READINESS OF ORGANISATIONS TO IMPLEMENT A KNOWLEDGE MANAGEMENT STRATEGY: A CONSTRUCTION INDUSTRY OVERVIEW

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Many organizations are now looking towards knowledge management (KM) initiatives to address some of the challenges brought forward by marketplace pressures and the nature of the workplace. Organizations in the construction industry are no exceptions. Such initiatives are often started with the development of a KM strategy. A common short-sight for KM implementation is the readiness level of organizations to adopt KM strategies. KM readiness presents a measure of the degree to which an organization may be ready, prepared or willing to obtain benefits which arise from KM implementation, specifically focussing on the 'soft' people issues, process and technology. In this context, an advanced state of organizational KM readiness is needed for business to expand domestically and internationally; and to compete readily in the global open market. This paper reviews available literature on KM strategies and attempts to reconcile these strategies with what pertains in the construction industry. It also discusses the pervasiveness or otherwise, and importance of 'organizational readiness' in KM strategy implementation. The paper also argues of the importance of a KM strategy to be linked to the wider strategy of the organization. Lessons learned from the literature review have led to some conclusions and recommendations which are presented for the benefit of academia, organizations and for the Malaysian Construction Industry.

Keywords: knowledge management, organizational readiness, strategy.

INTRODUCTION

For organizations in today's modern economy, knowledge is regarded as one of the elements to gain sustainable competitive advantage over competitors. KM within organizations is becoming more crucial since most activities in today's organizations are knowledge-driven, and with knowledge-based industries growing in economic significance, greater focus has been directed towards the acquisition and management of knowledge resources. This thus accelerates the momentum of KM growth in many organizations.

Accordingly, the concept of KM is very relevant to the construction industry, which is also a knowledge based industry that relies heavily on the knowledge of team members involved in a certain project. It has been acknowledged that KM can bring about the much needed innovation and improved business performance of construction organizations (Egbu *et al.*, 1999); and effective use of KM can improve existing processes (Carrillo *et al.*, 2000). Although the benefits have been

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acknowledged by many of construction organizations, little has been attempted at a formal level (Patel *et al.*, 2000). KM implementation in an organization is not easy. A number of things must be considered and prepared before implementing KM. A common short-sightedness for KM implementation is the level of readiness in organizations to adopt KM strategies. KM implementation risk can be minimized if an organization is ready to implement KM, thus an assessment is needed to figure out the level of readiness in the organization for KM implementation. In short, an assessment of an organization's readiness level could serve as a guide to leaders as they plan and implement KM initiatives. The purpose of this paper is to present some views from a thorough literature review of an on-going PhD study on issues worthy of consideration in assessing organizational readiness for KM implementation. It begins with basic concepts of KM, and later emphasizes the need for KM strategies within a construction organizational context. This paper also discusses the importance of organizational readiness in KM strategy implementation. It does not provide a specific checklist because each organization must carefully tailor the design and application to its own needs.

THE CONCEPTS OF KNOWLEDGE MANAGEMENT

Knowledge

A definition of KM is not complete without initially understanding the nuances and differences between data, information and knowledge. 'Data' and 'information' are commonly misunderstood to be synonymous with knowledge. According to Davenport and Prusak (1998), data is a set of discrete, objective facts about events. Data itself does not allow for judgement or interpretation. It represents the raw materials used in organizations for the purpose of creating information. Alavi and Leidner (2001) suggest that information becomes knowledge once it is processed in the mind of individuals and knowledge becomes information once it is presented in the form of text, graphics, words or other symbolic forms. Davenport and Prusak (1998) define knowledge as a "fluid mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower's. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms".

In dealing with different types of knowledge, most KM theorists rule out similar distinctions (for example, see Davenport and Prusak, (1998); Pan and Scarborough (1999); Nonaka and Takeuchi, (1995)). Knowledge can be tacit or explicit. Explicit knowledge is knowledge that has been or can be articulated, codified, and stored in certain medium and can be readily transmitted to others. Similarly, Pan and Scarborough (1999) believe that the explicit part of knowledge is systematic and easy to communicate in the form of hard data or codified procedures. This means that explicit form of knowledge can be transmitted across individuals formally and easily. Tacit knowledge, however, entails knowledge that is difficult to express, formalized or shared (Sveiby, 1997). Tacit knowledge is found embedded in action, commitment, and involvement in a specific context, and it is also derived from personal experiences; it is subjective as well as difficult to formalize (Nonaka *et al.*, 2000). In implementing and practizing KM, these distinctions must be well understood; only information and explicit knowledge can be exchanged through documents, while the more important tacit knowledge can only be exchanged by human interaction. It may be contended that both types of knowledge are important in their own ways and also

interdependent. It is safe to say that if an organization is to excel, the top management has to give equal importance to the management of explicit as well as tacit forms of knowledge being created by the work team while working on different tasks or assignments. Essentially, it is through the combination of both explicit and tacit approaches to KM that an organization can effectively manipulate and benefit from KM initiatives.

