KNOWLEDGE SHARING MATURITY IN TELCO COMPANY CASE STUDY: TERRITORY AREA X

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Abstract

This study aims to determine the maturity level of knowledge sharing and recommendations to increase the maturity level in Telco organizations, especially in the territory area of PT ABC. This research uses KSM2 (Knowledge Sharing Maturity Model) to determine its maturity level into five stages, namely no KS level, project level, department level, organization level, and knowledge sharing at all levels. A mixed method was conducted in this study through literature review of papers and a survey of 100 respondents with 20 questions divided into three categories, Project level, Department level, and Organizational level. The result shows that the company in the territory area reaches an organizational level in the KSM2 model. The practice of knowledge sharing is good enough that takes place in the organization. but for feedback improvement, it has not been done well, there is no place to accommodate this yet. This research recommends some improvements to knowledge sharing in organizations. First, at the project level to improve proactive knowledge sharing with motivation. Second, at the department level to improve courage to express opinion in meetings. Third, at the organizational level must have routine knowledge sharing formally with a calendar of events. Besides the three points above, feedback and criticism to improve knowledge-sharing practice must be followed up to gain the next level in KS Maturity.

Keywords: *Knowledge, Knowledge Management, Knowledge Sharing, Maturity, Knowledge Transfer.*

INTRODUCTION

Employees are sometimes hesitant to share their knowledge due to various factors that can influence this, such as whether they are knowledgeable employees or not, their level of position, and how connected they are to the rest of the team (Webster et al., 2008). Building knowledge sharing within the company can help employees overcome these barriers. Knowledge sharing also ensures that valuable knowledge passes through the company's silos so that employees from different teams or departments still get the opportunity to learn from one another.

This situation also occurs in state-owned telecommunications companies called PT ABC, precisely in territory offices. The head office has implemented Knowledge Management, but its implementation has not been implemented properly. 60% of employees from PT ABC submitted their knowledge-sharing document to the knowledge

portal. Meanwhile, 45% of employees from Territory X submitted their knowledge-sharing document to the knowledge portal. With the development of the organization, every period of HR changes, and there are retirements and recruits. Employees in PT ABC had reduced -9.81% during retirement. A staffing index that is not ideal makes new employees must have the ability to handle more and more diverse jobs. The experience possessed by senior employees is useful tacit knowledge for the successor of these employees, but so far, the informal sharing mechanism is more often used.

If we take the example from one of the biggest banks in Indonesia called Bank XYZ, the knowledge-sharing mechanism has been carried out formally through the Community of Practice [18]. The maturity of knowledge sharing that exists at the company is very strong despite the COVID-19 pandemic situation. To have a strong knowledge-sharing maturity like Bank XYZ, organizations need to be prepared to carry out Knowledge Sharing to obtain knowledge from employees, especially during the COVID-19 pandemic which is useful for company operations and future organizational development. This study aims to determine the maturity level of knowledge sharing and recommendations to increase the maturity level in Telco organizations, especially in the territory area.

To achieve this goal, the following research questions (RQ) have been raised:

RQ1. What results from knowledge-sharing maturity in the organization?

RQ2. What recommendations to improve knowledge sharing in the organization?

Knowledge Management

Knowledge management is a new and controversial term with many different definitions. The European Management Conference in 1986 was the first to reveal Knowledge Concept Management. Another definition is used in this attempt to capture the complexity of knowledge management. Knowledge management is defined by the American Productivity and Quality Center as "the strategies and processes of identifying, capturing, and leveraging knowledge" (McCampbell et al., 1999).

Some researchers have concluded in recent years that the four parts of the knowledge management process are knowledge acquisition, knowledge protection, knowledge conversation, and knowledge application (Gold et al., 2001). Then combined three different models' processes and presented a new model (Sheron Lawson, 2003). The knowledge management cycle is separated into six steps based on this model:

1. Knowledge creation
2. Knowledge capture
3. Knowledge organization
4. Knowledge storage
5. Knowledge dissemination
6. Knowledge application

A. **Knowledge Sharing**

Knowledge is a valuable resource that can provide a company with several competitive advantages (Abdul-Jalal & Toulson, 2018). Knowledge Sharing (KS) The exchange and distribution of learned knowledge are aided by a set of behaviors (Rajabion

& Kheirabadi, 2011). An organization may be taken into consideration as a social committee to create, percentage, and switch understanding in each type-specific and tacit. Recently, online KS has turned out to be a brand-new channel in which corporations can get beneficial statistics to assist in improvement evaluation and decision-making.

