Knowledge Audit and its link to Knowledge Strategy and Knowledge Management

Sulfeeza Mohd Drus¹, Siti S. M. Shariff² and Marini Othman³
¹Universiti Tenaga Nasional (UNITEN), Malaysia, sulfeeza@uniten.edu.my
²Universiti Tenaga Nasional (UNITEN), Malaysia, sitisalbiah@uniten.edu.my
³Universiti Tenaga Nasional (UNITEN), Malaysia, marini@uniten.edu.my

ABSTRACT
Knowledge is considered as the lifeblood of an organisation in knowledge economy. Having the right approach towards the exploitation and management of knowledge will enable organisation to optimally leverage its present knowledge resources in realising the organisational goals. However, many organisations have yet fully benefit from their knowledge resources as they are still unclear on what to do, how to start and where to start with regards to managing knowledge. Knowledge audit can be utilised as the mechanism to explore, understand and appreciate the current and future knowledge resources and requirements, which could later be transformed into a knowledge strategy. This paper aims to show the relationship between knowledge audit, knowledge strategy and knowledge management; and how these interrelated concepts facilitate organisations to translate their business strategy into action plans. With proper understanding of organisational knowledge resources, it helps to steer organisation towards the correct directions of attaining its strategic goals that results in business performance improvement and innovation.

Keywords: knowledge audit, knowledge management, knowledge strategy, business strategy.

I INTRODUCTION
The proliferation of personal computers and evolution of the Internet over the past several decades have resulted in greater reliance and exploitation of information and knowledge in the business environment. In this environment, business partners and allies mutually share, utilise and exploit knowledge for operational, management and decision purposes. Due to these changes in the business landscape, the concept of ‘knowledge economy’ was initiated, which is defined as “production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence” (Powell & Snellman, 2004).

In this business landscape, organisation has to be adaptive and reflective to the changing requirements from customers, legislation and industry in the short span of time. Organisation must be able to understand its current strengths and weaknesses and identify the most effective and efficient ways to leverage these strengths and weaknesses in order for them to accommodate the needs of different stakeholders. Thus, knowledge has become very crucial to determine organisational sustainability and well-being in the knowledge economy.

According to Nonaka (1991), knowledge is the everlasting competitive advantage, and only knowledge-creating company will succeed, whereby having the ability to “consistently create new knowledge, disseminate it widely throughout the organisation, and quickly embody it in new technologies and products”. The notion of knowledge as the key resource of an organisation is also corroborated by Karapetrovic and Willborn (2000) as “the wars of the future will not be waged for land and resources, but more so for information and knowledge”. Besides that, knowledge has become one of the strategic commodities in the current business environment as it provides the means of creating innovative products and services, sustained growth and competitive positioning of an organisation (Zack, 1999), and thus must be well-protected and safeguarded from external leakages (Choi, Poon & Davis, 2008; du Plessis, 2005; McBriar et al, 2003).

Furthermore, according to Swain and Ekionea (2008), a business process can be enriched when knowledge about laws, regulations, industry rules, procedures, work specifications, standards and methods are capitalised on; which necessitates knowledge to be communicated, shared and manipulated effectively in an organisation. However, knowledge can only be shared and communicated when a person has the required knowledge or knows how to obtain the knowledge (Hicks, Dattero & Galup, 2007) and usually people always know more than they can say, and always say more than they can write (Snowden, 2000). Therefore, a proper understanding and management of organisational knowledge must be in place before organisation can leverage knowledge to its
full potential and benefits. The following sections discuss knowledge audit, knowledge strategy and knowledge management and how these elements can be used to help organisation to fulfil its business strategy.

II KNOWLEDGE AUDIT
The concept of auditing is deemed important for managers in assessing the organisation’s well-being as “auditing as a source of information has become very useful in modern business, especially with businesses’ increasing complexities and pressures for continuous adaptation and improvement” (Karapetrovic & Willborn, 2000). In light of this situation, knowledge audit (KA) has become a necessity for any organisation which aspires to embark in knowledge management (KM) endeavour. KA helps organisation to understand their current knowledge conditions and environments by identifying existing knowledge in terms of its format, location, flow, value and use; knowledge gaps (in terms of unavailable but needed knowledge, unused or untapped knowledge); knowledge relevancy, knowledge criticality as well as experts in the organisation. KA also facilitates organisation to better recognise its strengths and weakness and how to leverage them to support its organisational goals and improve performance.

