'Soft' enablers of knowledge management in Malaysian companies – a qualitative study

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Abstract

Knowledge management is an important area of study because knowledge is treated as a commodity by organisations these days. Despite this fact, many organisations are finding it difficult to effectively manage knowledge. This study reports on the 'soft' enablers of knowledge management in Malaysian MSC status companies. These enablers were identified using multiple case studies. The results indicate that there are nine factors namely collaboration, mutual trust, learning, leadership, incentives/rewards, centralisation, formalisation, T-shaped skills and kiasu-ism impacting knowledge management activities in these companies. To our knowledge, this is perhaps the first study of its kind in Malaysia.

Keywords

Knowledge management; qualitative techniques; case study research

INTRODUCTION

Knowledge is an important resource to organisations these days, needs to be effectively and efficiently managed. This management is essential in order to maintain competitive advantages. This, in turn, helps organisations to achieve success in the dynamic business environment (MDC 2005). This makes it an imperative for organisations to concentrate on maintaining and developing the knowledge capital that they possess in order to innovate and remain competitive. Knowledge management helps an organisation gain insights and further understanding from its own experience (Davenport & Prusak 2000; Despres & Chauvel 1999; Takeuchi & Nonaka 2004; Wiig 1997). Knowledge management activities can assist an organisation on acquiring, storing and utilising knowledge for problem solving, dynamic learning, strategic planning and decision making (Takeuchi & Nonaka 2004).

In general, there are two broad approaches to knowledge management. One approach focuses on the 'hard' aspects of knowledge management while the other looks at the 'soft' aspects of it (Mason & Pauleen 2003). The 'hard' aspect of knowledge management looks at the deployment and use of information technologies to enable knowledge management activities to be conducted within the organisation (Mason & Pauleen 2003). The principal goal of 'hard' approach to knowledge management is to increase access to knowledge through enhanced methods of access and reuse through hypertext linking, databases and searches (Malhotra 2000; Tiwana 2000; Turban & Aronson 2001). Information technologies like networks, groupware, data mining and data warehouses are key solutions that drive this approach (Tiwana 2000). The 'hard' view is based on the idea that voluminous amounts of knowledge harnessed through technology will make knowledge management work in the organisation (Malhotra 2000; Tiwana 2000; Turban & Aronson 2001).

On the other hand, the 'soft' approach to knowledge management investigates the capture and transformation of knowledge into a corporate asset by an organisation (Mason & Pauleen 2003). This approach views knowledge as a process composed of a complex set of dynamic skills and know-how that is constantly evolving and changing. As such, it views the knowledge problem as being largely a management issue which can be solved via creativity and innovation in the organisation resulting in what is termed as a 'learning organisation' (Mason & Pauleen 2003). As opposed to the 'hard' approach, the 'soft' approach requires a holistic view of the organisation and acknowledges that it is necessary to get employees to share what they know to make knowledge management work (Gupta & Govindarajan 2000). The scope of this study is restricted to the examination of the 'soft' approach to knowledge management. In particular, this study examined cultural, people and structural factors that take on the role of knowledge management enablers.

LITERATURE REVIEW

In Malaysia, knowledge management has been identified to be a key factor in ensuring organisational success. Prior Malaysian studies have highlighted its importance and benefits to local organisations but provided limited directions as to the enablers contributing to these benefits (Badruddin A Rahman 2004a, 2004b; *Bank Negara Malaysia* 2005; Ndubisi 2004). Among the key reasons identified for the importance of knowledge management to Malaysian organisations is the need for organisations to develop new areas of growth in knowledge-intensive areas in view of the nation's shift to the knowledge economy (*Bank Negara Malaysia* 2005; Ramanathan Narayanan, Richardson & Abdul Latif Salleh 2003). The need to harness knowledge possessed by organisations is brought about by the fact that reliance on manufactured goods and the export of traditional commodities will not be sufficient to generate future growth for the Malaysian economy (*Bank Negara Malaysia* 2005).

