

KNOWLEDGE MANAGEMENT ASSESSMENT IN EPC DIVISION PT. HUTAMA KARYA TO SUPPORT ACCELERATION AGILE TRANSFORMATION

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ARTICLE INFO	Abstract
Article History: Accepted : Desember 2023 Fixed : Desember 2023 Approved : Desember 2023	<p>The background of this research shows that the EPC Division at PT HUTAMA KARYA has relatively low performance when compared to other divisions in the company. One approach to overcome this performance problem is to apply the concept of Knowledge Management as a whole. By accelerating Agile transformation with the hope of having a positive impact on the performance of the EPC Division. This research uses mixed methods, combining surveys to all employees of the EPC Division of PT HUTAMA KARYA as well as conducting structured interviews with senior leadership representatives. A data triangulation approach was taken to integrate the analysis results from both sources, both quantitative and qualitative data. The results showed that the implementation of knowledge management in the EPC Division of PT HUTAMA KARYA is currently not optimal, so it needs development in several important aspects.</p>
Keywords: <i>Knowledge Management, Knowledge Management Maturity Level, knowledge management directory, innovation, agile transformation.</i>	
	Abstrak
Kata Kunci: <i>Manajemen Pengetahuan, Tingkat Kematangan Manajemen Pengetahuan, direktori manajemen pengetahuan, inovasi, transformasi agile.</i>	<p>Latar belakang riset ini menunjukkan bahwa Divisi EPC di PT Hutama Karya memiliki kinerja yang relatif rendah jika dibandingkan dengan divisi-divisi lainnya di perusahaan. Salah satu pendekatan untuk mengatasi permasalahan kinerja ini adalah dengan menerapkan konsep Knowledge Management secara menyeluruh. Dengan mempercepat transformasi Agile dengan harapan dapat memberikan dampak positif terhadap kinerja Divisi EPC. Riset ini menggunakan metode campuran, menggabungkan survei kepada semua karyawan Divisi EPC PT. Hutama Karya serta melakukan wawancara struktur kepada perwakilan pimpinan senior. Pendekatan triangulasi data dilakukan untuk mengintegrasikan hasil analisis dari kedua sumber, baik data kuantitatif maupun kualitatif. Hasil penelitian menunjukkan bahwa Penerapan manajemen pengetahuan di Divisi EPC PT Hutama Karya saat ini belum optimal, sehingga perlu pengembangan dalam beberapa aspek penting.</p>
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INTRODUCTION

Rapid changes in customer needs and intense competition force organizations to become more responsive to market changes. In dealing with these changes, there are various methods that can be used such as agile transformation (Olteanu et al., 2018). Agile transformation allows companies to be more flexible and adapt more quickly to changes in customer demand and market trends.

The importance of agile transformation according to (Gibson, 2016) namely being able to make work processes simpler and optimal, making quality and customer satisfaction increase because construction companies can respond to customer needs and expectations more quickly and accurately, helping construction companies reduce project risk and eliminate waste of resources through continuous, retrospective monitoring, and rapid adaptation to changes that may occur, enable construction companies to enhance collaboration across teams, remove communication barriers, and increase productivity through a focused approach to core values and sustainable delivery.

Agile Transformation is a project management approach that focuses on adaptive, collaborative, and flexible teamwork. This approach has been implemented in various companies around the world and has proven effective in increasing productivity, accelerating product development, and providing added value to stakeholders. However, implementing Agile Transformation not only requires changes in business processes and technology, but also requires changes in organizational culture and knowledge management (Gandomani & Nafchi, 2015).

Agile Transformation enables companies to achieve these goals by introducing a more adaptive, collaborative, and flexible project management methodology. This approach helps companies to optimize the use of resources, accelerate product development, and provide added value to stakeholders. In order to deal with the most pressing issues, several businesses have adopted or shifted to Agile project management approaches. The shift is more formally referred to as an Agile transformation process, and it necessitates a large number of complicated and long-lasting changes to the organization as a whole (Gandomani & Nafchi, 2016)

The executive management and project team leaders play a very important role as they have to change their mindset and behaviour from command and control to the coaching and mentoring role as well as to continuously drive

development of learning organizational culture. Agile coaches, champions, change agents and community of practice are knowledge sources comprised with practitioners and enthusiasts that may decrease the complexity of deployment and mitigate the risk of a transition failure. One of the key factors that can influence the successful implementation of Agile Transformation is knowledge management. Knowledge management is a knowledge management process that includes the creation, dissemination, use and development of knowledge within an organization (Gandomani & Nafchi, 2015).

