Analysis Of Knowledge Management Maturity Level Based On ISO 30401 And Quality Management System To Reduce The Number Customer Complaints

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Abstract.

This research is carried out by the phenomenon of the increase in the number of customer complaints in the last four years at PT XX, which operates in the field of supplier of products and services in the construction sector. From the results of further research, it was found that there were problems in implementing KM. For this reason, this research aims to measure the Knowledge Management Maturity Level based on ISO 30401 and the quality management system as a strategy for facing global competitive conditions in the future so that leaders can develop effective strategies to reduce loss of organizational knowledge and customer complaints that occur due to lack of knowledge management. This research aims to obtain tools to measure knowledge management maturity in the company that supplies products and services in the construction sector so that management can develop strategies to reduce customer complaints. In several previous studies, knowledge management maturity levels were usually measured in contractor companies to prevent construction failures, but this research was carried out on the company that supplies products and services to contractors. The research methods used include literature studies, expert validation, and questionnaires. The results of this research are ten research sub-variables with 41 indicators as the tools for assessing the knowledge management maturity level. When tested at PT XX, it showed that the knowledge maturity is at level 4, where the organization has managed knowledge well and can be said to be mature. This result is already validated by experts who work in that company.

Keywords: *Knowledge Management, Customer Complaints, Maturity Level, Quality Management System, and ISO 30401.*

I. INTRODUCTION

PT XX is a precast concrete manufacturer that supplies many products to construction service companies in Indonesia. Apart from producing precast concrete, PT XX has developed its business into new products such as ready-mix concrete and quarry. It also develops in the services sector, such as piling, installation and construction services. As PT XX's business continues to grow and the number of competitors operating in the construction sector grows by 26.27% from 2018-2022, there are more challenges in Indonesia's construction market share. Therefore, customer satisfaction is the primary goal of all companies that can be achive by improving the quality of company performance by mana analyzing customer complaints to take corrective action [1].

Along with ongoing business development, the phenomenon currently occurring at PT XX is a trend of customer complaints that has continued to increase over the last four years. Based on research, the key to generating company competitiveness in a competitive situation is to increase customer loyalty. Customer loyalty will be the key to success, not only in the short term but in sustainable competitiveness[2].

Several customer complaints indicate that problems affect consumers' purchasing intentions in the future. This customer complaint is likened to an iceberg phenomenon. These complaints are a small portion of the overall complaints, but they represent problems in the form of complaints from customers who may have the same complaints but do not voice their opinions to the public[3].

A loss of knowledge can cause quality deviations that affect customer satisfaction in the construction industry [4]. At this time, knowledge regarding customer complaints has not been managed well. Based on company procedures, every complaint has been reported to the head office's reporting system, but the results of this report have yet to be turned into lessons learned. The phenomenon that is happening right now is that at PT XX, there is already a knowledge management media in the form of a website. However, this media has not been utilized properly. It can be seen from the lack of employee access to the website that as of July 2023,zz the percentage of access is only 19% of the total number of employees at PT XX. This condition can lead to competitive advantage reductions due to the loss of organizational knowledge [5].

Based on the phenomena that have a significant impact on PT XX's business continuity, it is necessary to carry out an in-depth evaluation by measuring the KM maturity level so that it can be used as a reference for formulating strategies to improve the current KM condition so that it can face global competitive conditions in the future. Moreover, leaders can develop strategies for managing their company's knowledge so that the company's material and non-material losses due to customer complaints can be reduced.

The difference between this research and other previous studies is that the product of previous research is an evaluation of KM Maturity in construction service companies, which aims to determine its influence on the occurrence of construction failures. Several studies also discuss the KM maturity assessment model to improve company performance. This study carried out an assessment of product and service suppliers in the construction sector whose operations are different from construction companies and manufacturing companies, which is a novelty from this research. Therefore, the novelty of this research is an evaluation of knowledge management maturity in companies that supply both products and services in the construction sector. Apart from that, this research is also based on the ISO 30401 knowledge management system and quality management system because it aims to reduce the number of customer complaints in companies that supply products and services in the construction sector.

This research variable was obtained from several previous research sources, one of-them that applies ISO 30401 requirements is the Glycas Quality Compass maturity model with five core concepts (Customer Focus, Human Resource Management, Leadership, Process Focus, Strategic Focus), three intra-core concepts (Performance Measurement, Change Measurement, Continuous Improvement) and two additional concepts (Information-Knowledge Management, Partnership, Social Responsibility and stakeholder value)[6]

II. METHODS

The problem formulation in this research is to determine the indicators that influence knowledge management maturity so that PT XX's existing maturity level can be determined, which influences customer complaints.

