KNOWLEDGE MANAGEMENT DRIVERS FOR ORGANISATIONAL COMPETITIVE ADVANTAGE

Tan Nya Ling °, Goh Choon Yih, Uchenna Cyril Eze, Gerald Goh Guan Gan and Lee Pei Ling

Multimedia University, Malaysia

Abstract
The term “knowledge” in knowledge management (KM) is seen as the ultimate power that propels unprecedented growth in a knowledge-based economy, be it in the growth of an organisation, industry, or even country. From organisational perspective, KM has been described as a set of processes directed at creating, capturing, storing, sharing, applying, and reusing knowledge within an organisation to ensure better management of knowledge resources. Organisations should realise the importance of effective KM since the cost of ignoring it is enormous. This paper aims to identify and examine key KM enablers in organizations by reviewing related research and providing focused perspective on the relationship between developing these drivers and gaining competitive advantage in the marketplace. We will analyse a set of KM drivers namely culture, structure, people, trust, and information systems (IS). We hope that organisations would derive value from identifying specific aspects of the organization that may be developed to encourage effective knowledge management in the contemporary business landscape. As industry competition increase, organizations must develop functional strategies to gain and maintain an edge over rivals. Developing and leveraging on key KM drivers would enable organizations to achieve their performance objectives.

Keywords: Knowledge management; KM drivers; Competitive advantage.

JEL Classification Codes: D8; D20; M15; M21.

1. Introduction
Since the beginning of the 1990s, the term knowledge management (KM) has indeed become a buzzword as every organisation explores ways to increase market share and outperform competition. Since then, KM is seen as a trend in managing knowledge for achieving organisations performance objectives. Ideally, KM is challenging to understand or practise, as there is no proven best practice for managing knowledge. Basically, KM includes the fundamental processes of creating, capturing, storing, sharing, applying, and reusing of knowledge. The key aim of KM is to avoid reinventing the wheel and to leverage increasing organisational knowledge for a more well-defined and informed decision-making.

Knowledge is viewed by organisations as a fundamental basis for competition, in terms of vital strategy and competitive resources (Ipe, 2003, Storey, 2005). In recent years, knowledge is seen as a crucial factor that organisations are embracing to create and maintain organisational competitive advantage (Beckman, 1999, Chuang, 2004). Researchers and practitioners agree that knowledge enables organisations to gain and maintain competitive advantage (Argote and Ingram, 2000, Argote et al., 2000, Chou et al., 2005, Davenport and Prusak, 2000, Nonaka, 1998, Sabrina and Matthew, 2005). Therefore, in gaining competitive advantage, organisations should be able to use the best of their knowledge to differentiate company performance in terms of profit-making (Freeman, 2001).

In a knowledge-based economy, success in business depends much on one’s ability to exploit knowledge. Knowledge originates in human being and the only sustainable advantage of organisation is what people know and what they do with it. Knowledge is seen to be the most important resource a company has and unlike traditional assets - land, labour, and capital, knowledge has greater value. Nowadays, organisations have been trying to find ways to locate, organise, transfer and leverage knowledge throughout the entire organisation.

° Corresponding author. Tan Nya Ling . Faculty of Business & Law, Multimedia University, Jalan Ayer Keroh Lama, 75450 Melaka , Malaysia. Corresponding author Email: nltan@mmu.edu.my
Evidently, in spite of organisations’ various investments and initiatives, they are still unable to grasp the benefits of knowledge. As a result, the key idea for organisation to succeed in a knowledge-based economy is to fully understand that knowledge has the potential to grow dynamically, thus it is important to manage it successfully in this knowledge era. Numerous researchers such as Alton and Dion (2008) highlighted that organisations such as Buckman Laboratories, Texas Instruments and Dow Chemical had been successful in leveraging organisational knowledge for better performance.

The objective of this paper, therefore, is to highlight key drivers or enablers of KM. It is undeniable that managers face challenging and daunting business conditions as they conduct operational and strategic functions. Therefore being able to identify and enforce key KM drivers would enable the creation and maintenance of organisation's competitive advantage. This paper, besides explaining the concept of knowledge and KM, also takes the opportunity to highlight the importance of KM drivers to ensure better management of social and technical perspective in relation to knowledge resources. It describes the key drivers of KM: culture, structure, people and information system (IS).

