explore this dimension as well

17. Conclusion

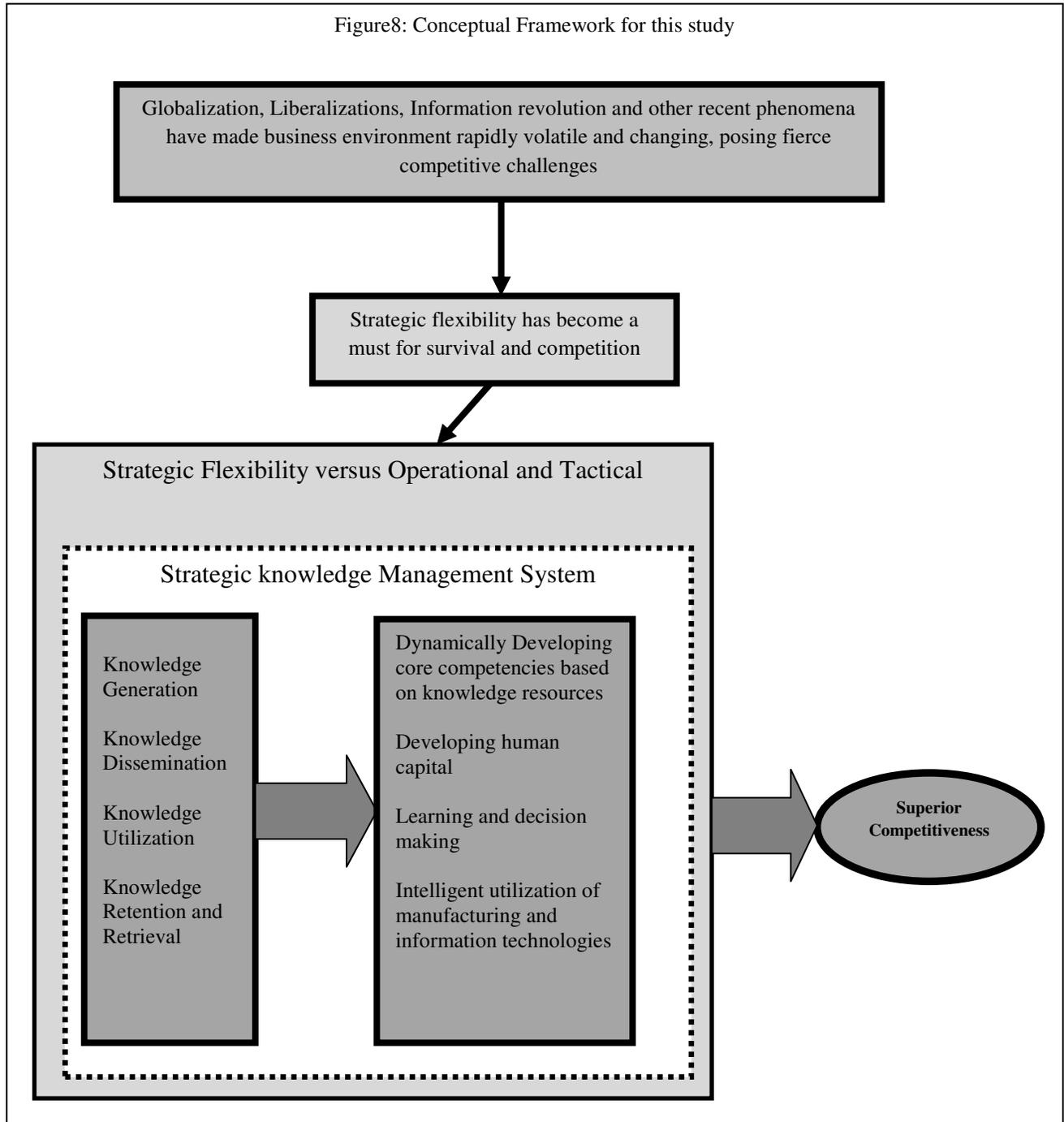
This study as a qualitative and explanatory study was conducted to explore the concept of strategic flexibility and its relationship with enterprise

