In SMEs, knowledge is in abundance. SMEs is known of being good in creating knowledge but poor in knowledge acquisition. As intellectual capital is extensively researched on large organization, SMEs remain lagged behind in exploiting its own internal resources. This intellectual capital of SMEs is yet to be explored in-depth. Knowledge exploitation and knowledge exploration in an organization would lead to administrative and technological innovation. Innovation depends heavily on knowledge. Because of its small size, SMEs are said to be the best platform for innovation to take place. However, SMEs do not really get involve in innovation actively and extensively as expected due to lacking of expertise and financial capabilities. This study is to trace the intellectual capital of SMEs that contribute for product and process innovation thus lead to higher performance in SMEs. This study also will highlight the framework of intellectual capital as analytical framework for SMEs to extend their capabilities for long-term survival. The framework is developed and deployed as an analytical model to facilitate the investigation of relationship of intellectual capital, innovation and organizational performance. Quantitative method is adopted and questionnaire is distributed using simple random sampling. The findings of this preliminary study would help SMEs in identifying their intellectual capital which is different from intellectual capital of large organization. This preliminary study would highlight the intellectual capital of SMEs that encourage innovation in SMEs particularly in product and process innovation. The findings of this empirical study would give an insights to SMEs the importance of identifying their internal resources which is intellectual capital thus capitalizing and utilizing it to be innovative, as a results having higher organizational performance especially making profit which is the main concern of SMEs.

1.0 Introduction
The small and medium sector in Malaysia has long been hailed as a key driver of the national economy; it contributes 32% to the national GDP (Low, 2007). Ninety-nine out of 100 Malaysian businesses are SMEs and almost 5.6 million Malaysians work in the SME sector (Low, 2007). In the highlights of globalization, SMEs in Malaysia are no longer “protected” through tariff and non-tariff measures that enable them to garner significant market share in the country (UNDP, 2006). SMEs have to seek opportunities in the global marketplace (UNDP, 2006). As the economy is moving towards knowledge-based economy, the rich information is flowing from many sources and channels without any limitation. Capability of an organization to manage knowledge effectively becomes a prerequisite for success and innovativeness (Widen-Wulff & Suomi, 2007). In 2007, Malaysian Government had proposed to implement a total of a 190 programmes, involving a financial commitment of RM3.7 billion to help SMEs building its competitiveness and capabilities (Low, 2007). These programmes are under key areas
namely; physical infrastructure, information management infrastructure and regulatory infrastructure. Hashim (2007) points out the business characteristics of successful SMEs in Malaysia are depending on sufficient capital, economies of scale, flexibility in costing, pricing latitude, ability to meet typical operating profit margin of the industry, costs variability at various production levels, ability to achieve greater efficiency, use of marketing in generating additional sales and ability to be innovative. Malaysian government strives to provide a business friendly environment with a supportive regulatory and institutional framework in which entrepreneurial activity is able to be thrive (SME Annual Report 2006).

According to Man et al (2002) the success of SMEs is influenced by the key players and knowledge, experience and skills of the owners and workers is key factor for success. Basically, entrepreneurs have the ability to recognize a business opportunity which is the fundamental to the entrepreneurial process as well as growing a business (Hisrich et al, 2008). Entrepreneurs that able to act on business opportunities would be in a strategic position to develop innovation; new products/services. Key factors influencing the competitiveness of SMEs are internal factors, external environment and the influence of the entrepreneurs (Man et al, 2002). The strength of SMEs lies in motivation, good network, tacit knowledge in unique skills , shorter informal communication, less bureaucracy, greater proximity to market and internally which is important to be innovative (Nootboom, 1993). This gives SMEs flexibility in innovation especially of its close proximity to market information and customer information. The great variety of SME generates a variety of innovative ventures (Nootboom, 1993). Most of literature review highlights SMEs lacking of tangible resources, physical and financial capital, but the challenges for these SMEs is to be able to demonstrate the intangible resources embedded in the organization, entrepreneurial capital which is the extension of human capital (Erikson, 2002).