2. What is knowledge?
Numerous prominent scholars and philosophers are still finding it difficult to provide an exact definition of what knowledge is all about since knowledge was treated earlier as just a “black box” which enabled the transformation of inputs to outputs (Davenport and Prusak, 2000). However, in the context of knowledge within organisation, Davenport and Prusak (2000) did managed to point out that knowledge is a fluid mixture of experience, values, contextual information, and expert’s insight that provides a framework for evaluating and incorporating new experiences and information. According to Anantatmula and Kanungo (2007, p. 192a) ‘Knowledge is widely recognised as a key economic resource and it is increasingly becoming obvious that organisations should have the right knowledge in the desired form and context under all circumstances to be successful’. The whole idea of knowledge is based on the process of learning, thinking, and familiarity of a problem area that appears in a department, division, or in the organisation as a whole (Awad and Ghaziri, 2004) and it should be considered an essential resource for sustaining competitive advantage (Anantatmula and Kanungo, 2007). Despite this, organisations’ efforts to become knowledge-centric are still weak. With this in mind, managers need to equip themselves with capabilities to drive changes in their organisation to enable high competitiveness and profitability.

According to Nonaka (1998), knowledge can be tacit (not easily expressed, codified and formalised) or explicit (expressed, codified, formalised). Explicit knowledge refers to knowledge that has been expressed into words and numbers (Becerra-Fernandez et al., 2004). Apparently, explicit knowledge can be easily shared and codified through many forms (Faucher et al., 2008) and transmitted easily in documents, databases, webs (Tiwana, 2002) and accessible by different employees in the organisation. It appears that explicit knowledge happens to deal with more objective, rational, and technical knowledge. This type of knowledge includes instruction manuals, written procedures, best practices, patents, lessons learned and research findings.

On the hand, tacit knowledge is obtained by internal individual process and stored in human mind, not easy to handle because it is highly subjective, and is based on experience (Choudrie and Selamat, 2004). It is more of an “unspoken understanding” about something, which is difficult to write down. Since knowledge is known as being primarily tacit, it is not easily visible and expressive, therefore tacit knowledge is highly personal and hard to formalise, making it difficult to communicate or share with others (Becerra-Fernandez et al., 2004). In fact, individuals are not aware of the tacit knowledge they possess or of its importance to others, since it is considered sticky and consists of various components such as judgment, values, experiences, intuition, assumptions, and beliefs (Tiwana, 2002).

It is vital that organisations understand ways to integrate both types of knowledge to perform their jobs effectively. Hence, organisations are increasingly developing specific methodologies to convert tacit knowledge into explicit knowledge that can be codified and therefore captured, stored, transmitted, used and be acted on by others. This has fuelled the development of KM methodologies, tools, and applications to be applied into KM.

3. What is KM?
KM is widely regarded as the approach whereby an organisation can leverage the tacit and explicit knowledge of its employees, trading partners, and outside experts for the benefit of the organisation (Ackerman et al., 2002, Bellaver and Lusa, 2001). Basically, KM regards knowledge as a vital asset of
an organisation and systematically develops activities to manage it efficiently. It is concerned with embracing diversified knowledge and cultivating knowledge wherever it resides (Moffett and McAdam, 2003).

There are many definitions by researchers and philosophers on KM, listed in Table 1 below. The definition given by Huosong et al. (2003) explain KM as a set of activities in developing and utilising an organisation’s knowledge efficiently. The goal of KM is to apply effectively an organisation’s knowledge to create new knowledge, which organisations could use to achieve and maintain competitive advantage (Alavi and Leidner, 2001).