B. **Knowledge Sharing Challenges**

Several studies have identified knowledge-sharing challenges facing companies. One of the papers that identified these challenges revealed that the challenges of sharing knowledge were divided into 6 parts, namely **management, team structure, work processes, team cognition, social issues, and technology issues** (Zahedi et al., 2016). Details of the six challenges can be seen in Table 1.

Table 1 Challenges in knowledge sharing

Challenges	Practice
Management	• Temporary Collocation • Incentives and Motivations
Team Structure	• Flexible Communication Structure • Clarifying Work Structure • Using Boundary Spanning Roles • Forming Virtual Communities
Work Process/Practice	• Frequent Communication • Documentation • Joint Work between Sites
Team Cognition	• Fostering Transactive Memory (TM) • Identifying Gaps and Verifying Understanding • Improving Team Qualification and Expertise
Social Issues	• Social Ties (Trust and Rapport) • Team Cohesion

Technology Issues	•	Providing Groupware
	•	Novel Techniques

C. **Knowledge Sharing Maturity Model**

Knowledge sharing should be viewed as an organizational maturity issue, not as a technical problem. Organizations should approach knowledge-sharing systematically, promote the importance of knowledge-sharing, and expand the definition of project success to include meeting knowledge-sharing goals and objectives. There is one knowledge-sharing maturity model from previous research called KSM2 (Jones, 2007). This framework focuses specifically on knowledge sharing at all levels of the organization. The focus of implementation should be from the top down and the bottom up. By focusing on the smallest units and building upward, the organization builds a sound foundation of knowledge management (Jones, 2007).

There is another knowledge-sharing maturity model in another study (Arif et al., 2017). The maturity model presents three levels of maturity. If an organization is classed as a company at level 2 for a positive variable, it may strategize approaches to increase to level 3. If the finding is that even at level 1 the answer is "no" then the organization is at level 0 and should work at incorporating that variable within the organization (Arif et al., 2017). This maturity model will assist companies in figuring out their level of maturity and the possibilities for improvement.

RESEARCH METHODS

A mixed method was purposed in this study. a survey was conducted, which was generated to ask respondents to give their opinion of the knowledge-sharing management maturity model.

This study uses the KSM2, which is applied to each unit and collects the results to assess knowledge-sharing maturity in the territory area.

Several studies about knowledge sharing in telecommunication companies. Michael K (2007) explain how the knowledge transfer process at Southern Networks has changed with the use of Livelink, and how it has enabled workflow automation over the company's web-based intranet [16]. Akram et al (2017) assessed the effect of organizational justice on knowledge sharing amongst personnel of Chinese telecommunications firms. The research centered on 5 types of organizational justice (distributive, procedural, interactional, temporal, and spatial) and types of information sharing (donating and collecting) [17].

PT ABC is a company engaged in information and communication technology (ICT) services and telecommunication provider in Indonesia. PT ABC had 3 Digital Business Domains:
• Digital Connectivity: Fiber to the x (FTTx), 5G, Software Defined Networking (SDN)/ Network Function Virtualization (NFV)/ Satellite
• Digital Platforms: DataCenter, Cloud, Internet of Things (IoT), Big Data/ Artificial Intelligence (AI), Cybersecurity

• Digital Services: Enterprise, Consumer

PT ABC divides the operational area into 7 Regional Areas, which are further reduced to 61 Territory Areas and 123 Branch Areas, one of which is X Territory Area. To realize these goals and visions, PT ABC has the following missions:

- Accelerate the development of smart digital infrastructure and platforms that are sustainable, economical, and accessible to all people.
- Developing leading digital talents that help boost the nation's digital capabilities and digital adoption rates.
- Orchestrate the digital ecosystem to provide the best customer digital experience.

From the explanation of the objectives, vision, and mission, PT ABC has an agenda to transform into a digital telecommunication company to adapt to changes in the telecommunications industry. It is necessary to know the maturity level of Knowledge Management as one aspect that can be used in PT ABC's readiness to transform into a digital company. By understanding the maturity level of knowledge sharing, the organization can make the necessary adjustments. Therefore, this study aims to assess the maturity level of knowledge sharing in PT ABC using KSM2 and provide recommendations for improvements.

