

Relationship of Knowledge Management Cycle and the Performance from Human, Customer and Organizational Perspective

Rayinda P. Soesanto, Luciana Andrawina, Indriani Rezki Pertiwi, and Amelia Kurniawati

Telkom University, Indonesia, {raysoesanto; luciana; ameliakurniawati} @telkomuniversity.ac.id, indrianierezki@gmail.com

ABSTRACT

Knowledge is a main essential for any companies, because in the knowledge based era, the knowledge itself became the source of competitive advantage. The performance of knowledge management can be measured from the intellectual capital. Intellectual capital is not useful unless it can create some value to the company. Most measurement systems are based on measures of physical and tangible items, this is became problematic when measuring the knowledge management cycle performance in company because the knowledge is intangible assets. This research purpose is to find the relation between the knowledge management cycle and performance. In this research three perspective are used, which are human, customer and organizational perspective. From the data collection, it is known that the KM performance affect the development of all perspective. From the result of this research, the result can be used as knowledge for the company to plan and make better strategic for gaining better competitive advantage.

Keywords: KM Process, Knowledge Management, Human Perspective, Organizational Perspective, Customer Perspective.

I INTRODUCTION

Knowledge is a main essential for any companies, because in the knowledge based era, the knowledge itself became the source of competitive advantage. Today, managing the knowledge in a companies is becoming a core competence that must develop in the companies to ensure succeeding in the competition of the dynamic changing business (Skyrme & Amidon, 1998). Uttami *et al.* (2012) stated that stakeholder in company usually demand the contribution as the knowledge management is implemented in company, the contributions are hopefully can represented a measureable indicators.

The performance of knowledge management can be measured from the intellectual capital. Intellectual capital is not useful unless it can create some value to the company, because of that the company must make sure that the intellectual capital is optimally used to gain values (Kurniawati & Andrawina, 2012). Most measurement systems that measured the knowledge management cycle are based on measures of physical and tangible items, this is became problematic when

measuring the knowledge management cycle performance in company because the knowledge is intangible assets. Performance measurement becomes the basis of strategy establishment for company in the future because it can bring company's vision and strategic target to all member of the company.

This research purpose is to find the relation between the knowledge management cycle and performance based on the knowledge management cycle process developed by Dalkir (2005) and elaborated into new knowledge management cycle model. In this research three perspective are used, which are human, customer and organizational perspective. The stucture of paper are describe as follow, the introduction describe the research background, theoretical background explained the theory that are used in the research, research method describe the methodology, result section describe the data processing, discussion describe the analysis and finding from the research and the last is the conclusion of the research.

II THEORETICAL BACKGROUND

This section discussed the theoretical background that are used in this research.

A. Definition of Knowledge

Knowledge is the skill and also understanding which are used by people to solve problems which includes theory, practice, rule and instruction. Knowledge is built by individual belief about cause and effect relationship (Probst, Raub, & Romhardt, 2000). Knowledge is defined as a fluid mix of experienced, values, information and expert insight that provides some kind of scheme that can evaluated new experience and information (Davenport & Prusak, 1998).

B. Definition of Knowledge Management

Knowledge management is defined as the critical issues from adaptation, will of survive and competence of organization to face the dynamic change of environment (Malhotra, 2005). The main shape of the knowledge management is when organization do a process to find synergic combination from data processing through information technology and creative and innovative capability from the people within organization (Uttami, Kurniawati, & Puspita, 2012).

C. Knowledge Management Cycle

Effective knowledge management requires an organization to identify, generate, acquire, diffuse and capture the benefits of knowledge in organization (Dalkir, 2005). The Knowledge Management Cycle that is used in these research are shown in Figure 1.

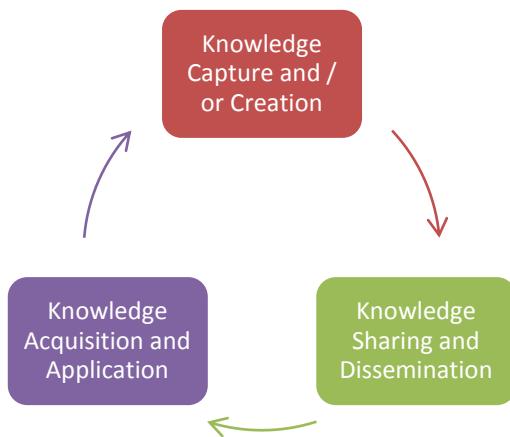


Figure 1. Knowledge Management Cycle.

III RESEARCH METHOD

The knowledge management cycle in this research are elaborated from previous study. Previous study about the KM cycle are conduct by Spender (1996), De Long (1997), Skyrne and Amidon (1998), Dalkir (2005), and Wee and Chua (2013).