According to Hylton (2005), “knowledge audit is the undisputable first step in a knowledge management initiative yet it has not been sufficiently recognised as being of paramount importance to any and every knowledge management undertaking”. This notion is also seconded by Liebowitz, Rubenstein-Montano, McCaw, Buchwalter and Browning (2000) and Jurinjak and Klicek (2008) that emphasise enforcement of KA is one of the crucial first steps in any KM initiatives. Cooper, Peszynski and Molla (2008) indicate that one of the critical success factors (CSFs) for KM development is to understand the core business processes and knowledge environment of an organisation, which can be achieved by conducting KA. Burnett, Illingworth and Webster (2004) state that KA helps in determining where knowledge exists in an organisation as well as acts as the roadmap in indicating the best route to take in process improvement.

KA is defined as the assessment of current knowledge conditions of an organisation by identifying the types of knowledge, locality of knowledge, flow of knowledge, usage of knowledge as well as identifying the missing knowledge (Wu & Li, 2008; Fai, Chin, Fu and Bun, 2005; Chaffey & Wood, 2005; Mekhlief, Kelleher & Olesen, 2003; Hylton, 2002). Jurinjak and Klicek (2008) have included the strategic usage of KA by including the element of KS in their definition, similarly with Skyrme (1998) that defines KA by looking on how the current knowledge impacts the fulfilment of organisational goals. Based on the various definitions of KA in the literature, it can be summarised that KA is an activity that evaluates the current conditions of an organisation in terms of its knowledge and related resources availability status; the users and owners of knowledge; the flows of knowledge in the business processes; and how knowledge is used for operational and strategic purposes.

However, this research feels that there are some gaps in the current definition of KA available in the literature. The definition of KA that is adopted by this research includes two (2) additional elements, apart from those that have been defined in the literature, namely: a) Scope of knowledge – only knowledge that is related to the core business processes of an organisation will be of the interest of KA; and b) Value of knowledge – focuses only on the knowledge with high potential value in future. Therefore, the definition of KA that is adopted by this research is:

An assessment of the current knowledge elements and knowledge environments in the core business processes of an organisation with the aim of defining a knowledge strategy that coherently supports the strategic goals of the organisation and periodic alignment with business current, future and strategic needs.

There are three (3) main components that made up the definition of KA by this research, which are knowledge elements, knowledge environments and core business process. According to Abdollahi, Rezaeian and Mohseni (2008), knowledge elements of an organisation are those with strategic values and driven by the competitive goals of an organisation. Knowledge elements consist of sources of knowledge, which could be coming from internal or external to the organisation; scope of knowledge, i.e. generic or specialised knowledge; knowledge storage (in computerised systems/technology and in persons’ heads); knowledge seeking and development (i.e. exploring new knowledge as well as exploiting existing knowledge).

The second component is knowledge environments, which include people, roles, leadership, culture, and technology that support the creation, discovery, understanding and sharing of organisational knowledge in the pursuit of positive business outcomes (Callahan, 2002). An organisation may have multiple knowledge environments, which are
the reflections of the different requirements of the core processes of the business units.

The final component is core business processes, which is defined by Perez-Soltero, Barcelo-Valenzuela, Sanchez-Schmitz, Martin-Rubio and Palma-Mendez (2006) as the fundamental activities which are critical to an organisation’s success in ensuring external customer satisfaction and achieving organisational goals; which failure to effectively perform these activities will result in deterioration of an organisation. Perez-Soltero et al (2006) have also identified five (5) characteristics of core business process, which are: a) has direct impact with the organisation’s mission and vision; b) generates revenues or is the most critical to the overall success of the organisation; c) has impact and added value to the organisation; d) satisfies customer requirements and lastly e) has valuable human, technological and information resources.

Based on the characteristics of core business processes, it can be seen that types of knowledge that are used, generated and shared in the core business processes of an organisation are those of high value, importance and relevance to the organisation. These types of knowledge must be well-protected, retained, exploited, shared and utilised by organisations to ensure that they have advantage over the competitors in the market. Thus, this research feels that the knowledge elements and environments in the core business processes of an organisation is deemed important and sufficient to be the focus of any KA endeavour to avoid KA from being too overwhelming and impractical.