While most of the intellectual capital studies are focusing on a larger organization, this study is focusing on intellectual capital or internal resources in SMEs. Intellectual capital is also known as an organizational knowledge which needs to be regulated in order to make sure that the knowledge is valuable. Globalization has encouraged innovation to be a perquisite for SMEs to operate in more competitive global markets (Gunasekaran et al., 1996). Although there are a number of studies on continuous improvement in SMEs (Gunasekaran et al., 1996) there is a relative paucity of in-depth of innovation implementation in SMEs (McAdam, 2001). Intellectual capital that provides structure, system, strategy and culture (Afuah, 2003) is antecedent of innovation. This study is integrating intellectual capital and innovation for better SMEs’ performance. It is focusing on the inner resources of SMEs which should be regarded as their advantages. By doing this, SMEs are capable in emerging as a key player in the industry rather than thinking about their incapability especially in physical and financial capital (Man, Lau et al, 2002).

2.0 Literature Review

**Intellectual capital**
Stewart (1997) defines intellectual capital as “the intellectual material – knowledge, information, intellectual property, experience- that can be put to use to create wealth” while Bontis (1998) define intellectual capital as the pursuit of effective use of knowledge (the finished product) as opposed to information (the raw material). Intellectual capital consists of three capital; human capital, structural capital and customer capital. Intellectual capital can be located in its people, its structures and its customers.

**Human 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). Human capital represents the individual tacit knowledge embedded in the mind of the employees. It can be defined as a combination of employee’s competence, attitude and creativity (Jin Chen, 2004).

According to Mayo (2001), human capital can be divided into three dimensions: capability and potential, motivation and commitment, and innovation and learning.

<table>
<thead>
<tr>
<th>Capability and potential</th>
<th>Educational level, professional skills, experience, attitudes, personal networks, values and the ability of current employees to evolve within the organization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation and commitment</td>
<td>Whether employees align their own interests with those of the firms</td>
</tr>
<tr>
<td>Innovation and learning</td>
<td>The degree to which employees are open to change</td>
</tr>
</tbody>
</table>

Human capital is different from structural capital in managing knowledge (Stewart 2000), it is the source of innovation as people contribute their creativity while sharing and transporting knowledge. The entrepreneur and the inventor are pure human capital (Cohen & Kaimenakis, 2006). Desouza & Awazu (2006) state that unlike large companies, human capital in SMEs tends to behave quite differently. As SME is very much into entrepreneurship, entrepreneurial orientation should be incorporated into human capital as suggested by Keskin (2006). Entrepreneurial orientation constitutes an organizational phenomenon that reflects a managerial capability by which firms embark on proactive and aggressive initiatives to alter the competitive scene to their advantage (Avlonitis and Salavou 2007). Entrepreneurial orientation plays a key role in the development and maintenance of innovativeness (Hult, Hurley et al. 2003). Entrepreneurial orientation which consist the qualities of proactiveness, aggressiveness and initiative lead to spark and ignites the firm into innovative actions (Hult, Hurley et al. 2004).

**Structural Capital**

This component of intellectual capital is the infrastructure firms develop to commercialize their intellectual capital (Edvinsson and Sullivan, 1996). Structural capital provides a platform for people to be creative (Stewart, 2000). While firms don’t owned human capital (Cohen and Kaimenakis 2007), structural capital belongs to the
organization as a whole. It can be reproduced and shared. A good structural capital will provide a good environment for rapid knowledge sharing, collective knowledge growth, shortened lead times and more productive people (Stewart, 2000).

**Relational Capital**
Customer capital or relational capital is referring to all the relations the firm has established with its stakeholder groups such as customers, suppliers, community, and government (Bontis, 1998). Most of literature review is focusing on customer and market orientation when refer to this external capital. But for the purpose of this paper, relational capital will be adopted. Stewart (2000) points out that the purpose of relationship with these external stakeholders is to turn it into money. While customer and market orientation is important, relationship of SME to other parties especially government is very crucial in navigating SME to be competitive. Market orientation which include customer capital (Cohen and Kaimenakis 2007) is a set of behaviors and processes (Kohli and Jaworski 1990) or an aspect of culture ((Narver and Slater 1990) to create a superior customer value. Market orientation is to coordinate the customer’s needs (Kohli and Jaworski, 1990; Han et al.1998) by obtaining and using customer’s information, competitor’s capabilities and provision of other significant market agents and authorities (Keskin 2006), Deshpande & Webster, 1989). This integrated effort on the part of the employees and across departments in an organization which in turn, gives high or superior performance to an organization (Kohli and Jaworski 1990).

Montequin et al. (2006) in their study had listed down important elements of Intellectual Capital for SMEs as shown below.

