



**THE USE OF INFORMATION SYSTEM FOR KNOWLEDGE  
MANAGEMENT: THE CASE STUDY OF A MALAYSIAN PUBLIC  
LISTED COMPANY**

**MOHD RIDZUAN NORDIN**

**RHODRICK JUNAID KALUMPHA**

**MOHD FEISAL ISMAIL**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

raf

MAK 00684.



0000098805

The use of information system for knowledge management  
: the case study of a Malaysian public listed company /  
Mohd Ridzuan Nordin, Rhodrick Junaid Kalumpha, Mohd  
Feisal Ismail..

98805/K1

# **THE USE OF INFORMATION SYSTEM FOR KNOWLEDGE MANAGEMENT: THE CASE STUDY OF A MALAYSIAN PUBLIC LISTED COMPANY**

**MOHD RIDZUAN NORDIN  
RHODRICK JUNAID KALUMPHA  
MOHD FEISAL ISMAIL**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

## **The Use of Information System for Knowledge Management: The Case Study of A Malaysian Public Listed Company**

Mohd Ridzuan Nordin  
Rhodrick Junaid Kalumpha  
Mohd Feisal Ismail

---

National Technical University College of Malaysia,  
Melaka, Malaysia  
Email: mridzuan@kutkm.edu.my

### **Abstract**

*This paper reports on the research in progress to investigate how a large Malaysian corporation integrates knowledge management activities with existing organizational structure and to pinpoint opportunities in this regard. The top management of the corporation is sensitive on the importance of managing knowledge. Information system and information technologies are deployed for the purpose of supporting Telekom Malaysia Berhad (TMB) business operation. They are however yet to be integrated for knowledge management purpose. It was also observed that there is still area of opportunities for the integration of knowledge management in the way TMB manage its operation.*

**Keywords (knowledge, management, system)**

### **INTRODUCTION**

Assessment of an organisation's performance in today's dynamic business environment is a multi-faceted activity and more complicated than it used to be two decades ago. While financial performance, as assessed by the accounting profession still remains very important in today's changed business environment, there are certain aspects of the organisation that are crucial for its long term survivability. However, the financial metrics do not provide a complete picture of the organisation's performance since they fail to capture the intrinsic value that is inherent in the "soft" parts of the organisation. Both business professionals and academicians agree that organizational value and wealth creation has shifted from the traditional aspect of tangible assets such as land, building and machinery to intangible assets. It is now the knowledge or intellectual capital harnessed by an organization that creates its value and generates wealth, while ensuring sustained competitiveness. Such realization has led to the unprecedented practice of knowledge management by organizations. Malaysian companies are not left behind in this revolutionary environment.

Ramachandran (2000) defines knowledge as derivatives of data and information that is abstract in nature and difficult to quantify. In a similar context, Russell Ackoff, a systems theorist and professor of organisational change (as cited in Bellinger, Castro, and Mills, (1997)), defines knowledge based on the content of the human mind, which he classifies into five categories namely; data, information, knowledge, understanding and wisdom.

The emergence of knowledge as an important factor for the success of businesses has given rise to a novel field known as "knowledge management". This field is concerned with issues that are inherent in using knowledge for the success of businesses and the service economy. Sveiby (1996) defines knowledge management as the art of creating value from an organization's intangible assets. According to him, the emphasis when defining knowledge is on the intangible assets. Tiwana (2000) describes knowledge management as the management of knowledge for creating business value and generating a competitive advantage. He further states that knowledge management enables the creation, communication and application of knowledge of all kinds to achieve business goals. Kirk Klasson explains that knowledge management is the ability to create and retain greater value from core business competencies (as cited in Tiwana, 2000).

While the above definitions and many more are centred on the nature of knowledge management, others concentrate and focus on the building blocks of the phenomenon and what it does to the organisation. Malhotra (2000) argue that Knowledge Management caters to the critical issues of organisational adaptation, survival and competence in the face of increasingly discontinuous environmental change. He further elucidates that it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings.

The examination of existing definitions and classification of Knowledge Management indeed shows a wide spectrum of viewpoints (McAdam and McCreedy, 1999). Despite this confusion and lack of consensus, companies and business professionals have come to realise that competitive advantage and success in the dynamic business environment no longer lies in technology alone. It is in unchaining knowledge (through use of knowledge management) that lies in the company's people, processes and experience that the hope for survival rests (Tiwana, 2000).