However, understanding knowledge management within the Malaysian context is difficult as there have been very few published work on this domain with Malaysian data. Some of these papers attempted to prescribe measures that have been found to be successful in other countries without fully understanding the local context. In addition, almost all prior research utilised survey questionnaires based on foreign studies and hence the instrument may not be fully applicable to the Malaysian context (Ko 2003; Ramanathan Narayanan, Richardson & Abdul Latif Salleh 2003; Rumesh Kumar 2003). Due to these reasons and the fragmented and scant amount of literature on knowledge management in Malaysia, it is exigent that studies on knowledge management in Malaysia be conducted. In particular, there is a need to identify and examine the 'soft' knowledge management enablers within the Malaysian context to comprehend organisational processes employed. Furthermore, the move by the Malaysian government in transforming Malaysia's economy to one that is knowledge-driven and with its bold Multimedia Super Corridor initiative currently in progress, it is necessary to understand the impact of these enablers on knowledge management practice in Malaysia. Based on the need to understand this, the following research question was identified for this study:

How do the 'soft' knowledge management enablers (cultural, structure and people) affect Multimedia Super Corridor status companies in Malaysia?

Knowledge management enablers are organisational mechanisms for fostering knowledge consistently which stimulates knowledge creation, protects knowledge and facilitates knowledge sharing within an organisation (Lee & Choi 2003; Turban & Aronson 2001). These enablers can be broadly classified into three categories – culture, structure and people.

Culture

Culture defines not only the value of knowledge but also internal organisation of this knowledge for sustained competitive advantage. An appropriate culture should be established within the organisation to encourage employees to create and then to share knowledge amongst themselves (Lee & Choi 2003). Creating and sustaining this sharing culture is not an easy task and requires the cooperation of all parties. Although many cultural factors have been identified in the literature, a majority of these factors were based on Western countries and environments which are different from the Asian context (Chan & Ng 2003; Chaudry 2005; Chow, Deng & Ho 2000; Lee & Choi 2003; Michailova & Hutchings 2006). The cultural factors that were identified in the literature are collaboration, mutual trust, learning, leadership, incentives/rewards and *kiasu*-ism

Collaboration is an important feature in knowledge management adoption. It is defined as the degree to which people in a group actively assist one another in their task (Hurley & Hult 1998; Lee & Choi 2003). A collaborative culture in the workplace influences knowledge management as it allows for increased levels of knowledge exchange, which is a prerequisite for knowledge creation. This is made possible because collaborative culture eliminates common barriers to knowledge exchange by reducing fear and increasing openness in teams (Lee & Choi 2003). Collaboration between team members also tightens individual differences which can help shape a shared understanding about the organisation's environments through supportive and reflective communication (Fahey & Prusak 1998). Without shared understanding among team members, very few knowledge creation activities are conducted (Fahey & Prusak 1998; Lee & Choi 2003).

Mutual trust exists in an organisation when its members believe in the integrity, character and ability of each other (Robbins 1998; Robbins, Millet, Cacioppe & Waters-Marsh 2001). The existence of mutual trust in an organisation facilitates open, substantive and influential knowledge exchange (Abrams, Cross, Lesser & Levin 2003; Lin 2006; O'Dell & Grayson 1999; Robbins 1998). When team relationships have a high level of mutual trust, members are more willing to engage in knowledge exchange (Robbins 1998). It has been found that low levels of mutual trust is a key barrier to knowledge exchange in teams (Szulanski 1996). When knowledge exchange activities can be increased via mutual trust, knowledge creation occurs (Lee & Choi 2003; Takeuchi &

Nonaka 2004). Trust encourages an environment that promotes knowledge creation as it reduces the fear of risk. Hence, high levels of trust can enhance knowledge sharing and creation in teams (Lee & Choi 2003).

