

# KNOWLEDGE MANAGEMENT PROCESS OF MALAYSIAN MANUFACTURING SMES: A REVIEW

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**Abstract-** As the Malaysian government had announced its visionary approach towards creating an innovative and productivity led a work force in its 10 Malaysian Plan, the need for analyzing the various characteristics of knowledge-centric organizational spinoff as decision-centric organization has become inevitable. The primary objective of this study is to review empirical studies focused on knowledge management (KM) process among Malaysian manufacturing SMEs; to identify (a) the supportive programs and policies to promote knowledge management among Malaysian SMEs, (b) the common characteristics of KM practices among manufacturing SMEs in Malaysia, and (c) internal and external factors contributing KM practices by manufacturing SMEs in Malaysia. The findings of this study will provide a framework to explain the association between internal and external factors contributing KM practices by manufacturing SMEs in Malaysia and how Malaysian manufacturing SME's transforming from knowledge-centric organizations to decision-centric organizations.

**Keyword:** Knowledge Management, Manufacturing SME's

## 1. Introduction

Small Medium Businesses (SMEs) have an important role of economic development in this country. According to SMEcorp, most of business establish in Malaysian is consist of Small Medium Enterprises. SMEs can separate into two sectors which are manufacturing, manufacturing related services and agriculture industries; and services (including ICT) and primary agriculture. In 1999, the SMEs was defined as Malaysian owned companies/ institutions with net assets or shareholders' funds of RM10 million whilst prior to that the shareholders' funds or net asset was limited to RM2.5 million. SMEs in the manufacturing sector in Malaysia involved a wide range of activities, from simple processing and production of raw materials to assembling and manufacturing of electrical and electronic appliances and components (Che-Ha & Mahmood, 2012).

Knowledge management was establish in Malaysia around 1990s by 4<sup>th</sup> Malaysian Prime Minister, Tun Dr. Mahathir bin Mohamad in achieving Malaysian Vision 2020. Knowledge Management was establish in Malaysia in the late 1990s when large company such as Microsoft and Hewlett-Packard brought their KM practice, processes and application to the country (Salina & Fadzilah, 2010). With the awareness of KM, the systematic management of organizational knowledge, whereas a strategic corporate asset, not to be taken lightly; can thus be created,

transferred, shared and utilized, in pushing for greater organizational competitiveness, Innovativeness and productivity (Christine, 2011). Originally, KM implemented in large, multinational company size along with SMEs that could affect KM. Conversely, now it becomes outspread business correction and no longer focus only big organization. Therefore, SMEs need to understanding the success factor in applying the KM in order to confirm the success of their effort (Wong, 2005)

Small and Medium Enterprises (SMEs) have an important role of economic development in this country. Knowledge is an intangible asset that hard to be measured (Lee & Choi, 2003). While, Knowledge Management (KM) refers to a multi-disciplined approach toward accomplishing organizational goals by using knowledge effectively. Thus, KM is considered to be most influenced and the key success factor obstacle in achieving an effective decision making. For the reason that, this study is to review empirical studies focused on knowledge management (KM) process among Malaysian manufacturing Small and Medium Enterprises (SMEs).

There are three main objectives of this paper:

- a) To identify the supportive programs and policies to promote knowledge management among Malaysian SMEs
- b) To define the common characteristics of KM practices among manufacturing SMEs in Malaysia
- c) To determine internal and external factors contributing KM practices by manufacturing SMEs in Malaysia.

## **2. Knowledge management, supportive programs and policies in Manufacturing SMEs**

SMEs are one of the sectors that facilitate Malaysia to go forward. However SMEs also have their weaknesses in strive their business. As Zulkifli et al. (2009) state that the previous literatures has emphasized several threats faced by SMEs in the current economic environment which are facing recession, barrier from global sourcing, low productivity, lack of managerial capabilities, lack of financing, difficulty in accessing management and technology, heavy regulatory burden and others. In addition, Edvardsson & Durst (2013) stated that small enterprise are still lack in management style that encourages entrepreneurship and innovation. From previous research, within implement Knowledge Management will give an opportunity to SMEs to survive their business.

SMEs sector seems to be less practiced in terms of knowledge creation, having a more systematic approach to this concept and relying less on social interaction as well as weaker than larger firms on official and proficient discussion in order to share tacit knowledge, since larger firms are tougher in the application of formal KM strategy (Durst & Edvardsson, 2012). All business especially SMEs found that they need to give more attention in knowledge management and social capital (Salina & Fadzilah, 2010). The research by Ayer and Lama (2011) also found

that generally SMEs put into practice KM in their organization and also plan to invest in KM. However, SMEs are still unefficient in utilise the advantages of KM in their organization (Ayer & Lama, 2011). While, (Wei et al. (2011) found that SMEs are still in early stage in implementing KM and therefore they do not aware of all range in implementation of KM.