<table>
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<tr>
<th>Author/s</th>
<th>Definition</th>
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<tr>
<td>(Lloria, 2008)</td>
<td>“Knowledge management would include information and knowledge-creating systems, as well as strategic management and innovation.”</td>
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<td>(Chen and Hsiang, 2007)</td>
<td>“Knowledge management…the use of e-learning systems within a company, systems, which are extremely beneficial to company growth.”</td>
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<td>(Grudin, 2006)</td>
<td>“Knowledge management includes acquiring or creating knowledge, transforming it into a reusable form, retaining it, and finding and reusing it.”</td>
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<td>(Gottschalk, 2005)</td>
<td>“Knowledge management refers to identifying and leveraging the collective knowledge in a company to help the company compete.”</td>
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<td>(Becerra-Fernandez et al., 2004)</td>
<td>“Knowledge management (KM) may simply be defined as doing what is needed to get the most out of the knowledge resources.”</td>
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<td>(Cong and Pandya, 2003)</td>
<td>“An ability of an organisation to use its collective knowledge through a process of knowledge generation, sharing and exploitation by technology to achieve its objectives”</td>
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<tr>
<td>(Huosong et al., 2003)</td>
<td>“KM is the process of utilizing a company’s knowledge capital efficiently to create business opportunities and technology.”</td>
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<td>(Tiwana, 2002)</td>
<td>“…leveraging knowledge, experience, intellectual assets, and their management.”</td>
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<td>(Newell et al.)</td>
<td>“…improving the ways in which firms facing highly turbulent environments can mobilise their knowledge base (or leverage their knowledge “assets”) in order to ensure continues innovation.”</td>
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<td>(Mertins et al., 2000)</td>
<td>“…all methods, instruments and tools that in a holistic approach contribute to the promotion of core knowledge processes.”</td>
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<td>(Davenport and Prusak, 2000)</td>
<td>“Knowledge management draws from existing resources that your organisation may already have in place – good information systems management, organisational change management, and human resources management practices.”</td>
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4. KM approaches: “soft” and “hard” aspects

In managing organisational knowledge, organisations have adopted various KM approaches to encourage employees’ participation in knowledge sharing activities (Choi et al., 2008). Hlupic et al. (2002) highlight two broad approaches important for KM – “soft” and “hard” aspects. It is argued that both the “soft” and “hard” aspects are crucial for organisations to survive in competitive and continuously changing global business markets. Apparently, the most crucial challenge is the combination of these ‘hard’ and ‘soft’ aspects for effective KM (Hlupic et al., 2002).

The “soft” aspect of KM include culture, structure, and people and focuses on social perspective whereas the “hard” aspect focuses on the technical perspective - information systems (IS) (Lee and Choi, 2000, Mason and Pauleen, 2003). The social perspective requires a holistic view of the organisation and acknowledges that it is necessary to get employees to share what they know to make KM work (Gupta and Govindarajan, 2000). More importantly, it stresses that it is not the technology
that makes KM work, in fact ‘too much technology can overwhelm employees and actually hinder the process’ (Call, 2006, p. 17). Chuang (2004) confirmed that social perspective has a positive impact on organisational competitive advantage.

The “hard” aspect of KM looks at the employment and use of IS to enable KM activities to be conducted within the organisation (Mason and Pauleen, 2003). Call (2006) posits that technical perspective does play an important role in KM as it can facilitate the access and transfer of knowledge. According to Chuang (2004), that “hard” aspect when combined with strong ‘soft’ aspect would result in a powerful organisational competitive advantage.

In a nutshell, effective KM requires a holistic approach that addresses the culture, structure, people, and IS in the establishment and contribution of knowledge for organisational competitive advantage. Evidently, Choi et al.(2008, p. 10) concluded, ‘If organisations want to succeed in carrying out knowledge management practices, they should consider both social and technical drivers’ for effective KM implementation.

5. KM key drivers
Based on the discussion above, this paper identifies culture, structure, people, and IS as the key drivers of KM, which are important to further stimulate the creation, transfer, and sharing of knowledge within an organisation. In the following section, we will discuss each of these functions in detail.

Culture
Culture is the most important and increasingly recognise driver for successful KM. Despite this, it is still the most neglected influencing driver. Culture is the set of commonly held beliefs and assumptions within an organisation (DeTienne et al., 2004). Generally, it is vital that an organisation establish an appropriate culture in the context of KM so as to encourage its workers to value and learn knowledge and to create and share them within an organisation (Bose, 2004).

Similarly, Hall and Goody (2007) found that culture is powerful in determining organisational success. Organisations can use knowledge to develop effective and strategic KM approach by understanding the impact that culture has on its organisational KM in establishing and sustaining competitive advantage (Ang and Massingham, 2007).