Learning is defined as "any relatively permanent change in behaviour that occurs as a result of experience" (Robbins et al. 2001, p. 124). In organisations, learning involves the dynamics and processes of collective learning that occur both naturally and in a planned manner within the organisation (Millet & Marsh 2001; Robbins et al. 2001). Learning is crucial in knowledge management as it provides an avenue for the organisation to be infused with new knowledge (Lee & Choi 2003; Nonaka & Takeuchi 1995). With an emphasis on learning and continuous development, knowledge creation activities will increase and employees can play an active role in the process (Lee & Choi 2003). Lee and Choi (2003) posit that for successful knowledge creation to occur, organisations should develop a deeply ingrained learning culture and have education, training and mentoring programmes available to encourage learning. In addition, it is important for the organisation to have tolerance for mistakes and view them as opportunities for learning and problem solving. Developing and maintaining organisational learning capabilities is critical for guaranteeing core competence enhancement and sustained competitive advantage for the organisation (Simonin 1997).

Leadership is often stated to be a driver for effective knowledge management in organisations (Crawford 2003). Leadership is defined as the ability to influence and develop individuals and teams to achieve goals that have been set by the organisation (Robbins 1998; Robbins et al. 2001; Wood, Wallace, Zeffane, Schermerhorn, Hunt & Osborn 1998). The presence of a management champion for the knowledge management initiative in order to set the overall direction for knowledge management programmes and who can assume accountability for them is crucial to effective knowledge management. In many organisations, this champion is often the Chief Knowledge Officer (CKO) or Chief Information Officer (CIO) (Mohamed Khalifa & Liu 2003). More specifically, leaders can be categorised as being transactional or transformational (Robbins et al. 2001). The former refers to leaders who guide and motivate subordinates in the direction of established goals by clarifying role and task requirements (Robbins et al. 2001; Wood et al. 1998). On the other hand, transformational leaders are those who possess charisma and provide individualised consideration and intellectual stimulation to subordinates (Robbins et al. 2001; Wood et al. 1998). Studies have shown that transformational leadership have positive impact on knowledge management (Crawford 2003). Failure in ensuring adequate leadership appear to have resulted in the failure of many knowledge management initiatives (Ambrosio 2000).

Incentives and rewards that encourage knowledge management activities amongst employees play an important role as an enabler (Bartol & Srivastava 2002; Bock & Kim 2002; Ko 2003). Incentives are something that has the ability incite to incite to determination or action by employees in an organisation (Robbins 1998; Robbins et al. 2001). Rewards on the other hand can be broadly categorised as being either extrinsic or intrinsic (Wood et al. 1998). Extrinsic rewards are positively valued work outcomes that are given to the employee in the work setting whilst intrinsic rewards are positively valued work outcomes that are received by the employee directly as a result of task performance (Wood et al. 1998). It is found that both intrinsic and extrinsic rewards have a positive influence on knowledge management performance in organisations.

Kiasu-ism results from the attitude that "knowledge is power". However, studies have argued that "power is knowledge", as the existing power structures (both formal and informal) and the struggle for power within an organisation will affect how individuals influence knowledge management activities and knowledge that is created (Gordon & Grant 2005; Lichtenstein 2004). Gordon and Grant (2005) then explain that knowledge management activities will also lead influence the struggle for power. This, in conjunction with job insecurities in addition to competition among peers which lead to the hoarding of knowledge by employees for self-preservation (Chaudry 2005). This results in employees being unwilling to share knowledge as they fear that they may lose their 'exclusiveness' in doing do (Chaudry 2005). The *kiasu* culture or "afraid to lose" mentality is a distinct character in some East Asian cultures, which is predominantly attributed to Singaporean society (Chaudry 2005; Tong 2006). Whilst *kiasu*-ism is found to be a factor in some studies on knowledge management in Singapore and China (Chaudry 2005; Chow, Deng & Ho 2000; Hwang, Ang & Francesco 2002; Lu, Leung & Koch 2006; Michailova & Hutchings 2006; Tong 2006), it has never been known to be a factor in the Malaysian-based studies reviewed.

