INVESTIGATION OF TECHNOLOGY MANAGEMENT PROCESS IMPLEMENTATION IN SMEs IN KLANG VALLEY

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ABSTRACT

SMEs uses various process and methods to manage its technology manangement process. This study demonstrate a survery of SMEs in Klang Valley that shows how companies identify, monitor and asses process and methods of its technology management process in the category of technology, economic, customer needs and competitors.

Keywords: Technology management, SME

INTRODUCTION

Small and Medium Enterprises (SMEs) are the backbone of the country, comprising 97.3% of total business establishment in Malaysia. In 2015, SMEs contributed 36.3% to GDP valued at RM385.6 billion from slightly below 30% in 2005, while contribution of SMEs to employment rose to 65.5% (2005: 56.8%) and SMEs export rose to 17.6% (2010: 16.4%). Innovation and technology adoption is closely linked to the performance of SMEs and the ability to innovate and adopt technological changes is a crucial factor determining the growth of the business. Technically, SMEs have the advantage to respond and adapt more quickly to the latest business mode and technological changes due to small scale of their operations. In many advanced countries, new innovations and ideas come from small businesses.

Technology is a resource that, like financial and human resources is pervasively important in organisations. Managing technology is a basic business function. Recognizing the critical role of SMEs in Malaysia, technological advancement can change the competitive standing of SME in short and long term. As a result, technology management is viewed as a drivers for business growth and effects on business operations. In order to enhance the quality of

products and services as well as cultivate a strong business reputation, SMEs must keep up-to-date with the latest technologies. No matter the size of SME, technology has both tangible and intangible benefits that will help company profitable and sustainable.

However, the well-known main factor constraining SMEs from innovating and adopting new technology is the high cost involved. This implies the need to develop a technology strategy, analogous to financial and human resource strategies. Technology strategy serves as the basis for fundamental business strategy decision to establish the necessary technological capabilities and maintain competitive advantage. It is a function of quantity and quality of technical capabilities and competences. Strategy making concerning technology can be conceptualized as an evolutionary organisational learning process. Experience obtained from enacting technology strategy feeds back to technical capabilities and technology strategy.

PROBLEM STATEMENT

As SMEs in Malaysia face increasing challenges and competition as the result of globalization, it is apparent that they need to upgrade their technological capabilities. Technology provides SMEs with the opportunity to increase their efficiency and productivity with tools to better manage their business. Successful SMEs are those who innovate by adopting technologies that give them a market competitive edge (Tidd and Bessant, 2010). SMEs that innovate show growth and sustainable performance compared to those whose not. Despite concerted efforts by the government to promote technology adoption among SMEs in Malaysia, there is no clear indicator of its success. For example, a study done in 2012 on exploring the common technology adoption enablers among Malaysian SMEs found low level of technology adoption. (Nor H. A., Eta W. & Alina S., 2012) Similarly, recent studies on specific technologies such as ICT, internet and ecommerce (Hashim, J., 2007) also showed low adoption. Furthermore, in terms of R&D activities, SMEs are still lagging behind.

Technology has been recognized as one of strategic resources for sustaining competitiveness among firms regardless of their sizes. Challenges in globalizations and strategic alliances are some of the issues underpinning technology management among SMEs. However, existing models (Davis, F. D., 1989) on technology development, innovation and aquisition have not provided sufficient insights on factors that could influence the successful technology management among SMEs in Malaysia. Varying levels of technology and high industrial diversity hinder comprehensive understanding on common factors affecting technology management. Furthermore, the uniqueness of SMEs characteristics especially in terms of pervasive influence of SMEs' owner-managers may hinder the success of technology management within the enterprise.

The issues and challenges of SMEs in Malaysia are poor technology adoption by SMEs; limited technical competencies of employees; problems in compliance to regulations; lack of needs-driven R&D; high dependence on foreign labour as well as imported products; low level of awareness of outreach programmes for technological innovation; and inadequate linkages and collaboration among public research institutions and universities in providing technological services to SMEs.

SURVEY ON THE PROCESS AND METHODS OF SME TECHNOLOGY MANAGEMENT PROCESS

SMEs implement various processes and methods to manage its technology manangement process. Typical technology management processes are foresight, planning, development and commercialization. Good companies manage their technology management process regularly by making sure all information are documented to prevent loss of important information and to enables tracking of the progress of company activities. SMEs can use various methods to support the different technology management process.

Methods are used for evaluation and assessment of technologies to support decision making in the technology management process. Typical methods include pre-selecting relevant technologies, initiating development of technologies in specific projects or company's technical department, portfolio or cost benefit analysis, etc. These methods are also used to identify, monitor and assess the trends, customer needs and competitors.

A survey from 15 SMEs in Klang Valley was conducted to investigate how these companies identify, monitor and assess process and methods of its technology management process in the category of technology, economic, customer needs and competitors. Three levels are being used; unstructured, structured and well-structured. Unstructured level denotes that the company identifies their technology management process and method in an informal way, in which no information is documented.

Structured level denotes that there are specific persons in charge in the company and all information are documented. Whereas, the well-structured level denotes that all information are documented, delegated to relevant personnel in the company and the processes are carried out regularly.

Figure 1 depicted the statistic results of how SMEs manage its technology management process and methods. Referring to Figure 1, there are only 3 to 4 companies from 15 companies of which are well structured in term of managing their technology management process for all categories.

In term of technology, 8 companies manage unstructurely. This is quite obvious in SMEs since most SMEs did not have their own R&D department. The most common management practices in SMEs tend to focus on the company owner's skills at the first place. The results also show that 8 companies tend to have their customers' needs in a structured way. This may result from the company's obligation to understand their customers' needs. In the economic and competitors categories, the result shows similar emphasis of the companis in managing its technology management process.
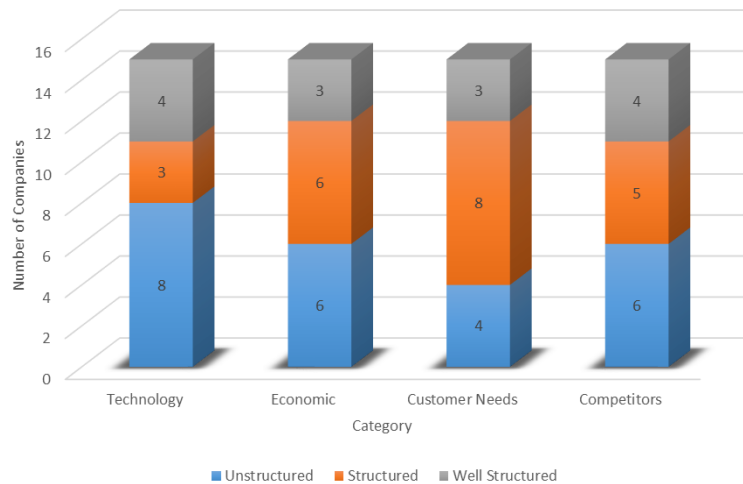
Figure 1: Category of how SMEs manage its technology management process and methods

CONCLUSION

To conclude how SMEs manage its technology management process differs from one another. Anyhow, in term of technology, SMEs need to improve. SMEs in developed country in contrast usually have strength in the area of technology and most SMEs in those country start their business from invention or innovation of technology. SMEs needs to have technology management process structurely in place. Technology management progress implemented in SMEs should be progressively monitored to ensure the effectiveness and impact of technology to the company's sustainability and growth.

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