Differentiating KMS Strategy from Business Strategy, KM strategy and IS/IT Strategy

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Abstract

The era of the new millennium has witnessed a wide range of the revolutionized technology that affects our lives and the way an organization is conducted. The contemporary business sectors start to recognize the potential use of knowledge management in the new organizational processes. As a result, increasing numbers of organizations pay attention to the creative value of leveraging knowledge as one of their potential assets. Therefore, organizations start to focus on knowledge as one of the important elements in competitive advantage that needs to be utilized efficiently and effectively. They have shown a great attention of knowledge management in their business strategy incorporated with technology. The role of technological tools and applications is essential in supporting and enhancing knowledge management strategy. There has been a transition from traditional information system to new a concept of knowledge management system employed by organization to sustain competitive advantage in dynamic and unstable environment. Further, to shift the paradigm of knowledge management systems concept from business sectors, this study focused on the KMS applications and tools particularly in Institutions of Higher Education (IHE) environment. The purpose of this study is to (a) identify the relationship of business strategy, knowledge management (KM) Strategy, knowledge management systems (KMS) strategy, information system (IS) strategy and information technology (IT) strategy, particularly in the context of IHE, (b) describe those strategies and their relationship based on the context of IHE. This will provide guidance and effective methods for formulating the KMS strategy with the aim to align it with business strategies and ensuring success of its implementation.

Keywords: business strategy, knowledge management strategy, knowledge management systems strategy, information systems and information technology strategy.

Introduction

Recent research has focused more on implementing KM in corporate sectors which identify knowledge as a new weapon in competitive wars (Hijazi & Kelly, 2003). However, there is a paucity of study concerning the KM implementation in IHE context, despite the fact that KM practice is demanded in academic societies. Kidwell et al., (1999) asserted that '*Knowledge management is a new field, and experiments are just beginning in higher education*'. In the

globalization and information era, the function of IHE must be in tandem with external environments in the development of information technology and meet extensive demands from the society (Checkland, 2000). In addition, IHE is always depicted as knowledge-based organization where the role and function of this institution is based on the 'knowledge' agenda (Cronin, &Davenport, 2001).

The value of knowledge can be recognized, if only organizations utilize the knowledge resources and make them available and accessible for the usage of others. However, there is a paucity of study concerning the KM implementation in IHE context, even though KM practice is demanded in academic societies. Kidwell et al., (1999) asserted that 'Knowledge management is a new field, and experiments are just beginning in higher education'. Knowledge management approaches should be implemented in IHE to change its classical paradigm with dynamic external environment change and provide effective services internally to meet market demand as well as enhance entire organizational services (Serban & Luan, 2002). Higher education is one of the potential and ideal places for KM processes since knowledge is a 'culture' among academic societies (Serban & Luan, 2002). Therefore, it becomes a suitable place to apply KM practice to support its functional and operational processes (Kidwell et al, 2000).

The wide acceptance of KM implementation in various types of business sectors has also stimulated some researchers to explore the current KM implementation in IHE context where their core business is primarily related to knowledge activities. If Peter Ducker is among prominent people in the corporate world, Serban , Luan and Kidwell are among the earlier notable authors initiating KM concepts within the HE context. Recently, IHE started to address their need in initiating KM concepts into their business operation to equip themselves to meet the challenges of globalization. Townley (2003) has specifically defined knowledge management in IHE context as 'the set of organizational processes that creates and transfers knowledge supporting the attainment of academic and organizational goals'.

A Conceptual Theoretical Model of KMS Strategy

According to IS literature, the emergence of KMS concept is not totally a new birth of a systems, however it is the evolution of data-to-knowledge concept. The KMS accumulate a lot of parts of IS concept. The KMS strategy approaches basically deals with business domain issues and IS domain issues to capture, store and disseminate organizational knowledge both tacitly and explicitly so that this knowledge can be utilized for specific purposes. The relationship of business strategy, knowledge management (KM) Strategy, knowledge management systems (KMS), information system (IS) strategy and information technology (IT) strategy are depicted in Figure 1.