Knowledge management

KM and its various aspects have become the subject of much debate amongst philosophers and members of diverse fields (Nonaka and Takeuchi, 1995). Up to this point, there is still no one widely accepted definition for KM neither is it aligned to a definite framework of any discipline. This has attributed to the plethora of definitions that abound in the literature as each author defined KM according to his or her own perspective (Egbu, 2004). O'Dell and Jackson (1998) believe that KM is a strategy to be developed in a firm to ensure that knowledge reaches the right people at the right time, and that these people should share and use information to improve organizational functions. KM can also refer to "any process or practice of creating, acquiring, capturing, sharing and using knowledge wherever it resides, to enhance learning and performance in organizations" (Scarborough *et al.*, 1999). Bounfour (2003) defines KM as a set of procedures, infrastructures, technical and managerial tools, designed towards creating, sharing and leveraging information and knowledge within and around organizations. With these definitions in mind, we might propose that KM involves the synthesis of diverse but supporting procedures, processes, technologies and fields of study needed to bring about a sustainable environment enabling knowledge to be celebrated and exploited to create value for the organization.

Knowledge management strategy

A business strategy can be defined as a high-level, flexible plan that ensures the birth and development of business initiatives. Any subsequent business development within the organization must be focused on furthering the goals of the organization, to ensure the success of the business objectives. KM implementation strategy must be a product of the business strategy, or else the KM initiatives will fail to accomplish the goals that are intangible to the organization (Sunasee and Sewry, 2002). Zack (1999) has used the term 'KM strategy' to express the overall approach a company intends to take to align its knowledge resources and capabilities to the intellectual requirements of its strategy. A successful KM implementation is always credited to good KM strategy, heavily depending on basic visioning and strategizing. It is important to express the vision to the rest of the organization. Goal achievement will me made much easier if a company has a strong vision for it, by and by helping the success of KM to become more quantifiable and measurable. According to Sunassee and Sewry (2002), the implementation of an organization's KM strategy is only likely to contribute to the achievement of organizational goals and outcomes of it aligned to the overarching business strategy of the organization. The KM strategy should be developed to support accomplishment of the corporate strategy, not as a new programme heading in its own direction (Shockley, 2000).

Literature review on organizational readiness

Organizational readiness is now a popular and widely used term with varying definitions. The general definition supplied in the existing literature use the word "readiness" as a necessary pre-condition for a person or an organization to succeed in facing organizational change (Holt, 2000). According to Mohammadi *et al.* (2009),

KM readiness is the ability of an organization, department or work group to successfully adopt, use and benefit from KM. Readiness is an essential part of it and needs to be administered in the early planning phase of KM initiatives. For successful KM implementations, organizations need to assess whether their organizations are readily equipped before embarking on KM programmes. Since KM initiatives involve investments in personnel and infrastructure, supporting KM can be very costly and often do not yield immediate results (Desouza and Raider, 2006). Careful considerations have to be made to avoid failures and unnecessary wastage in KM implementations. In essence, assessment of an organization's readiness could serve as a guideline to leaders as they plan and implement KM initiatives (Holt *et al.*, 2004).

Organizational readiness for KM is considered a critical precursor to the successful implementation of KM in construction industry settings (Siemieniuch and Sinclair, (2004); Kamara *et al.*, (2002). The implementation of KM strategy is not only difficult but also risky if the company do not know what knowledge they have and the importance of it (Fai *et al.*, 2005). Furthermore, Haggie and Kingston (2003) state that organizations will not survive in the modern Knowledge Era unless they have a strategy for managing and leveraging value from their intellectual assets. The authors also suggest that failure in practizing KM strategy may waste resources in developing capitals, tools or policies that will not benefit any organization. Indeed, some suggested that failure to assess organizational and individual KM readiness also might result in significant loss of time and energy of managers dealing with resistance to KM (Mohammadi *et al.*, 2009) and failure to achieve its proposed value.