For effective KM to take place, employees must be willing to share, create and use the expertise and knowledge available within an organisation Lee and Choi (2003), which in practise is not easy to achieve. Cong and Pandya (2003) ascertain that willingness to share is not a natural act in organisations, thus a culture that encourages knowledge sharing needs to be formed to change the behaviour and attitude of employees.

Since resistance of knowledge transfers is very difficult to overcome, employees still view knowledge as a source of power, especially for reasons such as gaining recognition, prestige or reciprocity in an organisation (Cong and Pandya, 2003). With this, a positive attitude toward sharing of knowledge needs to be inculcated amongst employees. As a matter of fact, in order to ensure successful knowledge sharing, organisations need to encourage employees not only to share their explicit knowledge but also their tacit knowledge that they possess. Smith (2001) argues that if an organisation does not make any clear statement on this matter, employees are likely to share or transfer only explicit knowledge since it is much easier to codify, document and transfer.

Trust
Trust is defined as positive expectations, such as integrity, capability, truthfulness, goodwill and ability that employees have about the competence and reliability of fellow employees as well as within the organisation (Ellonen et al., 2008). Lee and Choi (2003) asserted that trust is an essential aspect of culture that need to be considered in today’s knowledge environment. Trust is a influential factor in determining an individual’s decision on whether to share his or her personal knowledge with others (Choi et al., 2008). Trust may help in facilitating open and substantive knowledge sharing and creation as lack of trust is a key issue that needs to be resolved especially in cross-functional or inter-organisational teams (Jarvenpaa and Staples, 2000). It is seen that lack of trust can be detrimental to the knowledge creation process (Lee and Choi, 2000). Unless an organisation trusts its employees and the employees believes that it is safe to share knowledge, effective KM will not happen. Therefore, trust should by all means increase the prospect of knowledge sharing and transfer (Lucas, 2005) and
knowledge can only be effectively used or manage in a culture that promotes trust. Lucas (2005, p. 90) further explains that trust creates ‘conditions for increased knowledge transfer and ensures its transerral in a form that is useful...’ As trust increases, it helps to alleviate and overcome the fear of risk in knowledge creation (Roberts, 2000). Without a high degree of trust, employees will be dubious on the intentions and behaviours of others (Lucas, 2005). Consequently, trust between employees providing and acquiring knowledge will have a significant impact on knowledge transfers. Therefore, a culture for KM should consists of norms and practices that encourage the free flow of knowledge through trustworthiness amongst employees, resulting in the increased of organisations’ competitive advantage.

Structure
Structure plays a vital role as it is considered to be one of the key drivers in encouraging or inhibiting KM (Lee and Choi, 2003, Nonaka and Takeuchi, 1995). It is also known as a ‘sole source to gain a sustainable competitive advantage’ for managers to organize decision-making power effectively in an organisational workplace (Jian'an and Bei, 2007, p. 1479). Gold et al. (2001) state that structure is an important factor in leveraging technology, thus organisational structures must be flexible in encouraging the sharing of knowledge and collaboration across traditional organizational boundaries. It is therefore crucial to acknowledge that structure does have an impact on KM by affecting sharing and transfer of knowledge within organisation.

According to Mintzberg (1979), structure can be defined as the result of the mixing the ways in which work can be divided into diverse tasks, the coordination of which must subsequently be ensured. It further defines how work tasks are divided, grouped and coordinated (Robbins et al., 2001).

Given that knowledge is important to all organisations and bearing in mind that the way in which knowledge is organised determines the degree to which it circulates within and between organisations, organisations must adopt structures, which allow them to create and transfer as much knowledge as possible.

Centralisation
A centralised structure refers to the degree to which formal decision making in the organisation is held by a small group of people, typically concentrated at the top of the organisational hierarchy (Brooks, 2003, McShane and Travaglione, 2005, Robbins et al., 2001). In short, centralisation refers to the locus of decision authority and control within an organisation (Lee and Choi, 2000). Therefore, centralisation would be able to reduce the communication, commitment and sharing of ideas among employees within an organisation due to time consuming communication channels that causes distortion and discontinuousness of ideas (Pemberton and Stonehouse, 1999). According to Chen and Huang (2007, p. 106), ‘...workers who have the skills, expertise, and work responsibilities would need greater autonomy and self-regulation’ to simulate interactions among workers. This allows them to have the freedom to determine what decisions and actions to make since they have the opportunity to provide the necessary ideas and knowledge by sharing and disseminating what they know.