This research begins with preparing a problem formulation and then conducting a literature study. After that, the results of the literature study were validated by experts through a questionnaire before the actual survey was carried out with the primary respondents. The results of expert validation may add indicators that are seemed necessary for measurement needs according to field conditions. After that, The survey was carried out according to the results of previous validation and was analyzed to determine the existing knowledge management maturity level.

The object for collecting primary data from the respondents of this research is stakeholders in the implementation of KM at PT XX, provided that the respondents are company employees who work at PT XX Company and have permanent employee status, employees with positions at the level of section head assistant or higher, and employees with three years of work experience in PT XX. With those qualifications, the respondents should understand the actual conditions of knowledge management implementation in PT XX.

The area studied is the relationship between the application of knowledge management based on ISO 30401 and the number of customer complaints at PT XX. This relationship is described in the conceptual framework below:

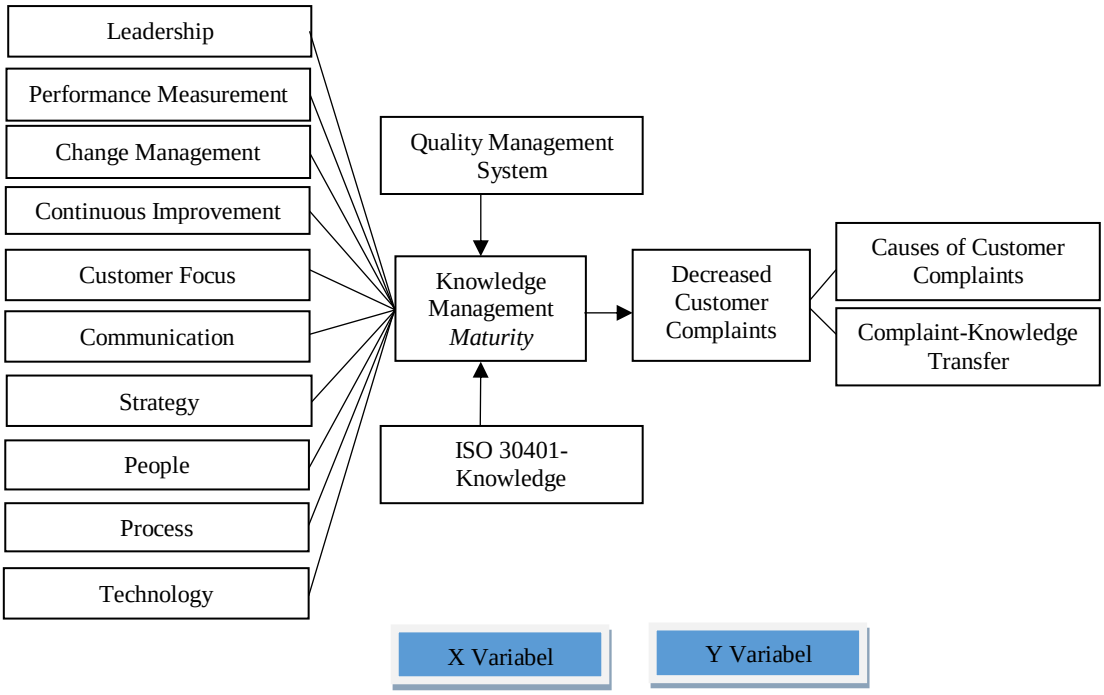

Fig 1. Research Conceptual Framework

Previous research defined the KM maturity level using the Knowledge Management Maturity Model. This model can be used in actual practice and help organizations achieve goals at a certain maturity level. The following are the levels of maturity which are the references used in this research [7]:

1. Initial – The organization does not yet consider knowledge management important
2. Aware – Organizations are aware of the importance of knowledge management
3. Defined – The organization begins to prepare the basic infrastructure to support knowledge management
4. Managed – The organization has managed knowledge well
5. Optimizing – Organizations have integrated knowledge management deeply and automatically become part of organizational processes

III. RESULT AND DISCUSSION

All knowledge management assessment indicators were obtained through a literature review, expert validation using the Delphi method to state that all indicators were suitable for measuring the maturity level of PT XX. The results of expert validation, stated that all indicators were suitable for assessing knowledge management maturity.