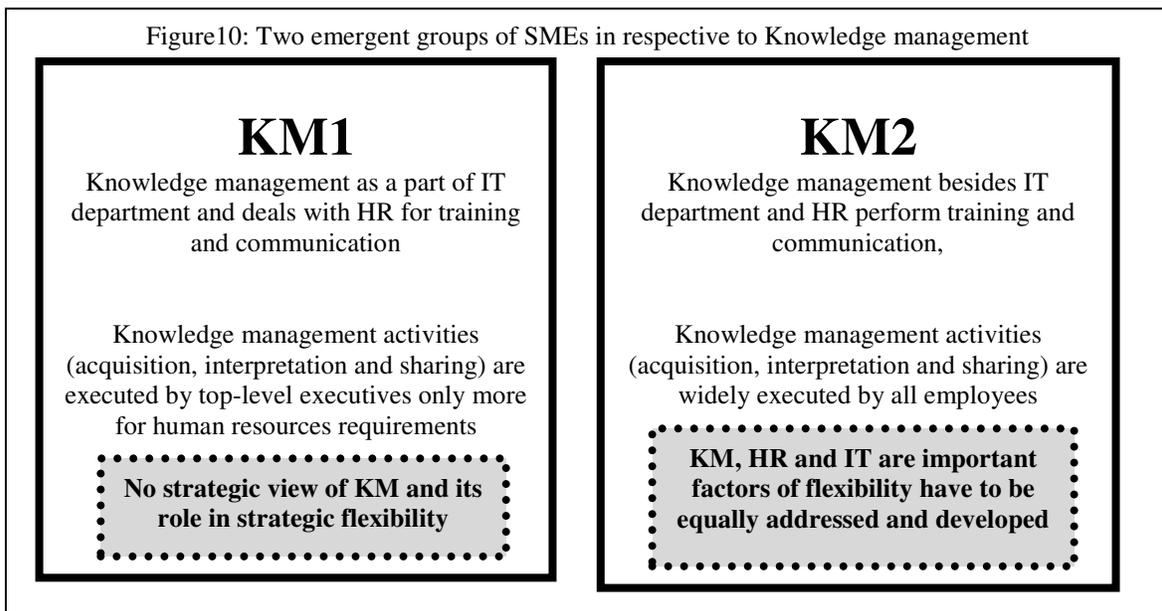
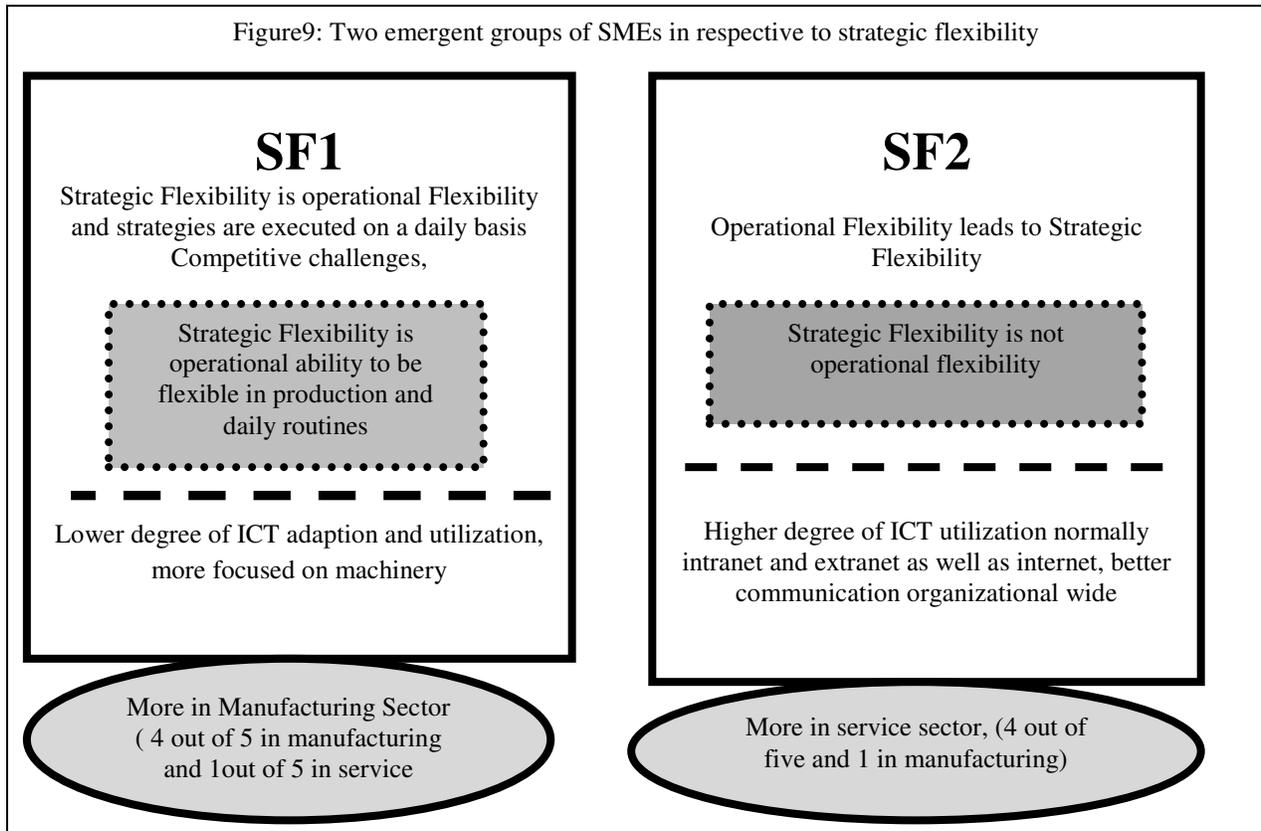
knowledge management system because it has been considerably discussed that, in today's business milieu knowledge resources posing the most significant stake in organizational competitiveness. Flexibility from a holistic perspective was explained and strategic flexibility as the most important sort of flexibility for enterprises was defined and scrutinized. Strategic flexibility identified as a capability to become adaptable to environmental changes not only for a short-run period but more critically for a long-term horizon. Components of strategic flexibility were defined and briefly explained as: Strategic leadership, dynamic core competencies, developed human capital, horizontal and flattened structure, learning and innovative, latest technologies (manufacturing and ICT) and engagement in cooperative strategies to create shared values. It has been also asserted that developing this capability needs knowledge resources to be felicitously and timely created or acquired and then utilized. A model of Knowledge management was used to meet requirements of the flexibility mechanism. It has been proposed that strategic flexibility focalize knowledge management so that, KM is centered at strategic flexibility mechanism. A theoretical framework illustrating aforementioned findings was sketched and a multiple case study approach covering 10 SMEs performing in manufacturing and service sectors in Malaysia were selected. Data analysis showed that, two perceptions about strategic flexibility exist. One perception sees strategic flexibility as same with operational flexibility.