Structure

Organisational structure plays an important role as it may either encourage or inhibit knowledge management (Nonaka & Takeuchi 1995). The structure of the organisation impacts the way in which organisations conduct their operations and in doing so, affects how knowledge is created and shared amongst employees (Lee & Choi 2003; Nonaka & Takeuchi 1995). Realising this, this study will consider organisational structure from the perspective of centralisation and formalisation.

Centralisation refers to the degree to which decision making is concentrated at a single point, normally at higher levels of management in the organisation (Robbins et al. 2001; Wood et al. 1998). The concept of centralisation includes only formal authority - that is rights inherent in one's position (Robbins et al. 2001). An organisation is said to be highly centralised if the top management makes the organisation's key decisions with little or no input from lower level employees (Robbins et al. 2001).When decision-making authority is centralised, spontaneity, experimentation and freedom of expression which are key elements of knowledge creation are greatly reduced (Graham & Pizzo 1996; Lee & Choi 2003). In addition, a centralised structure hinders interdepartmental communication and sharing of new ideas (Bennet & Gabriel 1999; Delmonte & Aronson 2002). Without a continuous flow of ideas and communication, knowledge creation does not occur. A decentralised organisation structure has been found to facilitate an environment were spontaneity in knowledge creation occurs (Stonehouse & Pemberton 1999). Hence, decreased centralisation in an organisation can lead to increased creation of knowledge (Lee & Choi 2003; Stonehouse & Pemberton 1999; Teece 2000).

Formalisation refers to the written documentation of rules, procedures and policies to guide behaviour and decision making in organisations (Wood et al. 1998). When an organisation is highly formalised, employees would then have little discretion over what is to be done, when it is to be done and how they should do it, resulting in consistent and uniform output (Robbins et al. 2001). Formalisation though impedes knowledge management activities. This is because knowledge creation requires creativity and less emphasis on work rules as the range of new ideas that emerge from a highly formalised structure is limited. Flexibility and informal communications can allow employees to work in better ways and generate new knowledge (Bennet & Gabriel 1999; Delmonte & Aronson 2002). Therefore, increased flexibility in an organisation can result in increased creation of new knowledge (Bennet & Gabriel 1999). Low formalisation also allows for variation and openness, which are crucial to knowledge creation. Formalisation also tends to stifle communication and interaction within departments and across departmental boundaries within an organisation (Bennet & Gabriel 1999; Delmonte & Aronson 2002).

People

People are the heart of creating knowledge as it is people who create and share knowledge (Lee & Choi 2003). Therefore, it is crucial that the organisation recruits and effectively manages its employees to create and share knowledge (Lee & Choi 2003). Knowledge, skills and competence can be acquired by the organisation through recruiting people with desirable skills, in particular those with T-shaped skills (Leonard-Barton 1995). Employees who possess T-shaped skills not only have a deep knowledge of a particular discipline (like financial auditing) but also how their discipline interacts with other disciplines (like risk analysis, investment analysis and derivatives) (Iansiti 1993; Leonard-Barton 1995). Employees with T-shaped skills are extremely important in knowledge creation activities as they possess and can integrate diverse knowledge assets to improve organisational performance (Leonard-Barton 1995). They possess the ability both to combine theoretical and practical knowledge and to see how their discipline of knowledge interacts with others (Johannenssen, Olsen & Olaisen 1999; Lee & Choi 2003). These skills allow employees to expand their competence across several disciplines and thus create new knowledge for the organisation (Johannenssen, Olsen & Olaisen 1999; Lee & Choi 2003; Madhavan & Grover 1998)

METHODOLOGY

This research employed an exploratory research design using qualitative multiple-case studies within the critical realism paradigm (Perry, Riege & Brown 1999; Yin 1994).The selection of the research methodology was influenced by the research question and the current state of this field of study (Carson, Gilmore, Perry & Gronhaug 2001; McPhail 2003; Perry 2001; Yin 1994; Zikmund 2000). In view of the limited amount of literature covering 'soft' knowledge management enablers in Malaysia, there is little precedence and direction to explore the research problem identified for this study using empirical or quantitative methods (Healy & Perry 2000b; McPhail 2003; Perry 2001; Zikmund 2000). The contemporary nature of this study, in conjunction with the recommendation made by Yin (1994) dictated the use of the case study method to be employed in this study.

