The Influence of Structural Capital and Knowledge Management on the Performance: The Case Study of Telekom Malaysia Headquarters

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ABSTRACT

Due to the messy and complex challenges that are happening now, the current business environment cannot be predicted with relative ease. Many organizations including Telekom Malaysia Headquarters believe that, embarking into the knowledge economy is one of the best business strategies to making sure for the organization to survive in the very competitive and turbulent environment. Focusing on the usage of knowledge and intellectual capital have now become the most important agenda to many organizations. They believe that by managing and leveraging their intellectual capital, it will help to improve their immediate and long term business performance. However, the gap between the actual needs of those organizations as well as the theoretical and practicality part of it, is still missing. Therefore, this conceptual paper tries to investigate the influence of intellectual capital's components specifically i.e. structural capital and knowledge management on the performance of Telekom Malaysia Headquarters. It consists of studying the impact of structural capital towards the practice of knowledge management in Telekom Malaysia Headquarters. Several specific issues such as the relationship between gender and education level, managerial expertise and organizational culture on structural capital as well as knowledge management practices will also be explored further.

Keywords
Intellectual Capital, Structural Capital, Knowledge Management, Performance, Telekom Malaysia

1.0 INTRODUCTION

The telecommunication industry has entered a very competitive environment for the past few decades and the industry has been deregulated. The Malaysian government has established a vision to be a developed nation by year 2020 and the deregulation of telecommunication services is one of the most important steps towards achieving that vision. The era when the Government, first through it's Jabatan Telekom Malaysia, and then through Telekom Malaysia Berhad, held the monopoly over the telecommunication services effectively ended by 1992. To date, the Malaysian telecommunications spot healthy competition amongst three major mobile players – Maxis, Digi, and Celcom (TM's mobile arm), with TM4 incumbent in the fixed line market (Industrial report 2007, Suruhanjaya Komunikasi dan Multimedia Malaysia 2007). To achieve the aspiration and realize the vision of making Malaysia a developed nation, and to survive in this highly competitive and challenging business environment, Telekom Malaysia has to be competitive, dynamic and robust. With the advancement made in the telecommunication technology, with the formation of various forms of business coalitions between local telecommunication services operators and other world-class telecommunication companies, the challenge for the business survival of Telekom Malaysia is inevitable.

In this "new economy" or "knowledge economy" one principally driven by information and knowledge, the true value of Telekom Malaysia can only be achieved by developing its structural capital. This is the critical aspect of its present and future value – no longer confined to the managing of network, systems and physical assets of Telekom Malaysia. Indeed, for the first time in business history, the workers, not the organization, owns the means of production, the knowledge and capabilities they possess and they decide how and where to apply it.

2.0 LITERATURE REVIEW

Economists frequently describe the basic resources necessary for an industrial enterprise in terms of the three classic kinds of assets – land, labour and financial or other economic assets (Sullivan, 2000). During the last two decades, the business environment have progressively moved into a knowledge-based fast-changing, technology intensive company in which investments in human resource, information technology and research and development have become essential in order to strengthen the firm's competitive position and ensure its future viability (Canibano, 2000). Resources consists of physical, human and monetary resources that are needed for business operations to take place and information-based resources, such as management skills, technology, consumer information, brand name, reputation and corporate culture.

In this regards, Telekom Malaysia as a former government department, since 1996 has inherited the systems, technologies, business network, customers and 28,000 thousands employees of Jabatan Telekom Malaysia and now becoming as one of the most important knowledge-based organization in Malaysia. The triumph made by Telekom Malaysia is crucial for supporting the growth as well as prosperous of the nation. Having said this, one of the knowledge-based organizational resources

least studied in literature is the structural capital. That is the reason why the objective of this paper was to analyze the concept of structural capital and the different ways it is present in Telekom Malaysia Headquarters. Structural capital is "organizational-level knowledge" present in the firm as a result of a learning metaprocess called institutionalization. This knowledge basically resides in organizational routines, processes, strategy and culture, which codify and preserve memories and knowledge. It discusses main indicators found of organizational embedded knowledge - structural capital - present in these organizations and groups them into six categories: infrastructure, bureaucratic processes, customer support, innovation, knowledge-based quality and infrastructure improvement.