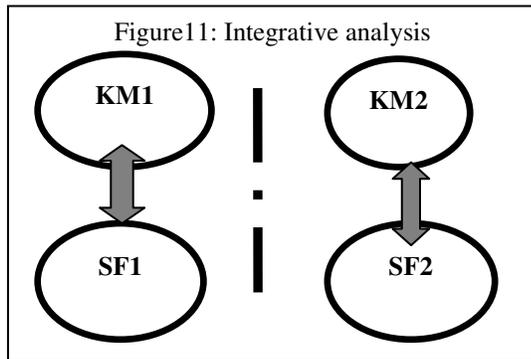
competencies and finally problems arose from weak diversity management in Malaysian SMEs.

This mindset belongs to more manufacturing SMEs with slightly inferior ICT infrastructure. SMEs in this group also have not taken all aspects of knowledge management into account for operational efficiencies and effectiveness. In the other side, the majority of SMEs in service sector showed better perception of strategic flexibility and revealed that operational flexibility leads to strategic flexibility; these SMEs enjoy from a superior ICT infrastructure and also have opened up more aspects of knowledge management system to employees. Knowledge acquisition, analysis and sharing are carried out by all staff and monitored by executives thus, these small and medium service providers are seen as more flexible and adaptable in comparison with manufacturing counterparts which are argued to be less flexible strategically and more susceptible to lose their competitiveness. The study was concluded by expressing limitations in terms of documentation problems of SMEs, time and cost barriers of case-study approach, improper knowledge of executives about their respective enterprise's resources and

Figure8: Conceptual Framework for this study







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Further Readings

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