Engstrom, Westnes & Westnes (2003) stated that there are three dimension that construct the intellectual capital, which are intellectual agility, performance and attitude and motivation. Human modal represent the individual organizational stock that represent by employee (Bontis & Fitz-enz, 2002). Roos & Roos (1997) stated that employee are created the intellectual modal through competencies, attitude and their intellectual agility.

Table 1. Human Capital Operational Definition.

| Dimension | Operational Definition |
|-------------------------|--|
| Intellectual agility | Ability to contextualized a concept and knowledge in order to develop the value creation process |
| attitude and motivation | Positive attitude and motivation of the members and leaders towards the organization |
| performance | Work outcome of the organization's members |

Customer capital is a relationship between organization with their customer through products. Customer is a business asset, if the organization don't

concern about what customer want, there is a chance that the customer will shift to the competitors product (Payne, 2005). If the organization wants to achieve great financial performance in a long term view, the organization must give a value added product for the customer (Kaplan & Norton, 1996), therefore the customer is the important asset for organization. The customer capital perspective are measured by customer retention, enhanced product/ service quality and better customer handling.

Table 2. Customer Capital Operational Definition.

| Dimension | Operational Definition |
|-----------------------------------|---|
| Customer Retention | Organization attempt to retain the relationship with the customer |
| Enhanced Product/ Service Quality | Increased product quality and service to customer |
| Better Customer Handling | Handling complaint when customer interest in product / service |

Organizational capital is a capability to renew and improve organization which the output is innovation. The amount of innovation from organization indicate that the people in the organization is active managing the knowledge and thus creating the innovation from one organization. According to Engstrom, Westnes & Westnes (2003), there are two dimension that construct the organizational capital, which are renewal and development and atmosphere. The organizational capital are measured by renewal and development, and atmosphere.

Table 3. Organizational Capital Operational Definition.

| Dimension | Operational Definition |
|-------------------------|---|
| Renewal and Development | Ability to create, develop and implement new idea |
| Atmosphere | Positive atmosphere to create innovation |

According to Dalkir (2005), the knowledge management cycle consist of three phase, which are acquisition, sharing and utilization.

Table 4. KM Cycle Operational Definition.

| Dimension | Operational Definition |
|-----------------------|---|
| Knowledge Acquisition | Process which is performed to collect, capture and produce knowledge that aligned with the needs an business strategy |
| Knowledge Sharing | Process which is performed to distribute the knowledge to unit or individual |
| Knowledge Utilization | Process which is performed to utilize the knowledge by the unit or individual |

To find the relation of knowledge management cycle and knowledge management performance, hypothesis are generated based on the literature study. The hypothesis then verified and validate by using questionnaire.

Table 5. Hypothesis of This Research

| Hypothesis | Statement | Reference |
|------------|--|--|
| H1 | KM performance give positive impact to development of human capital in organization | Ross & Ross (1997); Bontis & Fitz-enz (2002) |
| H2 | KM performance give positive impact to development of customer capital in organization | Anantatmula & Kanungo (2006) |
| H3 | KM performance give positive impact to development of organizational capital in organization | Engstrom, Westnes & Westnes (2003) |

The research object in this research is telecommunication company in Indonesia which has implemented knowledge management in the company. The respondent are selected from the division who involved in knowledge management cycle in the company. Partial Least Square (PLS) method is used in this research to test the hypothesis, the PLS is used because the population of the respondent is limited, the PLS is preferred because it works efficiently with the small sample sizes data, another benefit form PLS is that the statistical power is great, which imply that PLS likely to render a specific relationship significant when it is in fact significant in the population (Hair, Hult, Ringle, & Sarstedt, 2014). Once the questionnaire are being verified and validate, the next step is to analyze the result of the data and hypothesis.

To measure the knowledge management performance, three perspective are used in this research. The human capital perspective are measured using three dimension which are intellectual agility, attitude and motivation, and performance.

IV RESULT

In this research, the respondent are selected from the division who involved in knowledge management cycle in the company, which are Knowledge Management Unit, Human Resource Unit, and ISC Unit. Total respondent are 30 respondent. The questionnaire design are divided into two type of question, which are Yes/No question and perspective view with Likert-Like answer with 4 indicator which consist of "Strongly disagree", "Disagree", "Agree", "Strongly Agree". Table 6 shows the demographic of respondent by working experience, it is known that the most respondent who answer the questionnaire are the respondent who works for more than 16 year in the company.