III  KNOWLEDGE STRATEGY

In knowledge economy, managers need novel mechanisms to cope with the challenges of creating, sharing and applying knowledge to help their organisation thrives (Donate & Canales, 2012). Knowledge strategy is the specific way a company optimises the transformation of knowledge into distinct competitive advantage, which is tied directly to the company’s business and competitive strategy (Abdollahi et al, 2008; Hansen, Nohria & Tierny (1999). By establishing a coherent and integrated KS, a firm could outperform competitors (Donate & Canales, 2012); manages organisational knowledge resources effectively (Callahan, 2002); and facilitates or supports the integration or differentiation of organisational performances which may improve business process effectiveness (Swain & Ekionea, 2008). The different settings in each organisation calls for different strategy as appropriate knowledge strategy is important to ensure the alignment of organisational process, culture, and KM-related information technology (IT) deployment help to produce effective

knowledge creation, sharing and utilisation (Choi, Poon & Davis, 2008).

According to Zack (1999), the term knowledge strategy first appeared in the management literature in the late 1990s in response to the observation that initiatives in KM were rarely linked with the initiatives in business strategy. Besides that, as many organisations were not able to realise the expected benefits of knowledge, this had led to the conception of knowledge strategy as a new perspective in KM (Abdollahi et al, 2008). The strategy that defines KM initiatives and implementation in organisation are defined varyingly in the literature. Some of the researches termed the strategy as “knowledge management strategy” (KMS) and some other termed it as “knowledge strategy” (KS). Nevertheless, most of the researches use these two (2) terms interchangeably.

However, Zack (2002) makes the distinction between KMS and KS. According to Zack (2002), KS focuses on “content” gap, which is understanding what knowledge that an organisation needs to share, whilst KMS focuses on “process” gap, the activity of sharing the knowledge that an organisation already know or has. Wu and Lin (2009) segregates KMS and KS by looking at the role that the strategy plays in supporting the organisation. According to Wu and Lin (2009), in order to determine whether the strategy defined is KMS or KS, organisation needs to assess whether the strategy developed is to support the business strategy of the organisation or not. If the strategy developed is directly supporting the business strategy of an organisation, then it is a knowledge strategy.

Nevertheless, Callahan (2002) states that it is not necessary to differentiate between KMS and KS as both of them are interrelated and “in practical terms, it is difficult to separate the act of identifying important knowledge and the act of implementing knowledge initiatives to close knowledge gap”. This research corroborates with Callahan (2002) and thus, uses the term knowledge strategy (KS) to indicate both knowledge management strategy and knowledge strategy. This research also adopts Zack (2002) notion of KS and KMS and feels that a comprehensive knowledge strategy must encompasses both “content” gap as well as “process” gap. Based on the various definitions of KS and KMS in the literature, it can be observed that most studies do not make a clear distinction between KS and KMS as some definitions of KS do not explicitly show the link with business strategy such as Hansen et al (1999); AlAmmary and Lance (2007) and Bryson (1995).
In the pursuit of defining KS, this research adopts the generic definition of strategy by Kasten (2009) that states strategy is a general direction set for an organisation and its various components to achieve the desired state in the future. As illustrated in Fig. 1, the main role of KS is to support the business strategy of an organisation with the aim of improving business performance and innovation. Thus, this research defines KS as:

An integrated and coherent approach that supports the business strategy of an organisation by exploring, creating, sharing and exploiting knowledge resources of an organisation in various knowledge environments to improve business performance and innovation.

The definition of KS adopted by this research presumes that KS is an integrated and coherent undertaking, whereby organisation is able to realise its goals and objectives by provisioning the knowledge requirements of an organisation in the most beneficial manner. A well-formulated KS would translate business strategy into action plans that will increase the business performance and innovation of the organisation.

The definition of KS by this research also encompasses the comprehensive perspective towards KS as it would help organisation to fully understand how KS can be used to link the business strategy with knowledge based activities of an organisation; as well as fully leverage on KS (Leung et al, 2010).

IV KNOWLEDGE MANAGEMENT
Effective knowledge management (KM) implementation improves organisational knowledge by ensuring that “the neediest would gain right knowledge at the right time” through sharing and exploitation of knowledge in various ways (Wu & Yi, 2008; Lee & Choi, 2003). Many organisations embark KM primarily for business performance improvement (AlAmmary & Lance, 2007; Yang, 2010) and to attain competitive advantage (Toni, Nonino & Pivetta, 2011; Tat & Hase, 2007). In ensuring the successful implementation of KM, it must be closely integrated with business strategies (Abdollahi et al, 2008; AlAmmary & Lance, 2007; Leung et al, 2010; Tat & Hase, 2007; Haggie & Kingston, 2003) and core competencies of an organisation (Haggie & Kingston, 2003).