The case study method explores real-life issues in their own setting and uses a wide variety of evidence (McPhail 2003; Perry 2001). These include the use of in-depth interviews, internal documentation, corporate literature, websites, articles in magazines and newspapers to provide a basis for extensive and thorough discussion of the research problem (Perry 2001; Perry & Coote 1996). This study used the following components of case study methods.

Literature review: A well-defined research problem is requirement for the research design and subsequent data collection (Yin 1994). This was accomplished in this study by a review of the existing literature in academic journals, books, conference proceedings, dissertations and practitioner magazines (Darke, Shanks & Broadbent

1998; McPhail 2003; Perry 2001). Based on the review, existing constructs and theory were elicited leading to a theoretical foundation upon which the research problem was formulated (Darke, Shanks & Broadbent 1998; Perry 1998, 2001; Yin 1994).

Exploratory convergent interviews: Using prior theory, two exploratory convergent interviews were conducted to develop the interview questions. These questions were largely semi-structured and predominantly conversational. The main purpose of this stage was to arrive at a better research structure for the confirmatory stages of the main cases (Carson et al. 2001; Perry 2001).

Pilot case study: Three pilot interviews were conducted to improve the data collection processes prior to the commencement of the main case studies as suggested by (Yin 1994). These pilot interviews served as a "dress rehearsal", in which the intended data collection plan was used as close as possible (Perry 2001; Yin 1994). The pilot cases were conducted in a large MSC status company in the field of computing technology.

Main case analysis: Nine in-depth interviews were conducted in the main case study stage, with three interviews being conducted for each main case. For each case, an IT manager or CIO/CKO, an executive IT personnel and an executive business personnel were interviewed. The selection of cases was based on the specific purpose of literal replication and to select information-rich cases that can be studied in-depth. In other words, purposeful sampling helps in selecting cases that allow the researcher to gather in-depth information, by drawing on the strong personal experiences of the respondents about the phenomena under study (Patton 1990; Perry 2001). The three main cases for this study were selected from the population of all Multimedia Super Corridor status companies in Malaysia and were selected from among the more established companies as they would provide for literal replication and have implemented some level of knowledge management initiatives (Raja Suzana Raja Kasim 2005; Ramanathan Narayanan, Richardson & Abdul Latif Salleh 2003; Rumesh Kumar 2003; Tan 2004). If the recently established or new companies were used, they would yield information that is not rich and would therefore not add value to this study (Darke, Shanks & Broadbent 1998; Perry 2001; Raja Suzana Raja Kasim 2005; Tan 2004; Yin 1994). Apart from this, cases were selected based on similar organizational maturity for literal replication (Perry 2001; Yin 1994). To achieve theoretical replication, these three cases were selected from different industry categories – petrochemicals, computing technology and software development (Yin 1994).

The interviews commenced with open and general questions, and later focussed on identified issues based on the research question formulated for this study (Perry 2001). Apart from interviews, other forms of data collection such as document review and observation were also conducted to obtain a better understanding of the cases' knowledge management practices. In short, the use of multiple case studies and multiple sources of evidence allowed for a more complete understanding of the phenomenon in question apart from affording the ability to triangulate and validate the results emanating from the research (Yin 1994).

The research model and constructs are shown below:

Knowledge management enablers		
CULTURE ▪ Collaboration (+) ▪ Mutual trust (+) ▪ Learning (+) ▪ Leadership (+) ▪ Incentives & rewards (+) ▪ *Kiasu*-ism (-)	**STRUCTURE** ▪ Centralisation (-) ▪ Formalisation (-)	**PEOPLE** ▪ T-shaped skills (+)

Figure 1: Research Model

Data analysis: The initial steps in data analysis for each case took the form of immediately checking the data being gathered from the in-depth interviews, observation and document review to ensure that they are correct and accurate (Yin 1994). Spurious data were identified and corrected before a summary of the interview was being verified by the respondent to clarify any missing or unclear detail (Miles & Huberman 1994). After that, data reduction and coding were conducted in order to reduce and organise the data collected to a manageable level which could provide information rich detail to the study (Miles & Huberman 1994; Yin 1994). Data were also summarised using tables in order to combine, compare and contrast data apart from allowing the findings be reported in a visual and simplified manner (Miles & Huberman 1994).