**Figure 1**

![Figure 1](image)

Source: Montequin et al. (2006)

Intellectual capital in SMEs and large organizations should not be the same as they differ significantly on resources employed (Cohen & Kaimenakis, 2007). Desouza & Awazu (2006) found that organizational capital in an SME is primarily developed and
maintained by the means of its employees. On top of that, employees develop common knowledge so as to better organize works (Cohen & Kaimenakis, 2007).

**Innovation**

Innovation is the process of creating a commercial product from an invention (Hitt et al, 2005). Innovation can deliver four types of benefits beside cash: knowledge, brand, ecosystem and culture (Andrew & Sirkin of Anonymous, 2007). But the most important reason for innovation in organization is make profit. Firm makes profits by offering products or services at a lower cost than its competitors or by offering differentiated product at premium prices that more than compensate for the extra cost of differentiation (Afuah, 2003) as shown in the figure below:

Internally, firm should be supported by its strategy, structure, system and people (Afuah, 2003). Competences and asset are the function of technological and market knowledge as innovation is the use of new technological and market knowledge to offer to a new product or service that customers will want (Afuah, 2003). Motwani et al. (1999) found that structure of the organization is important to innovation as it supported innovation in SMEs for both product and process of innovation. Product innovation occurs when a new or improved product is introduced to the market while process innovation is an adoption of new ways of making products or services (Maravekalis et al., 2006).

**Figure 2**

**Intellectual Capital and Innovation**
Human capital’s “output” is innovation which is structural capital’s efficiency (Stewart 2000). Innovative organization requires an organization culture that constantly guides organizational members to strive for innovation and climate that is conducive to creativity (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). Few studies examine the embeddedness of innovation in SMEs (Oakey 1993, Shaw 1998, Panniccia 1998, Freel 2000, Jensen and Greeve 2002 in Scozzi and Garavelli, 2005) which shown that SMEs capable in engaging in innovation in developing its competitive edge. According to Caputo et al. (2002) the relationship of SMEs and innovation is not easy one as SMEs have a number of unique features such as scarce resources, low market influence and informal communications which differentiate them from large firms (Hadjimanolis, 2000). Innovation process traditionally involves huge financial resources and quite risky (Caputo et al., 2002). Moreover, innovation which allows diversification strategies may be better pursued by large organizations rather than SMEs. 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). 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). SMEs have at some point undertaken some form of incremental innovative initiatives, often supported by local authority grants (Humphreys et al, 2005). Therefore, there is a need for SMEs to increasingly innovate to survive and compete in global and niche market especially many of SMEs focus on project and product development aspects of innovation (Humphreys et al, 2005). There is a need for studies on how innovation is implemented within the constraints and characteristics of SMEs (Humphreys et al., 2005).

**Innovation and Organizational Performance**

The innovation type has a significant impact on business performance especially incremental innovation (Oke et al, 2004). Deshpande et al. (1993) found that innovativeness is important determinants of organizational performance even after culture had been controlled. Previous studies on innovation and organizational relationship indicated mixed results, some positive, some negative and some showed no relationship at all (Capon et al. 10990, Atuahene-Gima, 2001). Damanpour (1991, 1996) argued that the association between innovation and firm performance depends on the performance measurement and the characteristics of a given organization. Furthermore, different types or different combinations of innovation may also result in divergent organizational performance (Lee & Chen, 2007). The relationship between innovation and organizational performance has been found in many researches (Hurley & Hult, 1998; Kohli & Jaworski, 1993; Keskin, 2006; Atuahene-Gima, 2001; Damanpour; 1991,1996). Innovation has demonstrated a strong and an influential relationship with SMEs performance (Wolff & Pett, 2006; Montequin, 2006).

**Intellectual Capital in SME**
Man et al (2002) point out the key factors influencing the competitiveness of SMEs is depending on its internal factors, external environment and the influence of the entrepreneur. The internal factors are financial, human and technological resources, organizational structures and systems, productivity, innovation, quality, image and reputation, culture, product/service variety and flexibility and customer service while external environment is refer to competitors. 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. 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 form their associations or membership more readily in order to achieve higher performance (Desouza & Awazu, 2006). The entrepreneur’s demographic, psychological and behavioral characteristics, as well as his or her managerial skills and technical know-how are often cited as the most influential factors related to the performance of an SME (Man, Lau et al. 2002).