Apart from that, one of the experts added an indicator to the people sub-variable, namely knowledge management engagement. According to experts, engagement is an indicator of maturity, and companies must have methods of increasing stakeholder engagement to carry out independent learning using knowledge management. It can increase the company's competitive advantage because knowledge management is influenced by the organization's ability to make each person understand their role and utilize existing knowledge results at the individual level. We can say that effective management of knowledge processes (creation, sharing, and application) is required through active employee participation [8]. KM engagement can also produce four methods of knowledge creation process, namely obtaining the knowledge they are looking for, getting feedback, integrating knowledge, and asking questions so that a mature knowledge management system can be obtained. [9].

Based on the literature study's results and expert validation, the table below contains a maturity assessment tool list with 41 indicators of 10 sub-variables.

Table 1. Sub-Variable and Indicator of Knowledge Management Maturity Level

Indicator		Reference
X. KM Maturity		
X1. Leadership		
X1.1	Management Support	[6]
X1.2	Team Guide	[6]
X1. 3	Motivation	[6]
X1.4	Coordination	[6]
X2. Performance Measurement		
X2.1	Knowledge Strategy	[6]
X2.2	Knowledge Measurement	[6]
X2.3	Knowledge Retention	[6]
X2.4	Knowledge Creation	[6]
X3. Change Management		
X3.1	Structure	[10]
X3.2	Culture	[10]
X3.3	Change Initiation	[10]
X3.4	Communication	[10]
X4. Continuous Improvement		
X4.1	Performance Management System	[11]
X4.2	Shop Floor Management System	[11]
X4.3	PDCA Process	[11]
X4.4	Continuous Learning Culture	[11]
X5. Customer Focus		
X5.1	Applicable legal and regulatory requirements	[6]
X5.2	Risks and opportunities	[6][12]
X5.3	Customer satisfaction	[13]
X6. Communication		
X6.1	Partnership	[6][12]
X6.2	Corporate social responsibility	[6]
X6.3	Stakeholders	[6]
X7. Strategy		
X7.1	KM Implementation	[6]
X7.2	Management commitment and resources	[14]
X7.3	KM Team	[14]
X8. People		
X8.1	Learn needs analysis and induction	[15]
X8.2	Communication and career development	[15]
X.8.3	KM Engagement*	[15]
X8.4	Resource allocation	[15]
X8.5	Monitoring	[15]
X9.6	Evaluation and improvement	[15]
X9. Process		
X9.1	Identify market knowledge	[14]
X9.2	Identify supplier knowledge	[14]
X9.3	Creation	[14]
X9.4	Preservation	[14]
X9.5	Transfer	[14]
X9.6	Learning and training	[14]
X9.7	Innovation	[14]
X9.8	Knowledge-based decisions	[14]
X10. Technology		
X.10.1	Information and communication technology for Knowledge	[14]
X.10.2	Use of information and communication technology	[14]

Note :
* Expert advice

After that, the survey results were obtained from the respondents according to the approved indicators. In this study, the demographics of respondents were divided into three groups based on job position, experience, and education level.