Figure 1
Conceptual Theoretical Model of KMS strategy
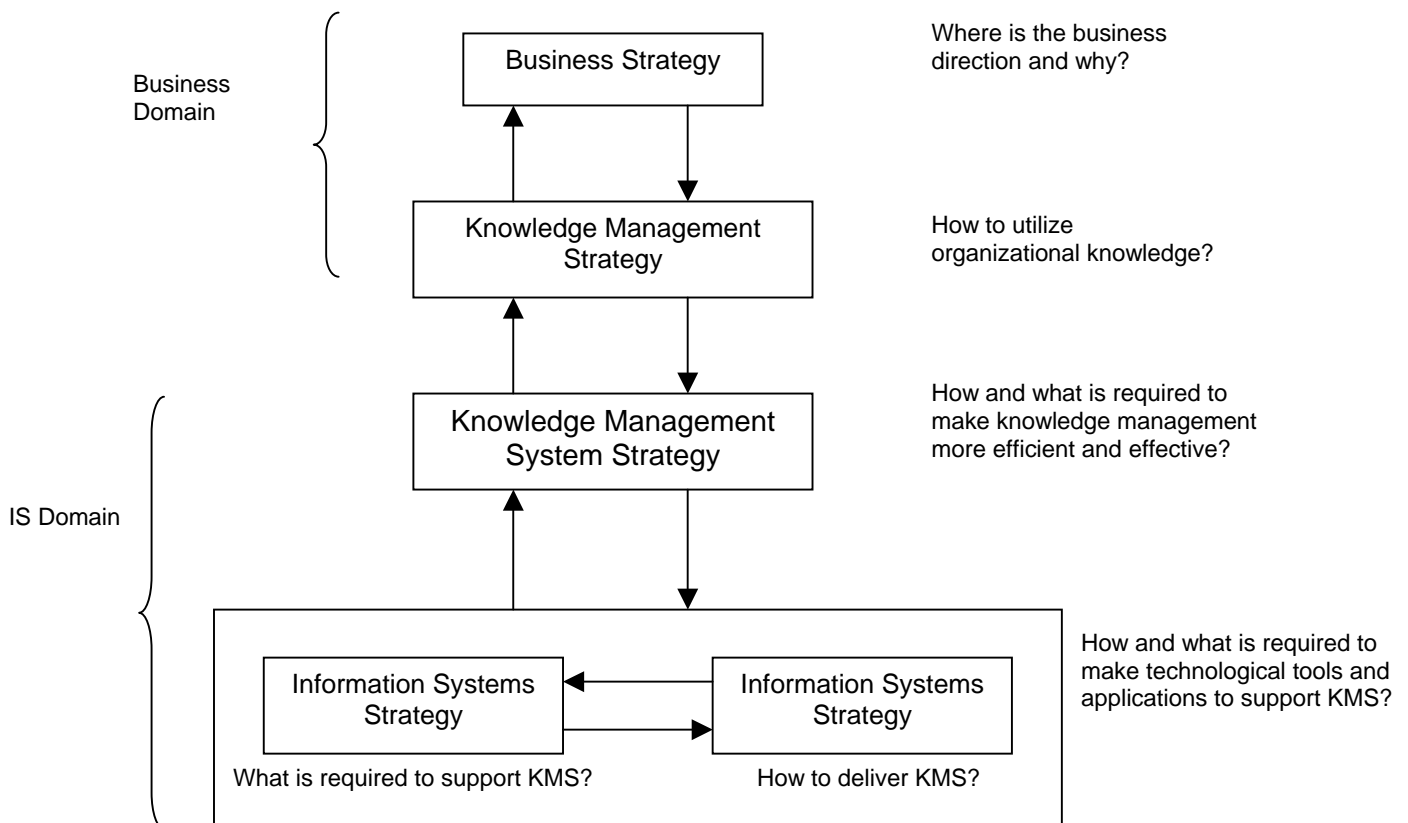
(after Ward & Peppard, 2002)

Business Strategy.