The effective knowledge management is an antecedent of a successful Agile transformation process deployment in large-sized companies (Laanti et al., 2011). Knowledge management is an important part of every growing organization's approach to project management (Koskinen, 2012).

Several methods of implementation of KM models are offered with a variety of comprehensive and stages, usually through the services of a trainer who promoted through the internet. However, the question that arises is how the KM framework models that are easily used for government institutions in Indonesia? Searching through the internet and finally found a KM framework known as APO KM Framework. KM Framework has been implemented in several organizations of small and medium-scale enterprise (SME's) in APO member countries. It is claimed that the APO KM Framework method is very easy to implement.

From the results of research conducted by (Paterrek, 2017) As shown by the results of the research, the change in project management methodology significantly impacted the project organization as a whole. PT HUTAMA KARYA has implemented knowledge management with the aim of sharing knowledge and knowledge transfer, a forum to discuss innovations related to the field of expertise, a forum to develop recommendations for improving certain methods and increasing insight and competenc.

Based on BOD assessment, the achievement of project performance until August 2023 shows that the EPC Division at PT HUTAMA KARYA is relatively low performance when compared to other divisions. The EPC Division is the only division that recorded a score of 57, indicating that its performance is classified in the less category. In contrast, other divisions, such as the Construction Services Division, Building Division,

and General Civil Division, show scores above 70, which falls into the sufficient category. Thus, this comparison illustrates that the EPC Division requires special attention to improve its project performance.

METHOD

This research is policy evaluation research using mixed methods. Where data collection using a quantitative approach will use a questionnaire survey for all employees of the EPC Division of PT HUTAMA KARYA. The population in this study were 195 employees of PT Hutama Karya. In this research, the types of data that will be collected are primary data and secondary data. Meanwhile, data analysis will use several methods to analyze a set of data that has been collected.

Starting from quantitative methods via questionnaires to qualitative methods via structured interviews. Quantitative research instruments are measured using a measurement scale in the form of a Likert scale (Sugiyono, 2009).

RESULTS

Validity Test Result

With that, all the question items from all variables in this study are valid, which means that the instrument can be used to measure what should be measured. Based on the results of the test, it was concluded that there were no invalid question items, so that all items could be used to measure research variables.

Reliability Test Result

Tabel 1. Questionnaire Reliability Test Result

No.	Category	Cronbach Alpha	Reliability
1	KM Leadership	0.779	Reliable
2	Process	0.773	Reliable
3	People	0.802	Reliable
4	Technology	0.796	Reliable
5	Knowledge Process	0.802	Reliable
6	Learning and Innovation	0.812	High Reliable
7	KM Outcomes	0.813	High Reliable

Based on the table above shows that the value of the reliability coefficient of each category is greater than the value of Cronbach Alpha = 0.6, so that all statement items on each variable are declared reliable.

Respondent Analysis

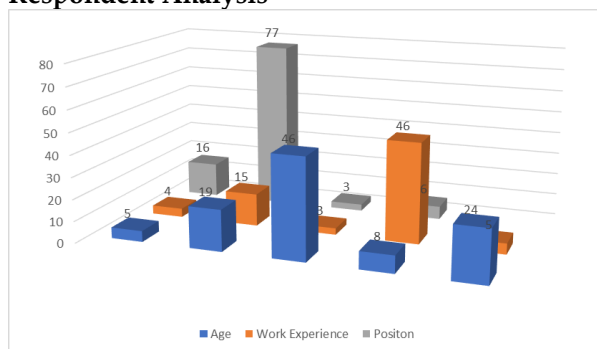


Figure 1. Respondent Analysis in PT HUTAMA KARYA

Based on the diagram above, it can be seen that the majority of respondents have positions as Staff/Officer/MT/equivalent as many as 77 respondents (75.5%) half of the overall sample obtained in this study, followed by Manager/Assistance Manager/equivalent as many as 16 respondents (15.7%), then Project Manager/Deputy

Project Manager/equivalent as many as 6 respondents (5.9%), and finally VP/EVP/equivalent as many as 3 respondents (2.9%).