In this research, the method used descriptive mixed method with the following stages: (1) the Literature study is related to the knowledge sharing maturity model, (2) Using the KS maturity model, which is selected based on literature studies, (3) Maturity level data collection which in this case study is based on a questionnaire, (4) Performs a maturity assessment, (5) Conclude from the results of the maturity assessment and provide recommendations based on deficiencies and do an interview to validate some recommendations. The methodology can be seen in Fig. 1.
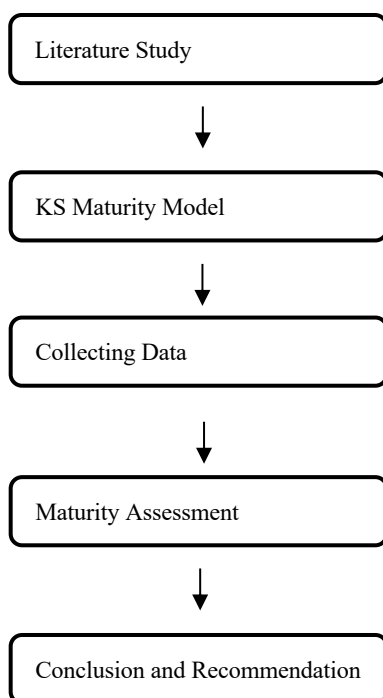
Fig. 1 Research Methodology

This study used Knowledge Sharing Maturity Model (KSM2) proposed by Jones, C. R. (2007) to determine its maturity level where the case study was conducted (Jones, 2007).
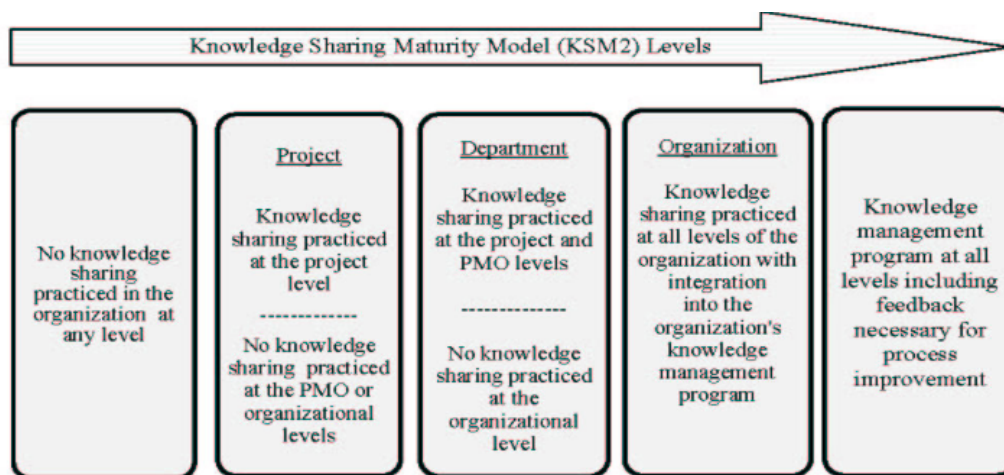

Fig. 2 KSM2 Levels

We use KSM2 because this method is flexible to access knowledge sharing maturity level in any various level organization structure, including individual, unit, or organization as a whole. Besides, this method also does not depend on the type of knowledge sharing to be assessed. According to KSM2, the level of knowledge maturity in an organization is divided into five stages, namely no KS, project, department, organization, and KS in all levels. At the no KS level, an organization has no knowledge sharing practiced in the organization at any level. At project level, knowledge sharing is practiced at the project level. At the department level, knowledge sharing is practiced at the department level with the PMO level. At the organizational level, knowledge sharing is practiced at all levels with integration into the knowledge management program. And the highest level of knowledge sharing is practiced at all levels including feedback and process improvement.

To accomplish any maturity level, any organization must implement all requirements on those maturity levels. The assessment of knowledge-sharing maturity in KSM2 uses several instrument questions at each maturity level. Details about the assessment instrument can be seen in Table 2.

Data collection is done by giving questionnaires to several people in the unit at territory area X. As for the details, the total is 50 respondents, and all respondents have different ages, management levels, and job streams. The KS maturity assessment results for each unit may be different due to differences in tasks, culture, and business processes. The KSM2 assessment instrument was used as a questionnaire guide. The results contribute to the general assessment of KS maturity at PT ABC territory area X.

The questionnaires were divided into three parts. The first part is individual knowledge sharing. The second is group knowledge sharing. And the last one is organizational knowledge sharing. The questionnaires were adapted from KSM2.

RESULTS AND DISCUSSION

The questionnaires were distributed for 7 days through several WhatsApp groups and personal chats. Number of valid questionnaires with 20 questions returned by 100 respondents. The questionnaires have been done with a validity test and reliability test. The data obtained were tested for validity and reliability using Pearson Correlation and Cronbach's Alpha respectively and later calculated, grouped based on each rating scale, and the average value for each variable was determined using Microsoft Excel.

The validity was tested by correlating each item score to the total score using the Pearson Correlation technique and the questionnaire items were declared valid or confirmed to have the ability to measure the variables when the correlation coefficient (r) ≥ r table. The results showed the correlation coefficient value for each item was greater than the r table (0.195), therefore, they were all declared valid.