In a nutshell, the essential concept of strategy involves a tactic(s) to utilize appropriate resources in achieving desired goal(s) (Ward & Peppard, 2002). Strategy becomes an essential tool for an organization to fight against competitors (Montgomery & Porter,1991). The concept of corporate strategy is influenced by Andrew's frame of SWOT (strengths, weaknesses, opportunities and threats) analysis and Portal's Five Forces Model (Collis & Montgomery,1999).

In this new millennium, to sustain competitive advantages, organizations have shifted from information to a new concept, namely knowledge management so as to run business effectively and efficiently. Most organizations change their strategy to put primary focus on intellectual assets rather than tangible resources from buildings, machines and land (Nonaka and Takeuchi, 1995). In order to explore and exploit the potential value of knowledge as an organizational asset, it is important to identify and classify the organizational knowledge according to its function. Organizational knowledge is embedded in human resources, business activities and processes and organizational artefacts. The direction of business strategy in the IHE context can be classified into three levels, as depicted in Figure 2. Further, Table 1 gives a description of each level in the IHE strategy.

Figure 2
The level of business strategy in IHE context

Global Strategy (International)

National Strategy (Locally)

Organizational
Strategy
(Within the
Organization)

(adopted from Kwiek, 2003)

Table 1

Business Strategy	Implication
Global strategy	Global KM strategy focuses on business strategy by utilizing knowledge supported by KM strategy and KMS strategy for an IHE to compete with other IHE in the world.
National strategy	Industry KM strategy is focuses on business strategy by utilizing knowledge supported by KM strategy and KMS strategy to compete with other local IHE to meet social-politic objectives and market demand.
Organizational strategy	Organizational KM strategy is focuses on business strategy within the IHE by utilizing knowledge supported by KM strategy and KMS strategy in enhancing internal operational based on tasks and services to achieve organizational objectives.

Knowledge Management Strategy

Bringing KM practice into organizations becomes a challenging task for managers as it needs a suitable strategy before any implementation can be done successfully. However, despite a great deal of successful stories about KM implementation in recognized organizations, there are many other organizations who are struggling and searching for a suitable framework to fit their business needs. Therefore, implementation of KM becomes a problematic approach because it is very costly and a successful result is not a promise (Soliman & Spooner, 2000). The restricted focus on limited issues in embarking KM has been identified as a main failure factor to KM implementation (Stenmark, 2003). The two fundamental implementation strategies are related to IT and organizational issues. Companies focusing on IT issues rely primarily on hard perspective involving technical, systems and infrastructure, whereas companies preferring organizational issues tackle the soft perspective relating to societies and culture within the organization (Davis & Batkin, 1994). In restructuring business structure or implementing information technology to organizations both hard and soft perspectives are essential and also intervening factors. In spite of this, KM implementation major focuses in either one of these perspectives while neglecting the other part. KM is a formalized integrated approach in capturing, storing and disseminating the organization's knowledge so that it can be utilized across organization effectively & efficiently.

The important elements in KM approaches are to make both tacit and explicit knowledge in organization more accessible and available among employees. This knowledge may be used to assist decision making processes or enhance other job performances.

The concept of KM is increasingly important because it provides a 'big' promise to the implementers, particularly to attain and sustain competitive advantage in a challenging and unpredictable world. However, the attempt to implement KM is not an easy approach. It requires organizations to strategically leverage their organizational knowledge to make their investments in KM that can make them better from their competitors. Therefore, an organizational needs a holistic approach to include both hard issues and soft issues to formulate a KM strategy. According to management and computer literature, the successful story of KM practice argued that culture is a crucial element, rather than promising savvy information technology to support various business activities (Fahey & Prusak, 1998; Malhortra, 2003; McDermott, 1999). Fahey & Prusak (1998) in 'The Eleven Deadliest Sins of Knowledge Management' indicate how culture in organizations play an important role in successful KM practice. In a similar line, Malhotra (2003) postulates the particular reasons of KMS failure by soft issues involving people and organization.