Knowledge Management Maturity Level in EPC Division PT. HUTAMA KARYA

Table 2. KM Maturity Score Value

No.	Category	Number of Questions	Maximum Score for Each Question (point)	Maximum Score for Each Category (point)
1	KM Leadership	6	5	30
2	Process	6	5	30
3	People	6	5	30
4	Technology	6	5	30
5	Knowledge Process	6	5	30
6	Learning and Innovation	6	5	30
7	KM Outcomes	6	5	30
	Total	42	35	210

This means that knowledge management at PT HUTAMA KARYA still needs to be evaluated and improved, which is a good start. If seen clearly, the score is still far from reaching a good level, then there are some improvements that must be adjusted by PT HUTAMA KARYA.

Table 3. KM Maturity Score Value in EPC Division

No.	Category	Max Score	Category Score	Score Gap
1	KM Leadership	30	20,06	9,94
2	Process	30	23,26	6,74
3	People	30	25,89	4,11
4	Technology	30	24,08	5,92
5	Knowledge Process	30	24,61	5,39
6	Learning and Innovation	30	26,42	3,58
7	KM Outcomes	30	24,61	5,39
	Total	210	168,93	41,07

Business Solution

Based on quantitative analysis, qualitative, and triangulation data, researchers found a variety of opportunities that can be improved to overcome these weaknesses and improve the maturity level of KM in the EPC Division of PT HUTAMA KARYA. The business solution is also supported by additional questions that the researcher asks to the resource person and will be attached to the appendix.

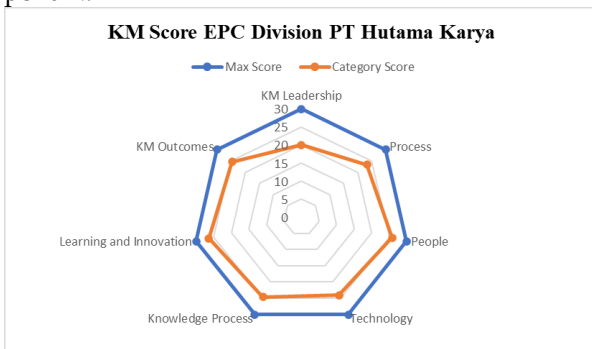


Figure 2. Radar Chart of APO KM Maturity Level in EPC Division PT Hutama Karya

Radar charts are very effective for performing a comparative analysis of two variables, a characteristic or gap analysis. In this study it can be seen that the level of maturity KM at PT Hutama Karya still has a fairly large gap to reach the maximum level. Below is a column chart and a comparison with the average of all categories.

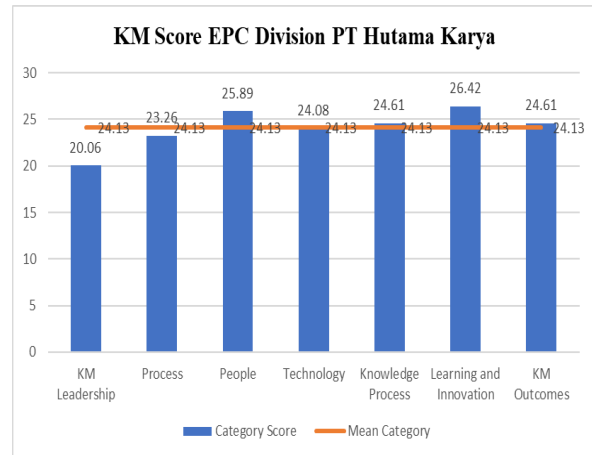


Figure 3. Column Chart of APO KM Maturity Level by Category in EPC Division PT Hutama Karya

Based on the diagram above can be seen that the average value of all categories is 24.13 with the highest category of learning and innovation has a score of 26.42. Other categories that were above the average were the people category with a score of 25.89, the knowledge process and KM outcomes categories with a score of 24.61. In the category of scores below average, the technology category has a score of 24.08, then the process category has a score of 23.26 and finally the KM leadership category has a category of 20.06.

The next stage can be continued in the analysis through the gaps received from the previous analysis in the 7 categories of the APO KM framework, especially for the smallest score as follows KM leadership, process and Technology.