Organizational Structural Capital

Structural capital is a non-thinking asset (Roos *et al.*, 1997) which consists of everything that remains when the employees go home – databases, customer files, manuals, trademark and organizational structure (Skandia, 1994). It is the knowledge in the firms, which is independent of people, which includes patents, contacts and databases (Edvinson & Malone, 1997) and it is the capabilities of organization to meet the market requirements (Saint-Onge, 1997). Sullivan (1998) defines structural capital as the support that firms provide to their human capital such as information systems, computer software, work procedures, marketing plan and company know-how.

Mayo (2000) instead, term it as organizational capital – information systems, networking system, management processes, patents, database and Allee (2000) described it further as an internal structures – systems, work processes that leverage competitiveness including information technology, communication and technologies. Sveiby (2001) classify the internal structure as a result of people work internally in an organization such as patents, concepts, model and administrative system which is owned by the organization and some of it will remain even if a large number of employees leave. Structural capital arises from processes and organizational value, reflecting the external and internal focuses of the company, plus renewal and development value for the future. Organization with strong structural capital will reach its fullest intellectual capital potential and will have a supportive working culture for its employee to learn and be innovative (Bontis,1998, Bontis *et.al*,1999), it provides the environment that encourages the human capital to create and leverage its knowledge (Sullivan, 1998). The essence of structural capital is the knowledge embedded within the routines of an organization (Bontis, 1998). It can be sum up that structural capital is knowledge at organizational level created through the institutionalization of both individual and group knowledge present in the firm during the learning process.

Structural Capital and Business Performance

Measuring performance is something that all organization does. B.W. Associates (1994) defines performance as the manner or quality of functioning, which implies that management of performance is concerned with the manner or quality of managing and how well something does what it is supposed to do. Performance measurement is essential for achieving and maintaining high levels of productivity and quality, it provides the link between strategies and actions (Dixon *et al*, 1990), for good management control and planning, and for developing and motivating an organization. It can encourage transparency, integration of processes, internal communication, a culture of improvement and motivate managers to act in a way that is consistent with the organization's plan. The underlying theory is that, what gets measured get done (Roberts, 1994). Through performance measurement, organization can have the answer to – what was happened, why has it happened, is it going to continue and what we are going to do about it? (Nooreha, 2002).

Performance measurement involves the systematic gathering, analysis and reporting of information to management and it is the process of quantifying past actions. A good performance measurement system must link operations to strategic objectives, integrate financial and non-financial information and must be customer focussed. Some of the performance dimensions are competitiveness, financial, quality of service, flexibility, resource utilisation and innovation (Nooreha, 2002). Generally organizations measure performance due to various reasons such as – to identify success, to identify achievement, to understand the processes, to identify where problems are and the necessary improvements needed, to confirm improvements, to ensure decisions made are based on facts not on emotion or intuition. Intellectual capital has been identified as a key resource and driver of organizational performance and value creation (Itami, 1991; Teece, 1998; Mayo, 2000). Narver and Slater find that market orientation, relational capital and business performance (ROA) are strongly related (Narver and Slater, 1990) and Jaworski and Kohli (1993) find that market orientation is an important determinant of performance on his study of 222 US business units.

Youndt (1998) empirically shows the following relationships between structural capital and performance:
i) Structural capital is not significantly related to sales growth but is positively related to financial returns.
ii) Structural capital is not significantly related to reduced organizational costs, but is positively related to increased customer benefits.

Using a survey data, Bontis (1998) shows the following relationships between Likert-type measures of structural capital and business performance:
i) Structural capital is significantly related to business performance.