The following are some examples from previous studies done by other authors regarding organizational readiness. Siemieniuch and Sinclair, (2004) have proposed 14 steps to get an organization ready for KM, by introducing knowledge lifecycle management (KLM) processes. Robinson *et al.* (2006) provide STEPS maturity roadmap as a mechanism for construction organizations to benchmark their KM activities and to develop a KM strategy that would improve their activities. The STEPS maturity roadmap is a structured approach to determine the steps involved and the actions required to implement KM, and to benchmark implementation efforts to achieve the goals of corporate sustainability. Also Holt *et al.* (2004) did a study to develop an instrument for assessing KM readiness. This particular study draws on the literature dealing with KM and organizational change to propose a synergistic tool to measure readiness for KM and apply it in an organizational setting. This tool or instrument considers individual, context, content, process measures and KM attitudes. Mohammadi *et al.*, (2009) further developed a systematic study to determine KM readiness implementation in SME sector. They provide five organizational antecedents for effectiveness such as vision for change, infrastructure, structure, support for change and culture of knowledge. In addition, Wei *et al.* (2006) have investigated the readiness of Malaysian telecommunication industry to adopt KM by investigating the perceived importance and actual level of implementation of five success factors (business strategy, organizational structure, KM team, K-Map and K-Audit), four KM strategies (organizational culture, leadership support, technological infrastructure, performance measurement) and three KM processes (construction, embodiment and deployment). Meanwhile, Choi and Lee (2002) performed a comprehensive experiment to integrate the many views on KM readiness. Their research examined the relationship between knowledge enablers, processes, and organizational performance in an integrative framework. Razi Jalaldeen *et al.* (2009) propose a model to assess the organizational readiness and its contributing factors for

KM process adoption by integrating KM infrastructure and unified theory of acceptance and use of technology. The authors suggest that organizational readiness be assessed by taking into consideration both organizational and individual factors.

Several authors have suggested that an instrument to assess readiness should be developed based on the premise that KM is enhanced through the critical success factors. These factors are the main contributing factors for adoption of KM strategy, though they have termed them differently. For example, KM enablers (Lee and Choi, 2003; Egbu *et al.*, 2001) KM critical success factors (Al- Alawi *et al.*, 2007; Wong, 2005), influencing factors on KM (Holsapple and Joshi, 2000), and KM initiatives (Kulkarni *et al.*, 2007). Taking cue from literature review from different industries, it has been determined that in order for construction organizations to be ready to embark on successful KM implementation, attention needs to be focused upon five main contributing factors: culture, role of technology, top management support, role of human resources practices, organizational structure and leadership. Each of these five steps will be discussed in turn.

Culture

Organizational culture is an important factor frequently mentioned, that can act as enabler to promote the sharing of knowledge. Maintaining an effective corporate culture is arguably the most significant determinant in the success of a KM programme. Without a culture that is conducive and supportive toward sharing, any KM initiatives will predictably fail. Great emphasis must be placed on the importance of knowledge in order to promote an adaptable corporate culture. There are many barriers to why staffs are reluctant to share, including lack of trust, lack of perceived value, or simple knowledge hoarding. Sometimes, team members may be reluctant to share knowledge if they fear criticism from their peers, or recrimination from management. Organizations must encourage individuals and teams as a whole believing that knowledge sharing is a healthy and normal way to do business. Having a compatible culture is not optional. If the culture is not KM friendly, "no amount of technology, knowledge content or good project management will make the effort successful" (Davenport *et al.*, 1998). Egbu *et al.* (2003) provided a list of various aspects of organizational culture that would support a KM initiative and at the same time they also recognized various aspects of a culture that may affect an organization negatively. This view is supported by Davenport (1998) that states that a company's success at shaping its culture will help enhance its ability to manage knowledge more effectively.

Technology

Construction organization can use many tools to enhance KM initiatives, especially virtual project that uses of internet, group share system such as video conferencing, document management system, CAD systems, analysis system, estimating systems and etc.that will radically affect the speed and efficiency of knowledge generation and dissemination. These in turn will influence developments in working practices and social interaction. Carneiro (2000) suggests that a KM system should be developed as a response to changes in the internal and external environments. The author explains that such a system is to be adapted to solve problems that negatively affect operating efficiency. KM however should be treated as more than just the application of ICT for managing knowledge. Knowledge is predominantly a new way of thinking about modern organization.

Top management support and commitments
Management support is crucial when implementing any type of strategic programme. If management lacks the dedication and support toward a KM programme, employees may misinterpret this behaviour and view KM as unimportant, thus exerting minimal effort (Kabene *et al.*, 2006). An organization must have sufficient reward programmes that motivate employees to share their knowledge with the rest of the firm. Strong incentives and a healthy culture are needed to encourage knowledge sharing and innovation. The organization must think about their reward, compensation, and motivational systems in order to make KM successful. However, top management support alone is inadequate for a KM initiative to be successful; a sustained commitment by top management is required to forge employee empowerment leading to more knowledge (Choi, 2000). Top management support and commitments help to create the favourable climate to knowledge sharing. Hence, employees feel more secure in sharing and solving their problems when management shows a more relaxed approach towards the free flow of knowledge.