Whatever the definitions of knowledge and knowledge management are or are perceived to be, it is a known fact that businesses in this era cannot survive without implementing or adopting these concepts. In today's business organisations, many tasks are being executed through the creation of new knowledge. In yesterday's economy, corporations used factors of production that were mainly physical in nature, such as labour, land and machines. The mix of these factors was used to generate wealth and create value for the shareholders (Seetharaman et al., 2002). However, the current business scenario is very different. On the business landscape of the 21<sup>st</sup> century, knowledge or knowledge assets will take precedence as compared to physical assets.

As Nonaka and Teece (2001) state, the challenge in the knowledge economy will be to build, combine and integrate the knowledge assets of many thousands of individuals, while concurrently creating an environment where knowledge accumulates and is shared at low cost. Indeed the current and future business environment is affected by expertise held, knowledge created and the investment in knowledge related technologies (Seetharaman et al., 2002).

In Malaysia despite the loud calls for a knowledge-rich Malaysian society, little research on this emerging but crucial field of knowledge management have been done in the country. Abdullah et al. (2002) examined managerial concerns on knowledge management in public sector organizations, using Multimedia Development Corporation (MDC) as a case study. They reported that MDC's KM implementation framework consists of four organization factors: leadership, culture, technology and measurement. Furthermore, they provide an Intellectual Capital (IC) model as identified by MDC that is made up of three main aspects: Human Capital, Structural Capital and Customer Capital.

The birth of knowledge as an important factor for generating business value and wealth coupled with the practice of knowledge management in the new economy has given rise to numerous organizational capabilities, which are termed as either intellectual capital assets or knowledge assets. It is imperative that organizations measure and report these assets and the organization's performance resulting from them. According to Marr et al. (2002), the aims of measuring Knowledge Assets can be two folds being to evaluate an organization in order to communicate its real value to the market (external perspective) and to identify the knowledge components of an organization for the purpose of using them to continuously improve the organisation (internal perspective).

Numerous parties in other parts of the world have done and are still researching on knowledge management and the related issues. Some of their findings may be equally applicable to the business environment in Malaysia. However, extensive research is required to link KM and KM assets to organisational performances. It is the intend of this paper to examine this issue.

## **RESEARCH OBJECTIVES AND METHODOLOGY**

This paper is a case study on Telekom Malaysia Berhad (TMB), the main telecommunications provider in Malaysia. The main aim is to establish the Knowledge Management practices and initiatives the organization has undertaken especially in relation to the use of information systems.

The study leading to this paper follows the embedded case design (Yin, 1994, as cited in Hellstrom, et al., 2000).

This implies that one single organisation will be selected as representative of a general phenomenon (Hellstrom et al, 2000), here understood to be the large contemporary firm (TMB) in the midst of developing KM initiatives as opposed to a comparative analysis of several organizations.

The study involves proving or disproving the following propositions based on the evidence obtained from the analysis, being:

**Proposition 1 (P1):** The knowledge management initiatives and practices in TMB are implemented to directly support the organization's core business competencies and values.

**Proposition 2 (P2):** There is a conscious effort to use information system for knowledge management in TMB

**Proposition 3 (P3):** Knowledge management is integrated into the effort to manage TMB

The study is descriptive in nature and preliminary to a more comprehensive research project. The main source of data is the organization's annual reports and the questionnaires administered to its staffs.

The questionnaire administered comprise of eight parts probing on demographic information, knowledge management activities, culture, organisational structure, the use of information technology, personnel, tools and techniques of managing knowledge, policies and strategies and knowledge assets. Items in the questionnaire made up of close and open questions and statements requiring the degree of agreement from respondents. The questionnaires were administered through the cooperation of the Corporate Strategy Division of TMB. One hundred and eighty questionnaires were distributed to TMB staff. Respondent were asked to return the questionnaire to the Corporate Strategy Division to be collected by researcher.

## RESULTS AND DISCUSSIONS

A total of 60 questionnaires were return by respondents. This corresponds to a return rate of 33%. Among the respondents 35% are managers and above while 65% are from among executives to assistant manager. Female made up 48% of the respondents. A small majority of respondents, 52%, have been working for TMB for more than 10 years. Individuals with technical background made up 30% of the respondents.