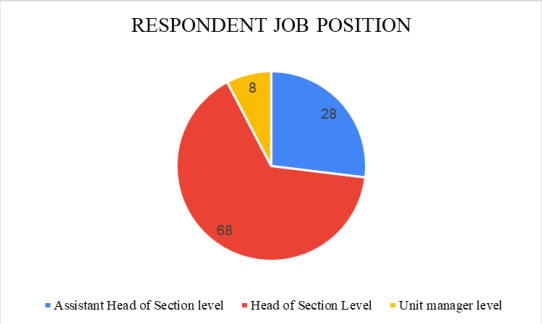

Fig 2. Respondent job demographics

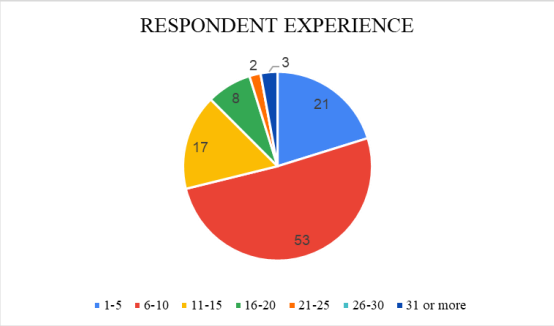

Fig 3. Demographics of respondent experience

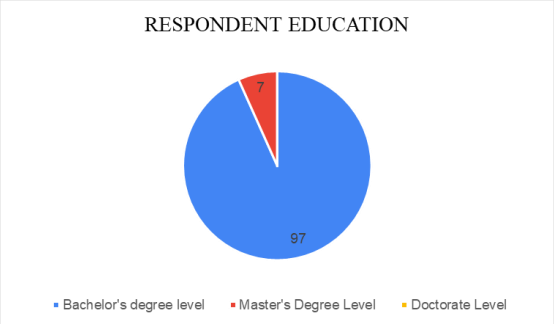

Fig 4. Demographics Education of respondents

The survey results show that PT XX's overall maturity level is at level 4, meaning the organization has managed knowledge well, but in some sub-variables it has a gap level compared to the ideal condition of knowledge management maturity level which should be at level 5. Apart from that, to analyze the gap in the KM maturity level, another survey was conducted with experts to obtain the ideal maturity level and existing maturity level from expert perception for each indicator. All that results is shown in Figure 5. The result also shown that each sub-variable is still below the ideal maturity level except for the Communication sub-variable. That sub-variable gets the ideal maturity level based on expert validation, which is level of 4, as shown in Figure 5.

Fig 5. Radar chart of Maturity level

From the validation process, the expert perception of the existing knowledge management maturity level for the change management, customer focus, communication, and technology sub-variables has met the expected ideal maturity level. On the other hand, the sub-variables of leadership, performance measurement, continuous improvement, strategy, people, and process are still below the ideal maturity level. Meanwhile, the perception of respondents regarding the existing maturity level shows that only the communication sub-variable met the ideal knowledge management maturity level. Respondents felt that the maturity level of leadership, performance measurement, change management, continuous improvement, customer focus, strategy, people, processes, and technology indicators was still below ideal conditions and needed to be improved.

The survey results also shown that there are differences in perception between experts and respondents. According to experts, that differences are because information from management level to employees involved in operations is not conveyed properly. The results of the expert perception survey showed that four sub-variables had reached ideal conditions, whereas according to respondents, only one sub-variable was in ideal conditions. To improve these sub-variables, steps that can be taken include knowing what obstacles can inhibit the ideal maturity level to be achieved. An obstacle to implementing change management that affects organizational knowledge is that change management often has rejection from senior employees because changes do not seem necessary due to poor communication regarding changes Apart from that, focusing on customers regarding existing knowledge is also easier if information from customers is managed. Customer quality-related information impacts the business, but there are no facilities for organizational or cultural transformation [19]. Some very broad knowledge from different backgrounds also becomes an obstacle to applying technology for knowledge management [20].

The gap analysis shows that the maturity level of the communication sub-variable is already at an ideal level based on the respondents' and experts' perceptions. Stakeholder communication is one key to implementing knowledge management. This communication is carried out not only to employees but to anyone related to company policy through company policy information and external issues so that preventive action can be taken before a conflict occurs [16]. One of knowledge management element is corporate social responsibility, where knowledge related to the image of a socially responsible company image can encourage sustainable development for the company [17]. Meanwhile, buyer-supplier relationships must follow market developments and have incentives to share and distribute their knowledge with other parties to increase mutual value and trust. It can be happen by effective communication between parties exchanging ideas and realizing long-term benefits from the alliance. [18].

IV. CONCLUSION

From the results of this research, the tools were obtained for measuring knowledge management maturity level, which consists of 10 sub-variables with 41 indicators validated by experts. So PT XX's overall maturity level is at the Manage level, which means the organization has managed knowledge well. This level was obtained from survey results on respondents and has also been validated by experts. The knowledge management maturity level is at level 4 out of 5. However, PT XX must reach the optimizing level as its ideal maturity level based on expert perception. PT XX must obtain level 5, where the

organization has integrated in-depth knowledge management and automatically becomes part of the organizational process. From the validation process, the expert perception of the existing knowledge management maturity level for the change management, customer focus, communication, and technology sub-variables has met the expected ideal maturity level. On the other hand, the sub-variables of leadership, performance measurement, continuous improvement, strategy, people, and process are still below the ideal maturity level. Meanwhile, the perception of respondents regarding the existing maturity level shows that only the communication sub-variable met the ideal knowledge management maturity level. Respondents felt that the maturity level of leadership, performance measurement, change management, continuous improvement, customer focus, strategy, people, processes, and technology indicators was still below ideal conditions and needed to be improved. According to experts, the difference in expert perception and respondent perception regarding the results of existing maturity level conditions is due to information from the management level to employees involved in operations not being conveyed properly.

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