The reliability was tested using Cronbach's Alpha and the decision-making criteria require the Cronbach's Alpha coefficient value to be ≥ 0.6. The value for the items was observed at 0.794 and they were all declared reliable.

Table 2 Question Categories

Question Categories	Questions
Project Level	10
Department Level	6
Organizational Level	4
Total	**20**

The number of questions is divided into three categories, Individual KS, Group KS, and Organizational KS can be seen in Table 2. and respondents are divided into several categories.

Table 3 Respondents Categories by age

Age	Respondents
<50	36
>50	64
Total	**100**

Table 3 shows the number of respondent categories with an age range greater than 18 years old.

Table 4 Respondent Categories by Job Role

Job Role	Respondents
Manager/Assistant	45

Supervisor/Officer	55
Total	**100**

There are several job roles in the territory shown in Table 4.

Table 5 Respondent Categories by Job Stream

Job Stream	Respondents
Infrastructure	47
Marketing	38
Support	15
Total	**100**

In Table 5, all respondents from a total of 3 job streams.

At the **project level**, our organization relates to daily basis work from individuals. KS has been practiced at an individual level. 100 respondents said that they practiced KS at work. 72 respondents said they share their individual knowledge with other people. 65 respondents said they proactively share their knowledge with other people, and the others share their knowledge in order from their seniors.

Based on the results, compensation incentives can also influence the motivation of employees to disclose information by building internal compensation structures or adequate compensation programs that encourage sharing of intangible assets using tangible resources.

Effective knowledge sharing only occurs after workers meet with peers, support each other, share information, and provide knowledge to lay a common foundation for shared expectations. The tendency to share information leads to more use of collaborative media for information sharing.

At the **department level**, knowledge sharing has been practiced in groups/units. 75 respondents delivered their thoughts in the meeting. 71 respondents were involved in a group project. And 87 respondents gained rotation across the unit. By joining a structured knowledge-sharing group, members can disseminate work-related knowledge while gaining new knowledge from other participants.
According to the results, more importantly, group meetings are usually properly organized by group leaders and focus on specific topics of interest. With a common goal of problem-solving or a harmonious climate of enthusiastic sharing, knowledge-sharing participants tend to form strong bonds with organizations or groups.

At the **organizational level**, KS has been practiced in several ways. There is a knowledge-sharing program in the organizational routine monthly between managers and staff. And many staff submit their knowledge-to-knowledge portal organizations. For example, web portals make it easy to discover, retrieve, and share knowledge, and enable people to share ideas, collaborate effectively, and store knowledge resources in easily accessible knowledge repositories.
4.1 What results from knowledge-sharing maturity in the organization?

Based on the KSM2 model, knowledge sharing has been practiced in project/individual, department/unit, and organization. Several things have been done, sharing knowledge with others informally, and proactively sharing knowledge, although sometimes it is still necessary to be encouraged by their boss to share knowledge.

Expressing opinions at meetings, participating in project groups, and transfers between units have also been carried out as part of knowledge sharing in the department. Knowledge sharing routine program from organizational and submitting documents in the knowledge portal have been done.

This territory area X reaches the organizational level in the KSM2 model because of knowledge-sharing practice in individual and group teams. It's a good enough practice of knowledge sharing that takes place in the organization. but for feedback improvement, it has not been done well, there is no place to accommodate this yet. Several things can be improved to the next level in the KSM2 model.

4.2 What recommendations to improve knowledge sharing in the organization?

In this section, there are many points to improve knowledge sharing in organizations based on research literature. After defining some recommendations, an interview was conducted for this research to validate the recommendations.

First, in individual to improve proactive knowledge sharing with motivational or other benefits, embrace benefit knowledge sharing among staff, more involved in the knowledge sharing portal.

Second, in the department/unit to improve courage to express opinions in meetings, more brainstorming about ideas or problems, involvement increase in group projects, and transfer across the unit over several periods.

Third, the Organizational must have routine knowledge sharing formally with a calendar of events, encourage staff to write knowledge documents, and then submit them in the knowledge portal, Community of Practice. Besides the three points above, feedback and criticism to improve knowledge-sharing practice must be followed up to gain the next level in KS Maturity. The recommendation has been validated by the respondents by interviewing the expert to get valid recommendations to improve knowledge-sharing maturity based on the organization.

CONCLUSION

Based on the results, this paper has a conclusion on the maturity level of knowledge sharing in PT ABC territory X at the organizational level. It can gain next-level KS maturity if several improvements things are done. Second, KSM2 can assess the maturity level of knowledge sharing in the organization. Third is a recommendation to improve knowledge sharing practice to gain the next level in KS Maturity with three recommendations in individuals to improve proactive knowledge sharing with motivational or other benefits.

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