However, technology is an important factor that captured various practitioners and researchers' interest to explore and practice the concept of KM. The capability of internet and the advancement of computing techniques have supported various business tasks effectively and efficiently, particularly in the1990s and the early year of 2000 (Griggs et al, 2002). The convergence of evolution in communication and information technology (ICT) has revolutionized the traditional way in human communication that is independent from time and space. In tandem with the rapid growth of technology advancement, in the 1990s the concept of KM has been blooming in research areas and business communities to explore and exploit the potential of organizational 'knowledge' (Almashari and et. al., 2002; Hansen and et al, 1999). Furthermore, there are extensive KM research articles published in various eminent research journals from the 1990s to 2001 (Koenig and Ponzi, 2001).

Earls' taxonomy of KM strategy has precisely identified seven different schools in KM practice: systems, cartographic, engineering, commercial, organizational, spatial and strategic (Earl, 2001). Several good examples from international leading firms are provided to show how technology facilitated their KM practice in so many ways. The six out of seven schools rely on technology to leverage both explicit and tacit knowledge in their KM practice. Conversely, only one school adopted environment metaphor to support knowledge sharing and exchange in a natural way of social interaction among their employees and other business players. Thus, technology is an essential role in most of KM practices, since technology can manipulate and disseminate knowledge in so many ways and make individual knowledge accessible to others employee members. The KM strategies from benchmarking results from 1992-1995 by American Productivity & Quality Center's International Benchmarking Clearinghouse are used to classify the type of KMS strategy in IHE context (O'Dell et al., 1999). The classifications of KM strategies are summed up in Table 5.