Again using a survey data, Bontis *et al.* (2000) show the following relationships between Likert-type measures of structural capital and business performance for Malaysian industries:
i) Structural capital is significantly related to business performance for service industries and non-service industries.

Beside intellectual capital, knowledge which has a strong relationship with intellectual capital also forms the foundation of company business performance (Marr *et al*., 2002), it is a strategic resource for the company to develop its sustainable competitive capability (Davenport & Prusak, 1998) and knowledge stocks, flows and creation are closely related to business performance. However the most knowledgeable firms are not always the most profitable. Knowledge only leads to superior performance if the industry characteristics enable the knowledgeable company to appropriate the profits from the new ideas (Bierly and Daly, 2002). The survival and performance sustainability of an organization in the long run will be determined by how the right capital mix between physical and intellectual capital of the organization is leveraged to satisfy the interest of its stakeholders – shareholders, creditors, suppliers, customers, communities, employees including the whole human race, present and future and the planet itself. Intellectual capital which includes of human capital, structural capital and relational capital will play a central role in fuelling the success of companies in this century (Zohar, 2004).

Knowledge Management and Structural Capital

Knowledge is the meaningfully structured accumulation of information which may be categorized as explicit or tacit (Hubert & Stuart, 1986). Explicit knowledge can be formally articulated; more easily transferred or shared but is abstract and removed from direct experience. Tacit knowledge is developed from direct experience and action often referred to as knowledge-in-practice. It is highly pragmatic, situation-specific, subconsciously understood and applied, difficult to articulate and usually shared through highly interactive conversation, story-telling and shared experience. Knowledge must be internalized and made tacit to be truly understood and applied to practice, it is best exchanged, distributed, or combined among communities of practice by being made explicit. Once shared, explicit knowledge can be internalized and made tacit again by reapplying it to practice. This constant cycle of tacit creation leading to explicit combination and exchange enlarges the total knowledge base of the organization (Nonaka, 1995). Knowledge is a resource of value creation with a major attribute of appreciating value with continuing use and sharing of knowledge instead of depreciating value of tangible resources. Sveiby (2001) identifies nine basic knowledge transfers in organization which create value for the organization:
(i) Between individuals.
(ii) From individuals to relational capital.
(iii) From relational capital to individuals.
(iv) From individual competence into structural capital.
(v) From structural capital to individual competence.
(vi) Within the relational capital.
(vii) From relational capital to structural capital.
(viii) From structural capital to relational capital
(ix) Within structural capital.

The nine knowledge transfers exist in most organization but they tend not to be coordinated in a coherent strategy due lack of accurate understanding of what a knowledge-based theory may give them and most organizations also have the legacy and cultures that block the leverage (Sveiby, 2001). The successful of knowledge transfer processes need to be supported by the whole management system of the organization including the information system, career development, reward and recognition and performance management system.Knowledge management involves gathering, structuring, storing, and accessing information to build knowledge. It also involves creating a culture that encourages and facilitates the creation and sharing of knowledge within an organization (Boyett & Boyett, 2001). Organizations which manage knowledge effectively exhibit the following characteristics (Zack, 1993):

(i) Applying maximum effort and commitment to creating, sharing and applying their knowledge.
(ii) Applying an appropriate level and mix of skill, knowledge and expertise to problems and opportunities.
(iii) Employing an organizational and technical knowledge processing strategy appropriate to the situation.
(iv)Engaging in effective communication as evident by the reliable, accurate, timely and meaningful exchange of information and knowledge.

Managerial Expertise and performance
Managerial expertise or human capital plays a significant role in running modern business organizations. “Human capital” (HC) is the ‘tangible’ tacit knowledge embedded in the minds of individuals which include employee competence, know how, education, innovativeness, capabilities, work related knowledge and changeability. Youndt (1998) empirically shows the following relationships between Human capital and performance:
(i)Human capital is positively related to sales growth but is not significantly related to financial returns.
(ii)Human capital is not significantly related to reduced organizational costs but it significantly relates to increased customer benefits.