### **P1: The KM initiatives and practices in TMB**

The first proposition, P1, attempts to observe if there is a conscious effort to manage knowledge in TMB, especially by the top management of the organization. The main task is to find the philosophy and strategic approach of TMB with regard to knowledge management. For an organization to benefit from knowledge management, the initiatives have to be fully supported by the strategic decision makers, and should be clearly communicated to the lower level employees. There need to be a vision and strategy as to how knowledge is to be created and managed in order to drive business value, create wealth and gain competitive advantage.

In 1999, the chairman of TMB stated that the new millennium would usher a strategic change that will fundamentally and profoundly affect society, with intellectual capital being a much more important asset (Telekom, 1999). In 2000, the new CEO of TMB explicitly states that three things would be the key for a next generation telecommunication company: Customer Relationship Management (CRM), *Knowledge Management* and Financial Excellence (Telekom, 2000). During that year, the organization embarked on a restructuring program with the establishment of five independent strategic business units. This also involved a change program, to create a new performance and innovative culture. Most of these changes were personally managed by the CEO under the Change Management Office and was fully supported by the Board of Directors.

In 2001, the restructuring program was completed. The CEO then stated that among the high priorities of the company were the reformulation of the company's executive development program emphasising on knowledge management and increasing intellectual capital and an extensive program to manage the organization's top talent to prepare them as future leaders (Telekom, 2001). It is clear that top management of TMB is sensitive to the importance of managing knowledge and creating an environment that will foster the creation and sharing of knowledge in TMB. This sensitivity seems to intensify over the years.

This sensitiveness should be reflected in the policies and strategies adopted by the organisation with regard to knowledge management. Indications by respondents on the various aspects of knowledge management practices



would reflect their significance in TMB and are given in Table 1. Nearly 50% of respondent indicated the presence of various aspects of knowledge management practices in TMB suggesting that the aspiration of top managements has been translated into action.

**Table 1: Number of respondent indicating on the various aspects knowledge management in TMB**

Ref.	Statements	Resp.
H3	TMB uses strategic alliances to acquire knowledge	29
H5	TMB has defined responsibilities on knowledge management initiatives	28
H1	TMB has a written knowledge management policy	27
H4	TMB has a vision on how knowledge management should be integrated into the business	27
H2	TMB has programs intended to improve worker retention	26
H6	TMB has a strategic programme in place to collect and analyse knowledge	26

At the tactical level, managers perceive knowledge related assets to be more important in determining and creating business value for the organization. This is evidenced in the high importance attributed by respondents to Customer Relationship Management, Management Capabilities, Quality and Technology as versus to Furniture, Land, Building and Inventory (Table 2). These results are in line with those of a survey of American managers done by the Cap Gemini Ernst and Young Centre for Business Innovation's, who created the Value Creation Index (VCI) in the year 2000.

**Table 2: Mean and standard deviation of rating on the importance of various assets (Scale: 1 being vital importance and 5 not important at all)**

Ref.	Knowledge Assets	Mean	SD
I14	Customer Relationship Management	1.67	1.17
I8	Management Capabilities	1.69	1.11
I7	Quality	1.74	1.12
I1	Technology	1.79	1.28
I12	Expertise of workforce (employee talent)	1.84	1.21
I5	Innovation (R&D know-how)	1.91	1.11
I9	Brand Value -	1.96	1.26
I6	Workplace environment	2.03	1.19
I3	Alliances (Supplier /Distribution Networks)	2.05	1.08
I4	Property/Machinery/Plants	2.40	1.12
I13	Inventory/Stock	2.42	1.10
I11	Buildings/Offices	2.58	1.08
I10	Land	2.77	1.09
I2	Furniture	3.24	1.17

## **P2: The use of information system for knowledge management**

Proposition 2 seek to elucidate the approach taken by TMB towards deploying information system and ICT for seeking and processing data, information and ideas. This is to determine whether the technologies are strategically used for knowledge management by TMB. Responses from the questionnaire are used for this purpose.