Table 5
Classification of KM Strategy

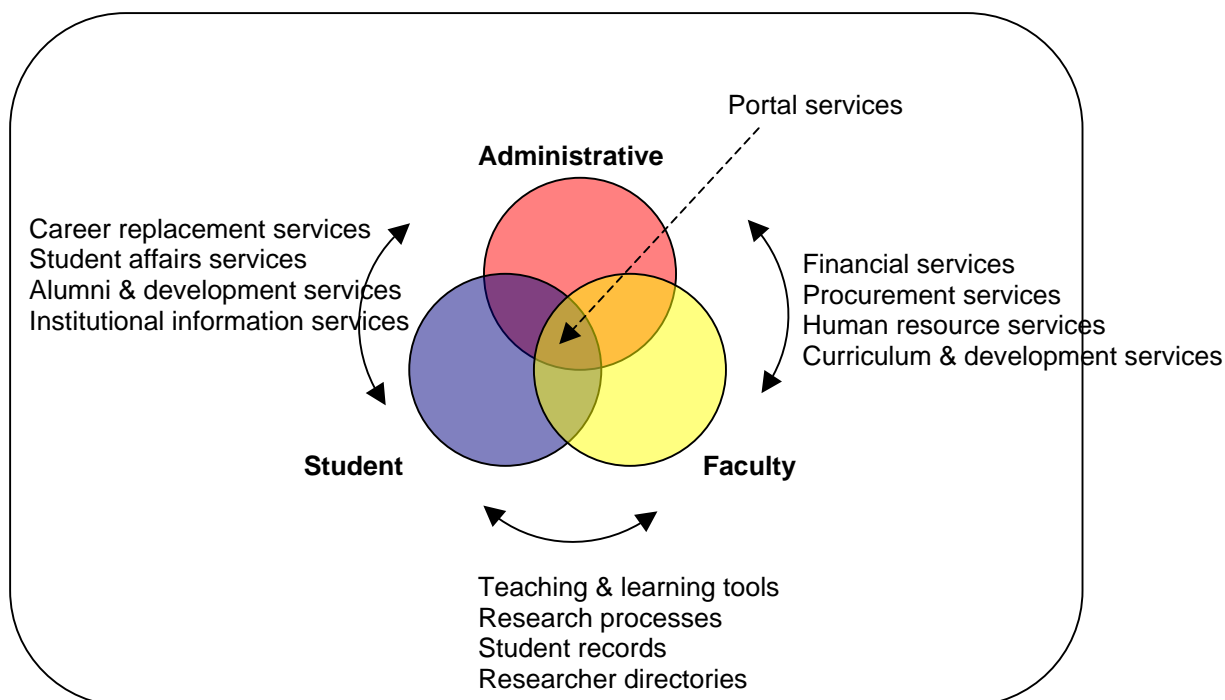| KM Strategy	Description of KM Strategy
Align with Business strategy	The KM strategy acts as the essential ingredients in formulating a business strategy. Organization gives comprehensive focus on KM implementation to the entire direction of organization's people, process and service/products (O'Dell, et al.,1999). For example, Xerox Corporation thoroughly examined the business needs and knowledge needs for KM implementation (Powers, 1999). Furthermore, the company clearly explains the KM concept to all employees to develop a share vision of KM across the organization.
Transferring best practice strategy	The transferring of best practice strategy is concerned with how the organization's best practice can be disseminated throughout the organization so that it can be used and reused by others. It is essential to recognize potential organization knowledge and publicize it to make it available and accessible to knowledge seekers.
Customer-focused strategy	The customer-focused strategy demonstrates the essential process of capturing knowledge about customers (O'Dell et. al, 1999). Furthermore, this knowledge can be disseminated across the organization to identify customers' preferences, needs and demographic areas. By better understanding of customers' knowledge, organizations can focus on suitable customers' characteristic to increase sales and identify customer problems.
Innovation and creation strategy	The innovation and creation strategy emphasizes priority on R&D activity and allocates a significant amount of money to foster research activities (O'Dell, et al 1999).
Intellectual asset management strategy	The intellectual asset strategy focuses on leveraging organizational intangible assets including trade marks, patents, copyright, operational and management practices, customer relations, and other structural knowledge assets. This strategy approach emphasize on renewing, organizing, evaluating, marketing, and increasing the availability of these assets (O'Dell, et al 1999). Earls (2001) identifies the economy school of KM strategy taxonomy as being an intellectual asset management strategy which exploits intangible assets to produce revenue. On one hand, he illustrates an example of how Dow Chemical Company increased its revenue by exploiting patents into profitable intellectual assets. On the other hand, Earls (2001) provides another example from IBM company which commercialized its patents and gained $39 billion of increasing sales over five years.
Personal responsibility for knowledge strategy	The personal responsibility for knowledge strategy suggests the pull strategy to make individual voluntarily participate in KM implementation (O'Dell, et al 1999).

Knowledge Management System Strategy

The KMS strategy shares a common theoretical underpinning in the combination of IS and IT strategy, which provides the direction of various technological tools and applications to support business process and activity in the given context. Through this study, the term knowledge refers to both tacit & explicit knowledge. KMS strategy is in the centre of interest due to the challenges and promises in supporting KM strategy to meet long-term business goals that arise concerning the issues of organizational design, development, application, implementation, and adaptation. This strategy is the specific outcome of IS strategy and IT is to support KM implementation in an organization. The mixture of business domain and IS domain in formulating KMS strategy makes it challenging. Therefore, KMS refers to any information systems that has one or more of these:-

a) Capture and store multiple sources of information from internal organizations and/or external business players.

b) Capable of supporting a rich format of data in both structured and unstructured form.

c) Use network technology to link people across organization.

d) Facilitate KM processes (capture, store and disseminate) in business activities.

e) Provide a collaborative platform to support working activities within internal and dispersed geographical locations.