### 3. Programs and policies to promote knowledge management among Malaysian SMEs

From BNM Annual Report 1999, Malaysian economic shift from traditional economic which is economic based on producing (p-economy) to knowledge (k-economy). K-economic is divided into three main divisions which are intellectual capital, research and development, and customer information (k-customer).

Table 1: Economic Malaysia Changing

Strive to new Economy	
P-Economy	K-economy
Structure: Manufacturing, agriculture, construction, mining and service.	Structure: More on networking between industries based on knowledge especially in services and manufacturing.
Main produce factor: Land, workforce, capital, entrepreneur that keep an eye on conventional economic (F.W. Taylor, Henry Fayol)	Main produce factor: Development human which have intellectual capital, knowledge and turnover added value based on their field ( John Nasbitt, Peter Drucker)
Organization structure: Hierarchy organization and using functional, product, place and produce structure. Management is important asset but worker is just complement.	Organization structure: Organizations are more on networking and horizontal more similar with matric structure and planning will be more effective and efficient in communication.
Marketing: Producing and business resources are in domestic market and producing in mass manufacturing based on combination of technology and resources.	Marketing: Production and business resources are in global market and production is a combination of advance technology, resources and intellectual property.
Competitive advantage: Low workforce rate and excess of raw material that influence operational cost and price determining.	Competitive advantage: Production and business resources in market through total marketing channel based on information and IT knowledge to achieve maximum profit.
Operation process: Based on operation focusing on increasing in productivity and operation profit. Operation based on mass production to satisfied consumer.	Operation process: Based on individual k-work, skill and expertise through specification also based on e-commerce which able to increase productivity and individual potential.
Operational Cost: Most of organizations focus on mass production to create a minimum overhead cost, increasing in quality and to achieve economic scale.	Operational cost: Organization focus on way to minimize production cost through maximizing quality, living status and effective economical marketing.

Globally, SMEs are ecounter of knowledge on legal matter. In Malaysia, there is no institution or agency that direct about pertaining to legal specially to SMEs going abroad. It is harder to assess potentials and threats of worldwide business to the company without adequate knowledge, information and systematics analysis. The council or NSDC have decided to move forward SMEs to higher value-added industries by encouraging development of knowledge-based economy which is SMEs that have more than 20% of it staff is knowledge worker, using ICT in product development and provide systematic training and learning of technical skill for their employee (Zulkifli et al., 2010). Furthermore, Salina and Fadzilah (2008) showed that the competitiveness of SMEs depends on the quality of knowledge they apply to their business process. Knowledge Management Process (KMP) is one of organization business process and it was essential in achieving effective knowledge management. Knowledge management process encompassed of knowledge acquisition, conversion, application and protection (Salina & Fadzilah, 2008).

#### **4. Internal and external factors contributing KM practices by manufacturing SMEs in Malaysia.**

Knowledge management processes is one of the business process and it are needed in achieving effective knowledge management. Knowledge management process consists of knowledge acquisition, conversion, application and protection (Salina & Fadzilah, 2008). A strategic corporate assests not to be taken lightly in achieving greater organisational competitiveness, innovativeness ans productive. Thus, by implementing KM, this assests can be created, transferred, shared and utilised (Ling & Shan, 2010). Tacit knowledge are available in every side of SMEs that have relationship between their people. Eventhough knowledge management will benefit SMEs as they are rich of tacit knowledge, they are still lacking in expertise, financial capital and infrastructure. Subsequently, SMEs have great networking, knowledge sharing is essential especially in an organization (Nghah & Jusoff, 2009).

In different study, Koh and Gunasekaran (2006) summarized that knowledge management method for organizing uncertainty in manufacturing enterprises was recommended and established. The knowledge management approach comprises of a knowledge-enriched manufacturing system that involves of a knowledge-based planning module and an execution stage. A reference architecture and intellectual agent were created to store, implicit knowledge and create explicit knowledge in a suitable manner. Technologies cannot trace tacit knowledge of the managers unless some of sort knowledge management tactics are set up. It can be well known that the implementation of knowledge management would balance with the adoption of advanced technology to reduce uncertainty. As stated by Koh and Gunasekaran (2006) learning process needs to be implanted as well as the knowledge management approach has completed this need by using intelligent agent to create explicit knowledge. Due to that, manufacturing organizations should use both tacit knowledge simultaneously with the explicit knowledge that is generated by an intelligent agent, in order to exploit the knowledge management approach for manage uncertainty.

According to EPU (2009), there are four knowledge enablers and four knowledge action that can bring two knowledge-driven outcomes.