3.0 Research Methodology
This study is a preliminary study of intellectual capital and innovation in SMEs. Prior to the main study, a pilot study was undertaken which helped with refining data collection plans with respect to both the contents of data and the procedure to be followed. The pilot study explored the main challenges faced by SMEs in innovation. 12 respondents from various backgrounds were taking part in the questionnaire survey. The sample consisted of six owners, three co-owners, one manager and two executives. The SMEs involved were sole-proprietor (4), family-owned business (4), partnership (2) and others (2). Most of the participants are degree-holders (5) and two are either Masters or Professionals. Most of the sample has been in business for more than 4 years.

4.0 Findings/Discussion

Intellectual capital

Human capital
Human capital is the foundation of SME (Cohen & Kaimnenakis, 2007). Surviving on a small scale, SME tend to be creative, aggressive in exploiting the opportunity and produce more products compared to their competitors. Its size give SME an advantage to create friendly atmosphere, be creativity and have a close network to nurture cooperation of the employees plus. This also gives its employees equal opportunity to be creative. Not only that, As found by Desouza and Awazu (2006), employees of SME tend to be loyal and satisfied with their current job which is contrast to most studies that turnover in SME is high.

Structural capital
Even though, SME is said poor at storing knowledge (Kuan & Aspinwall, 2003; Levy, 2003), this preliminary study found that SME do keep their records of good practices in handling issues in future. In line with literature review, the culture of SME is not only creates mutual supports among its employees but also provides support and encourage creativity in the organization. Technology is important in SME as it helps SME to set a product quality level and produce new products and services.

Relational Capital
Limited in financial and expertise, SME are very focusing in their target market. Compared to large organizations, SME is closer to its customers therefore they are able to capture information on customers and market as their source of expertise and know-how. Therefore SME are most customer-focus and aware of their competitors’ actions. Government support is important to SME. As SME is lacking of expertise, innovation supports by government, R&D centre and universities are crucial to SMEs. Again, subsidies and financial supports are very important in assisting SME to be competitive. The government training programs also help SME to be creative and innovative.

Cohen & Kaimenakis (2007) found that only human capital and organizational capital and human capital and customer capital directly interrelate in SMEs. 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.

Innovation
Most of SMEs agreed that they produced unique and innovative features to their customers. And most of their innovation is not total new or radical. As SMEs are closer to their customers, their products are fulfilling their customers’ needs. Government supports help SME to produce high quality and technology superior products. There are mixed response in producing new products and new services. However, SMEs are not innovative in their operation processes and refining their existing products. Overall, SMEs’ innovations are not risky. However, Lin & Chen (2007) found that 53.5% SMEs of manufacturing and services industries in Taiwan engaged in a combination of incremental and radical innovation.

The relationship of intellectual capital, innovation and organizational performance is not shown clearly. As Bontis et al (2000) showed the relationship of structural capital and organizational performance which indirectly shown innovation capital relationship to organizational performance.

Entrepreneurial orientation positively affects innovation thus lead to higher SMEs’ performance (Alvonitis and Salavou 2007) which in line with other researchers.

Davenport and Binny (1999, in Humphreys et al (2005) stated that SMEs increasingly need to develop their innovation capabilities beyond that of technical innovation. Furthermore, 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). 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).

Government plays a very important role in assisting SMEs to be competitive, either in terms of financial or advice (Humphreys et al, 2005). Even though SMEs are known lacking of financial capabilities, financial supports and marketing/management advice are not considered crucial for SMEs. Instead, government assistance such as trainings, seminars, R&D supports and technical assistance are very important to SMEs.

Human capital contributes more to innovation and organizational performance compared to structural and relational capital.

5.0 Conclusion
This preliminary study gives brief insights of SME in defining their understandings of intellectual capital and innovation. By refining their objectives in operating their business, SMEs must understand their own capabilities especially their internal strengths. Their people, their practices and their external supports are important in assisting SMEs to be innovative in order for them to be competitive. Innovation is happening in SME and most of innovation is related to products and service. Incremental innovation is more prevalent. As reported by United Nations Development Programme (UNDP) Malaysia (2007), SMEs in Malaysia used to concentrate domestically but with the elimination of trade sanctions, SMEs in are affected by globalization. Therefore, SMEs should find a way to be competitive globally. No more labor capital but knowledge capital. Innovation is still at infancy in Malaysia. However, the government is taking a big role in helping SMEs to be innovative by providing trainings, mentoring, subsidies and financial supports. Therefore, this study is looking into SMEs’ intellectual capital and innovation that influencing organizational performance. This framework can be applied into SMEs scenario for their long-term competitive advantages. This framework too can assist SMEs in finding their ways in improving their internal resources, capitalizing their strengths and capturing opportunities with the support of authority.

Reference


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