The final step in data analysis is to draw meaning from displayed data which requires data to be in a condensed, clustered, sorted and linked (Patton 1990). However, it must be noted that drawing meaning does not only occur

in this stage, in fact it occurs from the start of data collection itself whereby the researcher begins to decide what things mean (Miles & Huberman 1994). Cross-case analyses were conducted in this stage to detect any pattern that may emerge between different cases and to provide sufficient insights to the data analysis process (McPhail 2003; Perry 2001). All of these will lead to the "final" conclusion being made once the iterative process of data collection has been completed by the researcher (Miles & Huberman 1994). Table 3.4 provides a summary of the data collection activities conducted for this study. The next section details the validity and reliability issues of this study.

Validity, realiability and ethics: In most qualitative research, it is difficult to achieve full validity and reliability due to the nature of the phenomena being studied and it is therefore exigent that the researcher attempts to establish some measures to increase the level of reliability and validity (Cavaye 1996; Healy & Perry 2000a). In view of the widespread acceptance and use of Yin's (1994) four tests of quality, this study employed validity and reliability based on construct validity, internal validity, external validity and reliability (Cavaye 1996; Lake 2004; McPhail 2003; Ng 2002; Perry 1998, 2001; Perry & Coote 1996; Poh 2001; Stehle 2004; Van Akkeren 1999). In addition, the five often-cited principles of ethical standards that are intent of the study, voluntary participation, informed consent, avoidance of harm, confidentiality and anonymity were adhered to in this study which has been granted ethics clearance from the USQ Human Ethics Committee (Ref: H05STU522) (Miles & Huberman 1994; Trochim 2005).

FINDINGS AND DISCUSSION

This study found that there are nine 'soft' enablers contributing to knowledge management practices in the Malaysian MSC companies. They are discussed below.

Collaboration: Collaboration plays an important role in facilitating knowledge management. However, visible differences do exist with regard to helpfulness, collaboration across organisational units and willingness to accept failure. Smaller organisations appear to have higher levels of collaboration as staff members need to work closely with each other to get projects completed on time. Apart from this, the smaller organisations promote a family-like work ethos which is based on mutual respect and individual accountability contributing to a conducive environment for collaboration amongst staff members. In larger organisations, there is a tendency to avoid taking responsibility for failure due to its organisational structure and the need for self-preservation by staff members which is closely aligned to the *kiasu* (afraid to lose) phenomenon that is common in certain East Asian cultures (Hwang, Ang & Francesco 2002).

Mutual trust: Mutual trust is an enabler of knowledge management as suggested in the literature (Szulanski 1996; Takeuchi & Nonaka 2004). Mutual trust can be seen as being the facilitator for open, substantive and influential knowledge exchange leading to knowledge creation (Abrams et al. 2003; Lee & Choi 2003; O'Dell & Grayson 1999). Although mutual trust is acknowledged by all respondents as being a crucial component to effective knowledge management, some respondents found that mutual trust is difficult to cultivate and maintain as suggested by Robbins (1998). Organisational size does affect the level of mutual trust experienced in an organisation with smaller organisations having higher levels of trust. In organisations with larger sizes, organisational policies such as the forced-ranking system results in employees looking out for themselves unless personal relationships are formed. Due to organisational policies and the highly competitive environment of the larger organisations, *kiasu*-ism emerges just like in the case of collaboration.