The knowledge enablers are as follows:

1. Human capabilities: Ability of workers to participate actively in Knowledge-intensive activities.
2. Knowledge leadership: Commitment of management in championing knowledge-driven efforts.
3. Technology: refers to the use of advanced technology to do things better.
4. Knowledge Environment: External aspects that influence actions at the firm level.

The Knowledge Actions:

1. Knowledge Generation: Generating new knowledge through R&D, process learning or other mechanisms
2. Knowledge Acquisition : Compilation of information, particularly from external resources
3. Knowledge Sharing: extent to which knowledge is shared (or transferred) via electronic information mechanisms and via team work or other organisational structures and mechanisms which encourage sharing information.
4. Knowledge utilisation: ways and extent to which knowledge is utilised and capitalized on in a firm's practices and decision making process.

The knowledge outcome:

Stresses that effective change is the result of effort to influence knowledge generation, management and usage. There are two set outcome:

1. Innovation: Any application of knowledge and creativity towards the development of new products, processes, services and organizations outcome
2. Economic performance: Measure of knowledge driven outcomes such as increased sales profit, gain in market share, improved value-added, or change in value wage levels.

KM create the interaction between technologies, technique and people (Bhatt, 2001). Research finding by Alavi and Leidner also point towards the firm can be seen as a knowledge system engaged in knowledge creation, storage, transfer and application. Knowledge Management System (KMS) is the Information Technology used in Knowledge Management activity and in organization; KMS are needed to facilitate the sharing transfer of knowledge (Assegaff et al., 2012; Salina&Wan, 2008). In common, knowledge management systems (KMS) are IT that enables organizations to manage effective and efficient knowledge. The Knowledge Management System also benefits customers and internal staff directly. To personalize a product or service for a customer means to make a unique decision about how to interact with them. Effective organizations also support their people by ensuring their work effectively on the highest value tasks they have (Assegaff et al., 2012). People that lack in understanding benefit of using KMS makes they unaware about KMS. Besides, by using KMS constantly, the future use of KMSs in area of knowledge holder, knowledge sharing, contribution to the system, codify and storing knowledge, knowledge creation and KMS habit (Assegaff et al., 2012). Research finding by Wafa and Akram (2011) also point towards the Information Technology creates the infrastructure to support capturing, storing and sharing the knowledge. By updating the current technology to effective and efficient technology, organization will keep success and competitive.

ICT play important role in assisting SMEs in creating opportunities and combating competitors pressures for business. It shown that ICT are very crucial for supporting KM adoption (Hsieh et al., 2009).

## **5. Knowledge Management and SMEs Manufacturing Performance**

Businesses are not realise about real implications about what KM may have. Corporate performance is a multidimensional concept and considers firm's position regarding to competitor and measured by the speed of which the organization can develop knowledge-based competencies (Salina & Fadzilah, 2010).

Currently, knowledge management is viewed as an important aspect that carries extraordinary value and therefore should not be ignored as compared to other tangible assets such as land and capital. Hence, knowledge composed with transformation and globalization has become the most important resources in achieving organizational goals. Bhatt (2001) has demonstrated that KM as "a process of knowledge creation, validation, presentation, distribution and application". The five phases in KM will let an organization to learn, reflect and unlearn and relearn. In fact, it's considered as needed for building, maintaining and replenishing of core-competencies. KM creates the interaction between technologies, technique and people. In addition, IT can capture and distribute information instantly, but it has limited information interpretation. Therefore, the company needs to steadily integrate the principle of KM over the company implanted activities to create added value to their company performance such as product and customers services. The changing of interaction pattern in their favour will make managers able to leverage knowledge to get the competitive advantage of organizations.

## **6. Conclusion**

KM which is known as source to remain as competitive advantage has attract attention and was suggested to implement in business process including SMEs in Malaysia (Ling & Shan, 2010; Salina & Fadilah, 2008; Adila & Peter, 2004).As reviewed study above, knowledge management process ia a part of business process that need to highlight. KM activities can benefit to SMEs with regard of employee development, innovation, customer satisfaction and business growth (Edvardsson & Durst, 2013). Due to their small organization, by gaining new knowledge SMEs has a potential to compete with other businesses by offering innovation product(Salina & Fadzilah, 2008).

Most of the organizations realize about the importance of knowledge management as a key success in organizing a corporation. However, there is a little study on the importance of knowledge management in driving business as an efficient organization (Tubigi & Alshawi, 2014).Hence, the above argument statements strengthen the need for knowledge management in a way to be efficient. The organizations cannot afford to remain only knowledge gaining, but need move towards effective organizations. This will take place with incriminate of the

knowledge workers and the kind of knowledge management system in an organization (Taylor, 2013).

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