Due to the broad spectrum of KM, it has been defined in various ways in the literature. Currently there is no consensus on what KM really is or a standardised definition of KM (Townley, 2001). However, it can be observed that most of the definitions share similar premise, i.e. exploiting knowledge to create value-adding products and services.

Based on the various definitions of KM in the literature, it can be generally regarded that KM is a set of processes that utilise and exploit knowledge to achieve organisational objectives and goals (Davenport & Prusak, 1998; Choi & Lee, 2003); promote organisational efficiency and business performance (De Long & Fahey, 2000; Sveiby, 2001); generate new values from knowledge resources of an organisation (Jurinjak & Klicek, 2008; Dubey, 2003); as well as for profit and rewards (Wiig, 2003; BenMoussa, 2009). However, KM is defined by this research as:

A set of integrated processes to cultivate positive knowledge environments and exploit knowledge resources of an organisation to increase business performance and innovation, with the aim of attaining the organisational goals and objectives defined in the business

Figure 1. Knowledge Audit and its Link to Knowledge Strategy and Knowledge Management Implementation of an Organisation.
strategy.

The definition of KM adopted by this research assumes that in order for KM to be successful, organisation must be able to cultivate a positive knowledge environment where members of the organisation are willing to share, communicate and transfer knowledge to other members in the organisation to fully leverage the individual knowledge to achieve business goals as well as creating innovative outputs.

According to du Plessis (2005), Lai and Chu (2000), and Galup et al (2003), the objectives of KM are: a) to manage and utilise knowledge in efficient and strategic manner; b) to support business processes to meet organisational objectives and goals in a more efficient and innovative manner; and lastly c) to gain competitive advantages over other players in the industry.

KM initiative that is well-planned and structured in the systematic manner helps organisations to take advantage of their employees’ strengths and abilities by increasing employees’ productivity and responsiveness, and at the same time reducing the associated costs. Positive knowledge environment also facilitates better collaboration among staff, which enhance decision making and in the long run will help organisation to achieve competitive advantage and be more innovative.

There are many challenges that organisations must overcome and tackle in ensuring that their KM implementation is rewarding and successful. Some of the challenges can be attributed to the nature of knowledge itself, while some of the challenges can be attributed to the environmental, personal or organisational factors.

Lai and Chu (2000) group KM challenges into two (2) categories, namely organisational barriers and personal barriers. The organisational barriers is sub-categorised into three (3) perspectives, namely: a) planning – barriers that exist due to the improper planning of KM; b) enabling – factors that provide the infrastructure or underlying foundations to initiate KM; and c) motivating – factors that are related to fostering successful KM implementation in the organisation.

However, according to Galup et al (2003), one of the challenges in KM is attributed to the nature of knowledge, which is the wide distribution of knowledge sources (e.g databases, policies, procedures, etc) that exist in various forms (hard copy, human minds, best practices, experiences, etc). Due to this situation, people who are seeking for knowledge may not be aware of the existence of knowledge or do not have the appropriate software to access the knowledge, which may result in knowledge to become under-utilised and obsolete.

On the other hand, Merño-Cerdan, Lopez-Nicolas and Sabater-Sánchez (2007) claim that organisations also face problem in KM implementation due organisational factor, whereby little emphasis is given on the strategy to effectively manage and exploit knowledge, but over stressing on technology and infrastructure to support KM. This is corroborated with Lai and Chu (2000) that state improper planning of KM is one of the main challenges of KM implementation in an organisation.

As such, organisations are strongly advised to be sensitive and attentive in fully understanding the challenges and barriers that may exist in KM initiatives and implementations in their organisations. Failure to fully grasp and understand these challenges and barriers may result in adverse KM outcomes.

As explained earlier, knowledge audit (KA) helps organisations in identifying the barriers and challenges to KM that may exist in an organisation. Thus, it is perceived that by performing KA prior to any KM implementation is a wise effort as it will help organisation to understand and tackle the barriers and drivers of KM in the most appropriate and benefitting manners.