Is KMS new to IHE context? There are so many traditional ways of practicing KM processes through teaching, research, publication and administrative services. However technology is under-utilized. Most of IHE have already employed IT in place to support various activities from administrative jobs to teaching tools. They have begun using IT which reflects some of the characteristic of KM processes without labelling it as KMS. For example, they used email to share and exchange information, they capture data and store it in organizational database and some of them put lecture notes in websites. These activities are part of KM processes that are facilitated by IT which is referred to KMS. Kidwell et al (2001) have identified potential benefits of KMS in supporting IHE to enhance services in both academic and

administrative objectives (as depicted in Figure 2). KM problem is not easily solved by buying KMS application from particular software companies. However it goes beyond the technological solution which requires the strategic integration of hard perspective and soft perspective including the complex issues of the abstract definition in the KM concept (Hlupic et. al, 2002).

Figure 2
KMS Facilitates IHE Communities

Portal services

Administrative

Career replacement services
Student affairs services
Alumni & development services
Institutional information services

Financial services
Procurement services
Human resource services
Curriculum & development services

Student

Faculty

Teaching & learning tools
Research processes
Student records
Researcher directories

(adopted from Kidwel et all, 2001)

KMS strategy is classified as an accumulation of both IS strategy and IT strategy, which is the essential role of technological tools and applications supply to support business demands to meet the business objectives. This statement is supported by Tsui (2003) which referred KMS as '*any organizational information system that integrates various knowledge processes to solve one or more business problem'.* Thus, KMS strategy is seen as an approach of improving and enhancing ways of using information technology to support knowledge management processes within an organization to improve organizational performance or achieve organizational goals.

Table 6
Classification of KMS Strategy in IHE Context

KM Strategy	KMS Strategy in PIHE context
Align with Business strategy	Align KM strategy and IS/IT strategy to • Align KM strategy to overall IHE business strategy encompassing education, research and internal services. Thus, KM strategy is incorporated into their vision, mission and plan for delivering direction to entire organization's community. It is necessary to establish a shared vision and clearly understand KM concept to ensure the success of KM implementation to the whole organization.
Transferring best practice strategy	Align KM strategy and IS/IT strategy to • Capture and share expertise among researcher communities. • Support decision making and organizational learning
Customer-focused strategy	Align KM strategy and IS/IT strategy to • Span information to students, alumni and community • Link and create community • Support learning activity • Support student information application in registration, financial, residential and curriculum activities.
Innovation and creation strategy	Align KM strategy and IS/IT strategy to • Collaborate researchers • Provide advanced workstations and sophisticated instruments to produce high quality research.
Intellectual asset management strategy	Align KM strategy and IS/IT strategy to • Manage various knowledge resources from multiple locations. • Capture researcher information. • Capture the best practice.
Personal responsibility for knowledge strategy	Align KM strategy and IS/IT strategy to • Involve KM activity in job routines, for example teaching and research activities.

Information System Strategy

The review of literature in IS research contribution comes from the computer science discipline and the psychology discipline, involving social components rather than solely focusing

on technology. Both components give different impacts according to the field of study. Research within IS discipline leads from the starting phase of the employ technological design and development processes to the implementation phase and goes further to the consequence impact of technology. Much of IS research is related to technology and organization, which incorporates a hard stream of computer studies and a soft stream of management studies including human affairs. In comparison to IT strategy, the IS strategy not only focuses on capability and function of the IT to support business processes, but it involves social issues incorporated within the business processes and activities (Ward & Peppard, 2002).

Information Technology Strategy

This approach focuses on the traditional mechanistic approach by a positivist community, which places most emphasis on the technical aspects consisting of hardware, equipment, and software of the information system to support. According to Ward & Peppard (2002), IT strategy is concerned in the area of 'technology supply' to support the 'business demand'.

Conclusion

It is important for an organization to harmonize each type of strategy to deliver an overall business strategy in effective and efficient ways in the challenging and dynamic environment. The progress of technology has transformed many ways of business operations into new effective and efficient manners. A great number of organizations exploit the use of technological tools to utilize their organizational knowledge for competitive advantage. Therefore, this conceptual theoretical model of KMS strategy provides a clear and comprehensive picture of KMS strategy interacted with other related strategies in an organizational context.

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