Therefore, structure that are less centralised would be more favourable and in turn, result in a higher increase knowledge sharing (Chen and Huang, 2007). Furthermore, organisations need to design their structure to be less centralised so that employees will have greater autonomy and to make them feel utterly thrilled to participate in organisational decision-making that leads to better knowledge sharing (Chen and Huang, 2007). It is, therefore, advisable that organisations adopt structures that do not stifle, but allows knowledge to flow and materialise in actions that guarantee success. As a matter of fact, (Lubit, 2001) acknowledge that the potential effect that centralisation has on KM within organisations is undeniable and should be widely recognised.

People
People are the heart of creating and sharing organisational knowledge (Lee and Choi, 2003). Therefore, it is important that organisation effectively manages its employees who are willing to create and share knowledge (Lee and Choi, 2003). The success of KM depends upon people, their willingness and ability to share and utilise knowledge (Cong and Pandya, 2003).

T-shaped skills
It is found that knowledge, competence and skills can be acquired by an organisation that hires employees with desirable skills embodied in them, particularly T-shaped skills (Leonard-Barton, 1995).
People with T-shaped skills are extremely valuable for creating knowledge because they can integrate diverse knowledge assets (Leonard-Barton, 1995). Furthermore, they possess the ability to combine both theoretical and practical knowledge and to see how their discipline of knowledge interacts with others (Lee and Choi, 2003). Besides that, possessing T-shaped skills allows employees to have synergistic conversations with one another (Madhavan and Grover, 1998). Therefore, it enables them to expand their competence across several disciplines and thus create new knowledge for the organization (Lee and Choi, 2003, Madhavan and Grover, 1998). T-shaped skills are both very deep (the stem or vertical part of the “T”) and board (the cross or horizontal part of the “T”), which enables their processors to explore the interfaces between their particular knowledge domain and various applications of that knowledge in a particular product (Leonard-Barton, 1995). The vertical part of the “T” shape ( | ) represents the employee’s expertise on his or her won major area, whereas the horizontal part ( — ) represents the employee’s understanding of other employees major areas (Yang et al., 2008). Consequently, it can be further known that it has the capability to combine or integrate skills or knowledge shared among numerous employees (Yang et al., 2008), which will further promote active communications between employees (Leonard-Barton, 1995). It is further proposed that employees with T-shaped skills are remarkably significant in knowledge creation activities (Madhavan and Grover, 1998) as these employees acquire and are able to integrate diverse knowledge assets to improve the competitiveness of their organization (Leonard-Barton, 1995).

Information Systems (IS)
IS is also a crucial key driver for initiating and contributing to the systematic management of knowledge. It is widely used to connect people together and in sharing information. Undeniably, the rapid development of IS has evolved over the years. IS is pervasively used in organisations, and thus serves as a medium for the flow of knowledge (Lee and Choi, 2000). In today’s knowledge-based economy, IS allows the rapid creation, gathering, storing, retrieving, and availability of the right information, in supporting and assisting collaboration and communication between organisation’s employees (Huysman and Wuft, 2006). However, it is note worthy that technology is just an essential driver, and the deployment of the most expensive and sophisticated IS infrastructure or solutions in the may not result in effective KM, if the system is not managed properly.

IS and KM are strongly bond together as both equally ‘…help the propagation of structured knowledge vertically as well as horizontally within the organisation’ (Yeh et al., 2006, p. 799). Zack (1999) believes that IS plays three significant roles in KM activities, which includes: 1) obtaining knowledge, 2) defining, storing, categorising, indexing, and linking knowledge-related digital items, and 3) seeking and identifying related content. According to Yeh et al.(2006), effective KM requires employees to share their knowledge through IS facilities, since IS can provide communication channels for obtaining knowledge, correcting flow processes, and identifying the location of knowledge carriers and requesters. Thus, by using IS applications such as intranets, extranets, internet, groupware, databases, and virtual communities for communicating and sharing knowledge, it further allows organisations to expand available social networks by overcoming geographical boundaries and achieving more effective collaborative technologies (Koh and Kim, 2004, Pan and Leidner, 2003). As a result, IS can be effectively used to facilitate the codification, integration, and dissemination of organisational knowledge (Song, 2002). Anantatmula and Kanungo (2007)stresses that organisations with reasonable levels of IS infrastructure performed well in their KM efforts with potential for improvement in developing, storing, and transferring knowledge. A well-designed, standardised, fully implemented IS infrastructure for KM can improve project collaboration, information processing capabilities, knowledge discovery and speedy decision making within organisations (Moffett and McAdam, 2003).