Kiasu-ism: Based on the findings, the *kiasu* culture identified in Singaporean and Chinese studies which was not known to be an enabler in Malaysia, is found to be an important factor affecting knowledge management practice. One reason for this could be that most of the studies in Malaysia replicated the research instruments developed in Western contexts which were quantitative in nature, resulting in *kiasu*-ism not emerging as an inhibitor. *Kiasu*-ism has a wide ranging effect on organisational culture as it would impact on collaboration and mutual trust as seen from the findings of this study. Therefore, management would need to consider implementing measures such as providing incentives and promoting teamwork to encourage staff members to collaborate with each other more openly and to foster mutual trust (Chaudry 2005). In short, due attention to mutual trust is required to ensure that effective knowledge sharing occurs within the organisation. Apart from that, the "power is knowledge" notion put forth by Gordon and Grant (2005) deserves further examination to fully comprehend how existing power structures affect the creation of knowledge.

Learning is recognised as an enabler of knowledge management. All cases have some form of training programs in place for staff members as they value the importance of learning in enhancing the knowledge and performance of its employees. These training programs include in-house training and external training sessions. Mistakes are regarded as part and parcel of learning in these organisations and are viewed constructively. This is in support of

the literature that posits that a tolerance for mistakes is required and that mistakes should be viewed as an opportunity for learning and problem solving, often resulting in the creation of new knowledge.

Leadership is recognised as an important factor in ensuring that the knowledge management effort is effectively managed in the organisation. Previous studies support this aspect by stating that leadership is a key driver for effective knowledge management and the absence of adequate leadership appears to have resulted in the failure of many knowledge management initiatives (Ambrosio 2000; Crawford 2003; Mohamed Khalifa & Liu 2003). Although a knowledge management champion exists in each of the cases studied, their exact roles varied. For example, in one case, the CEO acted as the key champion with departmental heads playing an associate role in championing knowledge management in their respective departments. In another case, an enterprise-wide CIO, who is the knowledge management champion in the enterprise, did not interact with the middle and lower levels of the organisational hierarchy. With regard to the type of leadership style, all cases had knowledge management champions who are transactional leaders to guide and motivate subordinates in the direction of established goals by clarifying role and task requirements (Robbins et al. 2001; Wood et al. 1998). Although the knowledge management champions in all these cases are transactional leaders, they are performing a responsive role as their knowledge management initiatives in their respective organisations appear to be functioning well. It was also noted that these organisations are leaders in their respective industries.

Incentives and rewards: All cases indicated that incentives and rewards have a positive effect on knowledge management activities in their respective organisations. In two cases, the incentives and rewards that employees derive from practising knowledge management is mainly intrinsic in nature. Some form of extrinsic rewards such as bonuses, increments and discounts are still available to employees. However, staff members value the intrinsic rewards and satisfaction that they obtain from practising knowledge management and are of the opinion that the extrinsic rewards that are currently in place in their organisations are not attractive to them and have not been adjusted to cater to knowledge management activities that occur these days. This supports the view by O'Dell and Grayson (1998) that artificial or extrinsic rewards that are not supported by the culture of the organisation are likely to be ineffective. This implies that the extrinsic reward structures must be closely aligned to the knowledge management efforts of the organisation in order for it to be effective. Tying in extrinsic rewards to knowledge management activities is effectively executed in one case which has a forced-ranking system and 'Enterprise First' programme. In this case, employees practise knowledge management as a means of self-preservation which eliminates the intrinsic factor of the rewards. The findings of this study suggest that incentives and rewards play a crucial role in facilitating knowledge management.

Centralisation: There is consensus among the cases that excessive levels of centralisation hamper effective knowledge management practice. Support can be found in the literature in concepts such as key elements of knowledge creation such as spontaneity, experimentation, idea sharing and freedom of expression are greatly reduced with the centralisation of decision-making authority (Bennet & Gabriel 1999; Delmonte & Aronson 2002; Graham & Pizzo 1996; Lee & Choi 2003; Stonehouse & Pemberton 1999). In these cases, centralisation is more prevalent as it is clear that formal authority lies in the top management with some delegation of authority to the middle and lower management personnel. In some instances, employees are allowed to make decisions and take actions without obtaining prior approval provided that it is within their jurisdiction and scope. They would then need to be responsible for their actions. However, many employees are not willing to take on this extra responsibility and would rather run it by their superiors or top management to avoid being blamed should anything go wrong.