Table 6. Demographic By Work Experience

| Work Experience | Frequency | Percentage (%) |
|-------------------|-----------|----------------|
| < 1 Year | 0 | 0% |
| 1- 5 Year | 1 | 3% |
| 6 - 10 Year | 6 | 20% |
| 11 - 15 Year | 4 | 13% |
| More than 16 Year | 19 | 63% |

Partial Least Square (PLS) with SmartPLS was used to test and analyze the hypothesized relationships of the research model. PLS model evaluation is done by evaluating the outer and inner model. Outer model is a measurement model to assess validity and reliability of the model. Inner model is a structural model to predict the causal relationships between the latent variables. Table 5 shows the assessment results of the measurement model.

In the first attempt of the calculation process, there are some items that not significant, so the items are removed from the model. The result of measurement model is almost valid based on the rule of thumb: $AVE \geq 0.5$ and composite reliability ≥ 0.7 (Hair, Hult, Ringle, & Sarstedt, 2014). Only the Human Capital dimension that below the rule of thumb, but since its almost close to the rule of thumb, so all the outer model are considered as valid.

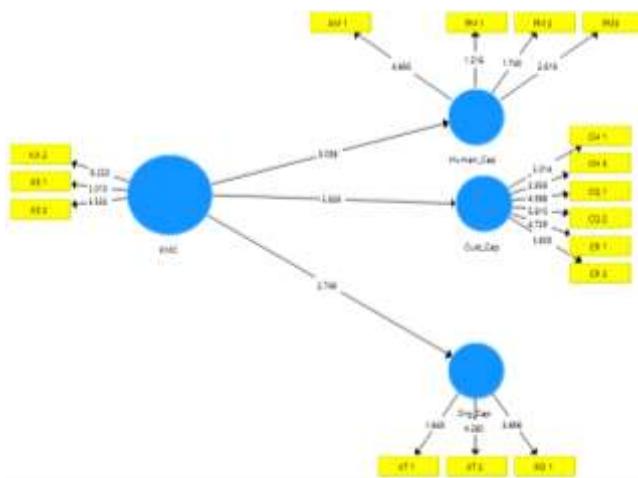
Table 5. Measurement Model

| Dimension | CR | AVE |
|-----------|-------|-------|
| Cust_Cap | 0.911 | 0.633 |
| Human_Cap | 0.75 | 0.449 |
| Org_Cap | 0.795 | 0.579 |
| KMC | 0.771 | 0.531 |

V DISCUSSION

A. Path Diagram

In this research, SmartPLS 3.0 is used to calculate the data, the path diagram for this research is shown in Figure 2.

**Figure 2. Path Diagram**

B. Hypothesis Testing

The hypothesis from literature study can be measured from the t-statistic, with the total respondent of 30, and $\alpha = 0,05$ the t-value is 2.045. based on Hair, Hult, Ringle & Sarstedt (2014), If the t-statistic is greater than the t-value then the hypothesis is accepted. Table 6 shows the t-statistic of each hypothesis.

Table 6. Hypothesis Testing

| Hypothesis | Statement | T-Statistic | Decision |
|------------|---|-------------|-----------|
| H1 | KM performance give positive impact to development of human capital in organization | 3.058 | Accept H1 |
| H2 | KM performance give positive impact to development of customer capital | 5.939 | Accept H2 |

| | | | |
|----|--|-------|-----------|
| | in organization | | |
| H3 | KM performance give positive impact to development of organizational capital in organization | 2.749 | Accept H3 |

From the hypothesis testing, H1 shows that through statistic, the KM performance have positive impact to personnel performance from human capital perspective. The decision based on t-statistic value is accept H2 with value of 3.058, this means that statistically the KM performance influence the personnel/ staff performance in the company. The data is supported by the interview with the staff of KM division that stated that the company have a reward for the KM performance to raise the spirit of all personnel to do the knowledge sharing process. The result from the research are constant with the research from Bontz and Fitz-enz (2002). The KM Cycle which the organization create is intended to improve the performance of employee by creating the environment which easily share information and to facilitate employee to find specific knowledge.

The H2 Hypothesis shows the relation between the KM performance and the customer capital perspective. The decision based on t-statistic value is accept H2 with value of 5.939, this means that statistically the KM performance will influence the development and loyalty of customer of the company. From the data calculation, it is known that respondent feel that there is a significant connection between customer and the KM performance in the company. The data is supported by the interview with the staff of the company that stated that to maintain the customer loyalty, the company often create Corporate Social Responsibilities (CSR) agenda with creating social event, competition , seminar and incubation process so the customer can get closer to the company and the company can get more info about what customer want. Deming (2000) stated that in order to fulfill the customer needs and for gaining competitive advantage, organization must develop system and process which support sustainable process, high quality service and low cost, the knowledge management role is fit because the process itself already withstand the challenge by transforming management quality process and capture, share and added new knowledge.