Human resources practices
Recruiting the right people for the right jobs and training them to improve performance is a challenge for HR departments. However, they need to develop new roles and plan to deliver organizational excellence such as creating partnership with senior managers and becoming agents of continuous transformation and shaping a culture to improve the organization capacity for change (Aghasadeh, 1999). It is argued that human resource practices should be aligned to strengthen KM by focusing on team development training programmes, motivation and support from the top management as well as increase the involvement of staff from various levels of management in the decision-making process (Egbu, 2005). In order to nurture a retentive human resource pool, human resource management must ensure a conducive working environment by focusing on employee welfare and acknowledging employees as an asset integral to the continued success of the organization.

Organizational structure
KM theorists suggest that flexibility and non-hierarchal structure are the best environmental factors for implementing KM initiatives. Breaking down hierarchies in the organization will encourage knowledge sharing, create on open, non-hierarchical office culture, which allows everybody to contribute to practices, because in knowledge sharing organization there is always shared ideas or information. Breaking down hierarchies does not mean breaking down accountabilities and responsibilities, but there are different types of knowledge, which are not always a consequence of and not necessarily linked to seniority or position. Miller (1987) claims that organizational structure influences information flows as well as the context and nature of human interactions. For knowledge to be utilized effectively, organizations will have to make changes in terms of organizational structure. These shifts includes a move from individual work to team work, from functional work to project based work, from single skilled personnel to multi skilled employees and from coordination from above to coordination among peers (Pinchot and Pinchot, 1996).

Leadership
Leadership involves envisioning the future, coordinating the development of a coherent mission for the organization, overseeing the development, controlling the processes and providing a motivation toward organizational culture and climate (Sanghani (2009). Visionary leadership is critical to a KM implementation. Research also indicates that not only the leader must have a vision but that vision must also be

shared by the led (Tichy and Sherman, 1994). Leaders should lead by example by showing willingness to share information and knowledge freely and to learn from others in organization. Their positive attitude mirrors the aim to reflect that knowledge may solve organizational problems and improve the organizations effectiveness as in existence at any level of the organization and not exclusively in the upper levels of the hierarchy. Leaders showing these positive examples help nurture a knowledge sharing culture in any work community.

MALAYSIAN CONSTRUCTION INDUSTRY AND LESSONS LEARNED.

KM practices could be considered as relatively new in the Malaysian context as most organizations are at the initial phase of formal KM implementation (Badaruddin, 2004). To capitalize on KM, Malaysian construction organizations have to keep up with the ever changing needs in the market. Managing change is another essential initiative organizations have to practice to ensure the continuity of their construction business. Hence, these organizations have to study current and future pattern of client needs, its influencing factors, the rate of change in the market and consequently, prepare the needed resources to adapt, adopt or to bring about necessary changes to remain ahead in the competition. In relation to managing change, Malaysian construction industry must also be able to sense readiness in adopting KM practices. Readiness assessment involves a complex set of interactive tasks that, in many cases, break new ground for the organizations. In this context, these organizations have to undertake a broad range of initiatives (policies, budget actions, organizational structures which, taken in sum, represent a determined agenda) to assess and actively manage their readiness for KM implementation.

In implementing KM strategy, Malaysian construction organizations need to be aware of the challenges that may inhibit the success of KM initiatives. The main challenge remains people-related as attitudes and habits are the most difficult factors to change (Dainty *et al.,* 2005). To recruit and retain high quality people is also challenge. This is becoming increasingly difficult, given the attractiveness of the construction organizations in an improving economy, the demanding pace of construction operations, and the loss of staff. The second challenge is to make sure that organizations have the right resources allocated to the right purposes in support of readiness. Even with a solid foundation of readiness funds in the budget, the costs of unbudgeted contingency operations can reduce resources available to carry out training, maintenance, and other readiness-related activities. Even with the emphasis on ample funding to support readiness, the third challenge is to closely monitor and track budgets and plans as they are executed, to make timely corrections if problems arise, and to make thorough programme decisions to ensure readiness in the future. The construction organizations must watch with great attention over its resources and continue to refine its ability to monitor readiness to ensure that it has the ability to project future readiness. Malaysian construction organizations can respond to each of these challenges through a series of KM initiatives to ensure that they are abreast with the competition.

CONCLUSION AND THE WAY FORWARD

This paper has discussed the importance of organization readiness for KM implementation in construction organizations. KM practices differ depending on organization. Construction organizations planning to adopt KM strategies need to analyse their businesses to ensure a productive and beneficial implementation of KM.

It has been shown that there are many factors to be considered by Malaysian construction organizations before they are really ready to implement KM strategy. Effective KM implementation in construction organizations depends on many factors, including culture, role of technology, top management support, role of human resources, organizational structure and leadership. These items can provide a basis for organizations to evaluate their readiness for KM practices. Further work will involve detailed study of readiness for implementing KM strategy in Malaysian Construction organizations. This would explore the requirement for a detailed framework aimed at improving and supporting Malaysian construction organizations in managing knowledge.

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