V KNOWLEDGE AUDIT AND ITS LINK TO KNOWLEDGE STRATEGY, KNOWLEDGE MANAGEMENT AND BUSINESS STRATEGY

Toni et al (2011) state that the attainment of competitive advantage by an organisation depends on how the organisational knowledge is being applied and exploited, and not by the amount of knowledge that an organisation has. This notion is also corroborated by Donate and Canales (2012) that state establishing a coherent and integrated KS would help organisation in outperforming its competitors. Figure 1 illustrates the link between KA, KS and KM in an organisational setting.

A proper understanding on the relationships and functions of these three (3) inter-related concepts would help organisations to have a better perception towards their knowledge resources and how these resources could be tapped as competitive advantages and enhance business performance and innovation.

As depicted in Figure 1, business strategy is the focal point in this relationship. Business strategy is the blueprint that predicts the future development of the organisation and drafts plans for emergencies to meet future and uncertain challenges (AlAmmary & Lance, 2007). It is formulated by analysing the competitive environment and organisational context.
and is influenced by the vision, mission and values of the organisation (Tat & Hase, 2007). Therefore, translating business strategy into action plans that are workable and attainable is important as it predicts the business performance and innovation of the organisation.

According to Leung et al (2010), KS is supporting the realisation of business strategy of an organisation by describing the overall approach to effectively develop and use knowledge resources and capabilities in an organisation to align with the needs and fulfilment of business strategy. Different organisational settings would require different knowledge strategies to be formulated. The link between business strategy and knowledge strategy is important as it determines whether the defined KS is reflecting the requirements of business strategy or not; and it is illustrated by one–arrow connecting business strategy to KS in Figure 1.

Leung et al (2010) also assert that by forming a link between KS and KM (as shown by one–way arrow from knowledge strategy to knowledge management implementation in Figure 1), organisation is able to ensure that KM processes are truly aligned with the strategic needs of the organisation and remain responsive to the needs of the organisation and its environment. A mechanism must be established to assist organisation in optimising the transformation of knowledge into distinct competitive advantages and monitor the periodic alignment with other aspects of business strategy. However, many organisations are unsure on how to translate their strategic goals into course of actions (Abdollahi et al, 2008; AlAmmary & Lance, 2007).

KA can be utilised as the mechanism to assess the knowledge resources of an organisation, in terms of identifying the knowledge requirements and the current knowledge provisions of the organisation. This assessment would help organisations into devising plans that are aligned with their strategic goals. This relationship is depicted by the one–way arrow from knowledge resources requirements to knowledge strategy and knowledge resources provision to knowledge management implementation.

The knowledge environments and knowledge resources of an organisation are also closely related (as illustrated by the two–way arrows connecting these two elements in Figure 1) as different knowledge environments (such as business functions, project scope, etc.) would require and provide different type of knowledge resources. Therefore, some knowledge resources may be distinct to a specific knowledge environment while some of them are general and applicable to different business functionalities or job functions.

Upon the execution of KA, the current knowledge environment of an organisation will be ascertained. These outcomes may influence on new KM implementation (in terms of people, roles, leadership, culture and technology deployment of an organisation). On the other hand, the current KM implementation of an organisation may also influence the knowledge environment of the organisation in terms of how people share and communicate knowledge, use of technology, as well as in cultural and behavioural aspects.

Finally, KM implementation in an organisation will then be evaluated based on two (2) aspects, namely business performance and innovation. From the business performance perspective, it will be looked at the financial and productivity related results that are obtained by an organisation due to the implementation of KM and its related initiatives. From the innovation aspect, it will be observed based on the new knowledge developed within an organisation which could be directed either to satisfy customer needs (ie. products) or to improve organisational system activity (ie. processes) (Donate & Canales, 2012). The business performance and innovation may then be used to assess the fulfilment of business strategy, which is illustrated by the one–way dashed line arrow in Figure 1.

VI CONCLUSION

Based on the discussion in this paper, it can be observed that knowledge audit, knowledge strategy and KM are inter-related concepts that must be looked collectively to ensure that they are aligned and supporting the business strategy of an organisation. A number of future research opportunities may be available based on this assumption. One of the prominent area to be looked upon is on the relationship between knowledge strategy and business strategy as currently there are very minimal studies done in this area. Most of the studies found in the literature focus knowledge strategy, knowledge management and knowledge audit in silos, without integrating all these components in a collective manner.

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