Using a survey data, Bontis (1998) shows the following relationships between Likert-type measures of human capital and business performance:
(i) Human capital is significantly related to structural capital.

(iii) Structural capital is significantly related to business performance.

Walker (2001) empirically shows the following relationships between human capital and performance measurement:
(i) The value of human capital is significantly related to the firm's performance measurement of human capital market value in the low knowledge-base industry.
(ii) The value of human capital is significantly related to the firm's performance measurement of human capital market value in the high knowledge-based industry.
(iii) The value of human capital is not significantly related to the performance measurement of productivity, profitability or market evaluation in either low knowledge-based industry or high knowledge based industry.

Organizational Culture and Performance
An organization is postulated to have a "strong culture", which is usually defined to be widely shared among employees. Well developed cultural artifacts like "rituals" and "organizational stories" are anecdotes given to illustrate particular cultural traits. The strength with which the cultural values are held among employees is then taken to be a predictor of future organizational performance, usually financial.An early example of this sort of study is found in In Search of Excellence by Peters and Waterman (1982). There, the authors described the cultures of 62 financially Corporate culture successful firms, making claims of a link between a particular type of "strong culture" and superior performance. Another example would be Corporate Cultures by Deal and Kennedy (1982). The authors, like Kilman et al. (1985), advanced the view that strong culture can have a major impact on the success of the business due to its pervasive influence throughout any organization.

A later study by Denison (1984) sought further evidence, using more sophisticated sampling procedures for both organizations and subjects within the organizations. Denison studied a convenient sample of 34 firms representing 25 different industries. He found that two indices, "organization of work" and "decision making", were found to be significantly correlated with financial performance. In addition, he found that the strength of the culture was predictive of short-term performance, when performance was defined with broad indicators like return on assets, return on investment and return on sales, etc.

Gordon and DiTomaso (1992) in a follow-up study found the supporting evidence that a strong culture was predictive of short-term company performance. In an attempt to replicate Denison's (1984) study, they also defined cultural strength using the inverse of standard deviations across the scales in their instrument. They then correlated their management surveys of 11 US insurance companies with their asset and premium growth rates for the following five years.

"They found that a strong culture 'regardless of content', in which a substantive value was placed on the value of 'adaptability', was associated with stronger performance, at least in the preceding three years." More importantly, they found that a cultural value of "adaptability" is also predictive of short-term performance.

They therefore postulated that while both a strong culture, and an appropriate culture from the standpoint of content, will produce positive results, a combination of both is most powerful. This finding was important as it introduces the concept of fit into culture-performance studies.

The fit hypotheses were given strong support by Kotter and Heskett (1992) in a study of 207 firms from 22 different industries. As above, the initial evidence for the strong culture approach was relatively weak. There was a relationship between the strength of the corporate culture and organizational performance at least in the short term, but it was not a strong one. There were companies with strong culture and poor performance as well as companies with weak culture and excellent performance. The researchers then selected a smaller subgroup of 22 companies from the initial sample for a more in-depth investigation. The companies chosen all had cultures of relatively equal strength, but 12 of the firms significantly outperformed a matched group (same industry) of ten firms. The results revealed that the 12 companies with a more "appropriate" culture for their business and environment performed better. This result was consistent with the results obtained by Chatman and Jehn (1994) and Gordon (1985), where they found that firms in different industries developed different cultural patterns to suit their business demands.