The items securing highest degree of agreement among respondents are given in Table 3. Respondents are of the agreement that IT is used widely in the organisation and that it enables right information to be made available to the right people at the right time, that it allows effective communication to take place and is used effectively by

personnel. Respondents agree that knowledge sharing is seen as strength and that there are no restrictions for assessing information and to share them through informal networking. Respondents also feel that the organisation has the competence to deliver its goals.

**Table 3 Mean and standard deviation for statements receiving high degree of agreement among respondents (Scale: 1 being Strongly Disagree and 4 being strongly agree)**

Ref.	STATEMENTS	Mean	SD
E1	IT is used in most of the department's processes and daily operations	3.46	0.60
E3	IT is a key enabler in ensuring the right information is available to the right people at the right time	3.27	0.55
E4	IT allows effective communication to take place	3.17	0.75
E2	Members in this department use IT effectively as a normal working practice	3.08	0.70
C3	Knowledge sharing is seen as a strength	3.08	0.64
C5	There are no restrictions on access to information unless it is confidential or personal	3.07	0.77
D3	Employees share knowledge informally though networking with each other	3.02	0.48
F1	Members in this department have the competence to deliver the department's goals	3.00	0.53

The questionnaire also identifies the implementation of the various knowledge management activities by TMB. The numbers of respondents indicating the various activities implemented by TMB are given in Table 4. Staff development and CRM initiatives secure the top two highest agreements while the provision of department wide document management system that facilitate the sharing of information secure the least agreement.

**Table 4: Number of respondents indicating knowledge management activities implemented by TMB**

Ref.	KM activities	Resp.
B6	Development of employees through training and education	35
B4	Customer relationship management initiatives	27
B5	Automated Sales and Customer Billing systems	21
B3	Communities of Practice that facilitate and support individuals, groups or teams	19
B2	Innovation systems that help create and offer services	18
B1	Department wide information systems that identify the market	15
B7	Network Development and Management Systems	12
B8	Department wide document management systems that facilitate the sharing of information	9

These observations suggest that TMB is making a conscious effort to deploy information systems and Information and Communication technologies in running its business. The technologies are used to support TMB operation such as in CRM, billing and network development. It is also observed that the technologies are deployed for certain aspect of knowledge management being the sharing of information.

### **P3: KM is integrated into the management of TMB**

Proposition 3 is meant to probe whether TMB has integrated knowledge management into the operation and

management of the company. This is done through the responses from respondents.

The relevant statements that scored low agreement attributed by respondents are given in Table 5. Respondent disagree with the statements that there exist an appraisal system that encourage members to share knowledge and that members are rewarded for sharing ideas, that decision making is highly decentralized and that members are assessed and rewarded for the new ideas they generate. Respondents also disagree with the statement that important issues are explored using scenario or simulation techniques and that TMB staff are considered the best in the whole industry.

These responses suggest that knowledge management is yet to be integrated in the management of TMB. TMB is yet to facilitate the creation of ideas such as through rewarding personnel based on knowledge contribution and providing the infrastructure to facilitate the creation and sharing of knowledge especially ideas. These observations also suggest that TMB is yet to emphasise on the assessment and measurement of its knowledge assets.

**Table 5: Mean and standard deviation of statements receiving low degree of agreement among respondents. (Scale: 1 being Strongly Disagree and 4 being strongly agree)**

Ref.	ITEM	Mean	SD
C7	There is an appraisal system that encourage members to share knowledge	2.20	0.77
D1	Decision making in this department is highly decentralized	2.33	0.69
G2	Members are assessed and rewarded for the new ideas they generate	2.43	0.59
F3	Members of this department are considered the best in the whole industry	2.45	0.65
G4	Important issues are explored using scenario or simulation techniques	2.49	0.70
F4	Members are satisfied with the department	2.57	0.62
D4	The departmental structure facilitates the creation of new ideas	2.57	0.66
C8	Members do not fear that sharing knowledge with others might reduce their influence in the department	2.58	0.78
G7	The department captures and uses knowledge obtained from public research institutions including universities and government laboratories	2.60	0.65
G3	We have learning groups where members can discuss their work experiences and strategies	2.60	0.69

The respondents were also asked to indicate the techniques used by TMB in evaluating its intellectual assets (Table 6). Generally the techniques such as Balance Score Card, Business Excellence Model and Value Chain Analysis that comprise of more tangible feature were indicated by more respondents to be used by TMB compared to the techniques that focuses on the intangible feature such as knowledge.