The H3 Hypothesis shows the relation between the KM performance and the organizational capital perspective. The decision based on t-statistic value is accept H3 with value of 2.749, this means that statistically the KM performance affect the

development of organizational capital. The result from the data is contradictory with the field result from the company. The use of KM is not in all unit in company, only some department function use KM in their operational activity and from the secondary data, it is known that the innovation process from the company is decreased from 145 to 140. From the interview with the staff of KM, all agree that the culture of organization is considered as "stiff", it is reflected by the layout of the work area which are partitioned, this result the personnel feel not ease and can't brainstorming with other personnel to make new innovation, but surprisingly it is said that the "stiff" culture is slowly disappear because the new workforce which are more agile and flexible of changing environment than the old workforce in the company. According to Basu and Sengupta (2007). The success of KM in organization is determined by the organization culture that support the learning, sharing and utilization of knowledge. The climate in organization also affect the success of KM in organization by crating the innovation in organization (Engstrom, Westnes, & Westnes, 2003).

VI CONCLUSION

This research purpose is to find the relation between the knowledge management performance based on the knowledge management cycle process developed by Dalkir (2005) and elaborated into new knowledge management cycle model. In this research three perspective are used, which are human, customer and organizational perspective. From the data collection, it is known that the KM performance affect the development of organizational capital, human and customer capital perspective. From the result of this research, the result can be used as knowledge for the company to plan and make better strategic for gaining better competitive advantage. This research limitation is only in one company, and did not considered other factor such as the use of information system in knowledge sharing process, it is needed to consider the knowledge management system as a tool to sharing performance and the effect to the intellectual capital.

REFERENCES

Anantatmula, V., & Kanungo, S. (2006). Structuring the Underlying Relations Amog the Knowledge Management Outcomes. *Journal of Knowledge Management*, 25-42.

Basu, B., & Sengupta, K. (2007). Assessing success factors of knowledge management initiatives of academic institutions—a case of an Indian business school. *The Electronic Journal of Knowledge Management*, 273-282.

Bontis, N., & Fitz-enz, J. (2002). Intellectual Capital ROI : A causal map of human capital antecedents and consequents.

Dalkir, K. (2005). *Knowledge Management in Theory and Practice*. London: The MIT Press.

Davenport, T., & Prusak, L. (1998). *Working Knowledge*. Cambridge: Harvard Business School Press.

De Long, D. (1997). Building the Knowledge-Based Organization : How Culture Drives Knowledge Behaviors. *Center for Business Innovation*, 1-29.

Deming, E. (2000). *Out of the crisis*. Massachusetts: MIT Press.

Engstrom, T., Westnes, P., & Westnes, S. (2003). Evaluating Intellectual Capital in the Hotel Industry. *Journal of Intellectual Capital*, 287-303.

Hair, J. F., Hult, G. M., Ringle, C. M., & Sarstedt, M. (2014). *A Primer On Partial Least Squares Structural Equation Modelling (PLS-SEM)*. London: Sage Publication.

Kaplan, R., & Norton, D. (1996). *Balanced Scorecard : Menerapkan Strategi Menjadi Aksi*. Jakarta: Erlangga.

Kurniawati, A., & Andrawina, L. (2012). Indicators for Knowledge Management Performance Measurement From Human Capital Perspective using Knowledge Management Balanced Scorecard. *International Seminar on Industrial Engineering and Management* (pp. 187-192). Manado: ISIEM.

Malhotra, Y. (2005). Integrating Knowledge Management Technologies In Organizational Business Processes: Getting Real Time Enterprises To Deliver Real Business Performance. *Journal of Knowledge Management*.

Payne, A. (2005). *Handbook of CRM : Achieving Excellence in Customer Management*. Oxford: Butterworth-Heinemann.

Probst, G., Raub, S., & Romhardt, K. (2000). *Managing Knowledge Building Blocks for Success*. Chichester: John Wiley & Sons.

Ringle, C., Wende, S., & Becker, J.-M. (2015). SmartPLS. Boenningstedt, Germany.

Roos, G., & Roos, J. (1997). Measuring your company's intellectual performance. Long range planning. 413-426.

Skyrme, D., & Amidon, D. (1998). NEW MEASURES OF SUCCESS. *Journal of Business Strategy*, 20-24.

Spender, J. (1996). Making Knowledge The Basis of Dynamic Theory of The Firm. *Strategic Management Journal*, 45-62.

Uttami, N. W., Kurniawati, A., & Puspita, I. A. (2012). Evaluasi Kinerja Knowledge Management Berdasarkan Perspektif Human Capital dengan Metode Knowledge Management Balanced Scorecard di PT Bank X. *Technology, Industry, and Entrepreneurship Conference (TIEC)*, (pp. 5-10). Padang.

Wee, J., & Chua, A. (2013). The peculiarities of knowledge management processes in SMEs: the case of Singapore. *Journal of Knowledge Management*, 658-972.