Based on the given literature, the author would like to address the issues where in 2007, the nation's regulatory requirements have created three new-licensed telecommunication services operators. Accordingly, to remain competitive, Telekom Malaysia has reorganized itself into several major business groups to response to this new challenge. To date, the Malaysian telecommunications spot healthy competition amongst three major mobile players – Maxis, Digi, and Celcom (TM's mobile arm), with TM4 incumbent in the fixed line market. (Industrial report 2007, Suruhanjaya Komunikasi dan Multimedia Malaysia 2007)

Here, Telekom Malaysia Berhad (TM), a leading regional information and communications group, offers a comprehensive range of communication services and solutions in fixed-line, mobile, data and broadband. As one of the largest listed companies on Bursa Malaysia with an operating revenue of more than RM16 billion, TM is driven to deliver value to its stakeholders in a highly competitive environment. The vision is to become "The Communication Company of Choice", which focuses on delivering exceptional value to its customers and other stakeholders. In attempting to achieve Telekom

Malaysia's vision of being the communication company of choice, it have to focus more on the major areas in implementing the vision especially in the area of structural capital and knowledge management.

With this regard, the authors would like to specifically to address the importance of structural capital and knowledge management on the performance of Telekom Malaysia and to discover an answer to the following questions:

(i) What is the level of structural capital in Telekom Malaysia?
(ii) What is the relationship between gender and education level on knowledge management practices?
(iii) What is the influence of structural capital and knowledge management to the performance of Telekom Malaysia specifically on the organizational and business leadership, operating efficiency and business performances?
(iv) Whether managerial expertise does influence the structural capital, knowledge management on the performance?
(v) Whether organizational culture has the affects on organizational performance?

3.0 AIMS OF STUDY

With regards to this study, it is logical to assume the relationship between structural capital, knowledge management and the performance. In this knowledge economy, one principally driven by information and knowledge, the true value of Telekom Malaysia can only be achieved by developing its structural capital. This is the critical aspect of its present and future value – no longer confined to the managing of network, systems and physical assets of Telekom Malaysia. Indeed, for the first time in business history, the workers, not the organization, owns the means of production, the knowledge and capabilities they possess and they decide how and where to apply it. There has been little empirical research on the level of structural capital availability in Telekom Malaysia. Beside that the relationship between gender and education level on knowledge management practices in Telekom Malaysia have yet to be determined. Further investigation is to be done on the influence of structural capital on the performance of Telekom Malaysia specifically on the organizational and business leadership, operating efficiency and business performances in Telekom Malaysia. There is also less evidence to address whether managerial expertise does influence the structural capital and knowledge management on the performance of Telekom Malaysia. Finally, the level of organizational culture has the affects on organizational performance specifically Telekom Malaysia is yet to be addressed. For the purpose of this study, the author felt that there is a need to investigate the matter more comprehensively.

4.0 THE CONTRIBUTIONS TO THE BODY OF KNOWLEDGE

Currently, there is a great amount of literature about the subject matter from developed countries such as the UK, and USA. However less work has been done for Malaysia especially for Telekom Malaysia. Thus, the main purpose of this study is to eventually fill this gap. The findings of this study will provide the reader with better understanding on current issue related and the level of readiness of Telekom Malaysia to compete globally. In addition, this will helps to better understanding the level of structural capital in Telekom Malaysia and its influence on the knowledge management and also the performance. This effort can further be linked to competitive advantage thus will contribute to the development of the telecommunications industry in Malaysia and also to ensure sustainability and maintaining the company's competencies throughout the globalizations processed. It can also be used both by the private and public sector organizations.

5.0 SUMMARY

Telekom Malaysia Berhad (TM), a leading regional information and communications group, offers a comprehensive range of communication services and solutions in fixed-line, mobile, data and broadband. As one of the largest listed companies on Bursa Malaysia with an operating revenue of more than RM16 billion, TM is driven to deliver value to its stakeholders in a highly competitive environment. Based on this, the level of structural capital, the influence of gender and education level on the practice of knowledge management and the affect both structural capital and knowledge management on the performance, the level of influence of managerial expertise and organizational design on the organizations are crucial to be understood. This is to enable companies to remain competitive especially in achieving the developed nations by 2020.

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