Formalisation: The findings of this study indicate that high levels of formalisation impede and limit knowledge management. Formalisation is relatively high for all organisations with one case moving towards full formalisation in response to current financial reporting and management requirements in compliance with the *Sarbanes-Oxley Act* (Carney 2006; Jackson & Fogarty 2005). Most of the activities conducted in these organisations are covered by some formal rules which are typically in some documented form. One interesting finding with regard to formalisation is that it impedes creativity, creative dialogues, sharing and idea generation amongst employees which results in it being an inhibitor of the socialisation mode of knowledge creation. However, when high levels of formalisation occur, almost every process and action is documented, enabling the elicitation of tacit knowledge into a documented form which could then be disseminated throughout the organisation. At the initial stage of formalisation as experienced by this case, it would involve a certain degree of externalisation in which staff members externalise their knowledge on work processes into an explicit form. Once this knowledge is embodied in an explicit form, it can then be used for both combination and internalisation knowledge creating activities. As such, the findings of this study confirm that high levels of formalisation do impede the socialisation mode of knowledge creation but also proves that high levels of formalisation do facilitate the other three modes of knowledge creation – externalisation, combination and internalisation.

T-shaped skills: There is general consensus on the positive impact of T-shaped skills on knowledge management activities in all cases. All three cases have staff members who possess T-shaped skills which are mainly due to the HR policy of these organisations that emphasises on hiring the most qualified and experienced persons for the job. Apart from that, training programs provided by the organisations allow for staff development and appreciation of the other aspects the organisation. The findings indicate that due to the *kiasu* phenomenon explained earlier, staff members with T-shaped skills may 'conceal' their knowledge across domains to avoid being given more work to do. This is because they cannot reject work in other areas that is being assigned to them by their superiors and they would only be assigned the work if their superiors think that they are knowledgeable in that area. Hence, organisations must ensure that their HR policy is focussed on hiring the correct person with T-shaped skills and that the *kiasu* culture does not hamper knowledge management activities. In addition, employees with T-shaped skills need to be properly managed to ensure that they contribute positively to the knowledge management initiatives undertaken by the organisation.

CONCLUSION

This study made has several key contributions by identifying nine key 'soft' knowledge management enablers within the Malaysian context. More importantly, this study has confirmed that *kiasu*-ism plays an important role in knowledge management practices in Malaysia and demonstrated the suitability of case study research to investigate an information systems research problem. Apart from that, it also highlights the importance of these 'soft' enablers of knowledge management which were not thoroughly examined in the previous Malaysian studies. The study also found that collaboration, mutual trust, learning, leadership, incentives/rewards and T-shaped skills are significant facilitators of knowledge management. Apart from these, the knowledge management champions in these organisations practise transactional leadership styles and are yet very effective in promulgating a conducive environment for knowledge management. *Kiasu*-ism is found to be an inhibitor to knowledge management as indicated in previous studies. This issue needs to be adequately addressed by the management to ensure that it does not impede on the creation and transfer of knowledge within the organisation. In addition, centralisation is found to be a significant knowledge management inhibitor. On the other hand, formalisation is found to have a dual effect on knowledge management as it acts as an inhibitor to the socialisation process but acts as a facilitator to the externalisation, combination and internalisation processes. In short, these 'soft' factors do play a crucial role in determining the outcome of knowledge management efforts and would therefore require adequate attention and consideration by organisations intending to practise knowledge management activities. Neglecting these 'soft' issues and focussing only on the 'hard' technological issues may not yield the results that the organisation wishes to attain. Further research on *kiasu*-ism is suggested to further understand its wider implications to ensure effective deployment of knowledge management initiatives in Malaysia.

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