In today’s knowledge-based economy, the pervasive use of IS in organisations enables employees to obtain and apply requisite information specific business objectives, thus making IS a key medium for information flow (Moffett and McAdam, 2003). Choi et al.(2008) argued that without IS, it will not be a trivial task to share and communicate knowledge with other members across time and location. Porter and Miller (1998) warned about underestimating the significance of IS, especially in helping to create competitive advantages throughout the entire value chain of an organisation.

6. Competitive advantage and KM
Numerous organisations have recognised that knowledge plays an essential role (Choi et al., 2008) and is a crucial resource in gaining competitive advantage in today’s knowledge-based economy (Alton and Dion, 2008, Anantatmula and Kanungo, 2007, Civi, 2000). Civi (2000) research indicate that achieving competitive advantage ranks high as the most important application of knowledge in terms of its
contribution in attaining the organisational objectives. For a growing number of businesses, competitive advantage lies in the capability to create and apply intellectual expertise (Choi et al., 2008). Organisations should therefore view knowledge as a valuable asset for building competitive advantage in the market. According to Lloria (2008), the strategic objectives of KM vary, such as developing new opportunities or creating value for the customers.

In this paper, we assessed competitive advantage using Lubit (2001) two paths by which knowledge can be used to create and maintain organisational competitive advantage. According to Lubit (2001), organisations are able to use their knowledge resources to not only create competitive advantage, but also build sustainable competitive advantage. He further explains that to create competitive advantage, organisations need to: 1) internally spread tacit knowledge, and 2) create KM capabilities and approaches in fostering innovation.

**Internally spread tacit knowledge**

For tacit knowledge to become core competence for an organisation, organisations must make efforts to share the knowledge (Lubit, 2001). Since tacit knowledge is not easy to imitate, organisation need to capture and transfer it internally. This can be done by employees through observing or participating in situations whereby their actions and the actions of others are seen to affect an outcome of a certain situation. For example, observing an expert in addressing a particular problem or by receiving feedback based on that action taken would help in fostering the development of an employee’s tacit knowledge. This allows the employees to conceive some of the best solutions in developing their tacit knowledge even without the expert’s assistance. Lubit (2001) suggests that to successful transfer tacit knowledge internally, it is vital that organisations realise the value of this knowledge and allocate the necessary resources for it.

**Create KM capabilities and approaches in encouraging innovation**

Based on Lubit’s investigation, KM capabilities and approaches in organisations are the basis for the fast acquisition and spread of new knowledge, and therefore would be able to foster incessant innovation (Lubit, 2001). KM can impact the innovation of products, processes, and structures critical to the success of an organisation. In order to foster innovations, it is thus necessary for organisations to develop a culture that enables employees to share knowledge, thus allowing open communication amongst its people in seeking knowledge through its organisational structure and by making full use of IS in knowledge transfer and storage. As a result, those organisations that are able to apply these will therefore provide themselves with an enduring competitive advantage (Lubit, 2001).

7. Conclusion

Having consistent and reliable KM drivers is crucial in propelling the growth of knowledge in organisations especially in a knowledge-based economy. Organisations need to incorporate effective key KM drivers to ensure better management of knowledge resources in creating and maintaining competitive advantage. Efficient KM approaches can minimise risk of losing valuable knowledge capital, especially tacit knowledge that is critical for organisational survival and growth. Therefore, it is essential for organisations to identify and capture employees’ knowledge because such knowledge would be critical in developing innovative products and services, and in building strong capacity for successful performance. Organizations that commit resources in developing trust, implementing new information systems, attract relevant expertise, establish enabling structure, and builds a culture that enables knowledge sharing, would be positioned to achieve great success in knowledge management applications. Organisations, therefore, should continue to incorporate key KM drivers, which would aid in discovering additional means of gaining and maintaining competitive advantage.

References