**Table 6: Number of respondents indicating on the techniques used by TMB to evaluate intellectual capital**

Ref.	Techniques	Resp.
I43	The Balanced Scorecard	20
I49	The Business Excellence Model	15
I45	Value Chain Analysis	14
I51	Human Resource Accounting	8
I50	The Intangible Assets Monitor	4
I46	The Value Creation Index	3
I48	The Technology Broker	2



## CONCLUSION

The management of TMB has introduced knowledge management initiatives to help realize TMB's vision of becoming a world-class organization that provides total customer care. The initiatives that are implemented are intended to support organization's business needs. Information system and information technologies are deployed for the purpose of supporting TMB business operation. They are however yet to be integrated for knowledge management purpose. It was also observed that there is still area of opportunities for the integration of knowledge management in the way TMB manage its operation.

## REFERENCES

- Abdullah R., Selamat, M.H., Shahibuddin, S., Alias, R.A., Sultan, M.S., Abdullah, S., Hashim, S.H. and Abu Bakar, F. (2000). Managerial Concerns in Knowledge Management in Public Sector Organisation: A case of MDC., *Teknologi Maklumat*, 64-80.
- Bellinger, G., Castro, D & Mills, A. (2002). Data, Information, Knowledge, and Wisdom. [online]. Available: <http://www.outsights.com/systems/dikw/dikw.htm> [ 2002, December 2].
- Hellstrom, T., Kemlin, P. and Malmquist U. (2000). Knowledge and competence management at Ericsson: decentralization and organizational fit, *Knowledge Management*, 4, 99-110.
- Malhotra, Y. (2000). Knowledge Assets in the Global Economy: Assessment of National Intellectual Capital. *Global Information Management*, 5, 5-15.
- Malhotra, Y. (2001). Knowledge Management for the New World of Business. [Online] Available: <http://www.kmnetwork.com/whatis.htm> [2002, December 2].
- Martensson, M. (2000). A critical review of knowledge management as a management tool., *Knowledge Management*, 204-216.
- Marr, B., Schiuma, G., & Neely, A. (2002). Assessing Strategic Knowledge Assets in e-Business. *International Journal of Business Performance Management*, 4, 279-295.
- McAdam, R. & McCreedy, S. (1999). A Critical Review of Knowledge Management Models, *The Learning Organisation*, 6, 91-101.
- Nonaka, I. & Teece, D. (2001). *Managing Industrial Knowledge, creation, transfer and utilization*, Sage Publications, London.
- Ramachandran, R. (2000). Measuring Knowledge Development In The Information Era. [online] Available: <http://www.stat.go.jp/english/iaos/paper/ramachandran.pdf> [2002, December 2].
- Seetharaman, A., Zaini, H.H & Saravanan, A.S (2002). Intellectual capital accounting and reporting in the knowledge economy, *Intellectual Capital* , 3, 128-148.
- Sveiby, K.E. (1996). What is knowledge management. [Online] Available: <http://www.sveiby.com/articles/KnowledgeManagement.html>. [2002, December 2].
- Telekom (1999), *Telekom Malaysia 1999 Annual Reports*, Telekom Publications Sdn. Bhd, Kuala Lumpur.
- Telekom (2000), *Telekom Malaysia 2000 Annual Reports*, Telekom Publications Sdn. Bhd, Kuala Lumpur.
- Telekom (2001), *Telekom Malaysia 2001 Annual Reports*, Telekom Publications Sdn. Bhd, Kuala Lumpur.
- Tiwana, A. (2000), *The Knowledge Management Toolkit*. Prentice Hall, New Jersey.

## ACKNOWLEDGEMENTS

The authors acknowledge the support of Telekom Malaysia Berhad in the course of conducting the research leading to the publication of this paper.

## COPYRIGHT

Mohd Ridzuan Nordin, Rhoderick Junaid Kalumpha and Mohd Feisal Ismail © 2004. The authors assign to ICOA/IM2004 committee and educational and non-profit institutions a non-exclusive license to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive license to ICOA/IM2004 to publish this document in full in the conference Papers and Proceedings. Those documents may be published on the World Wide Web, CD-ROM, in

printed form, and on mirror sites on the World Wide Web. Any other usage is prohibited without the express permission of the authors.

---