KM Leadership Category

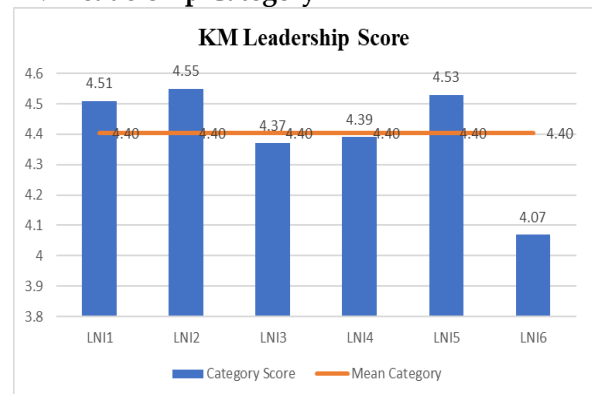


Figure 4. Survey result chart on KM Leadership category

Process Category

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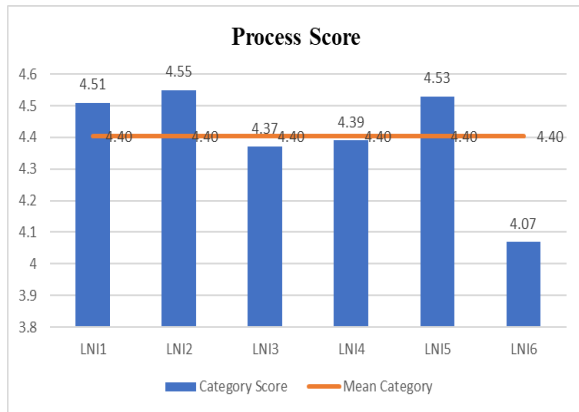


Figure 5. Survey result chart on process category

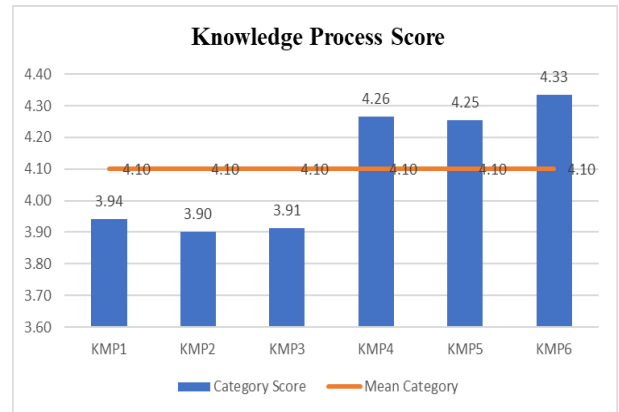


Figure 8. Survey result chart on Knowledge Processes category

People category

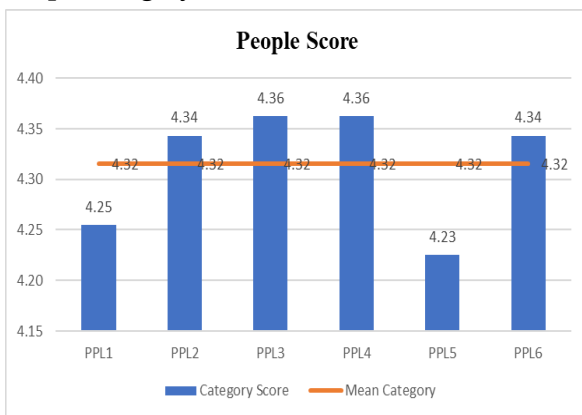


Figure 6. Survey result chart on Knowledge People category

Learning and Innovation Category

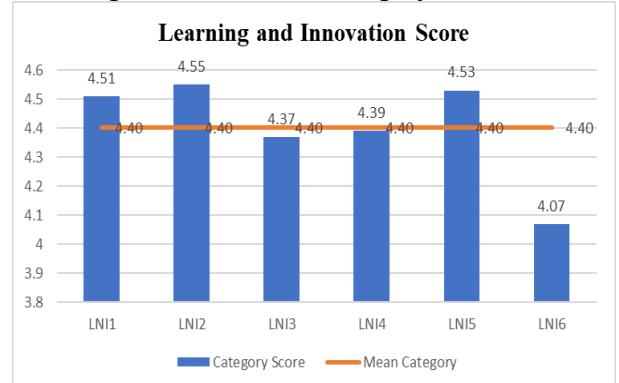


Figure 9. Survey result chart on Learning & Innovation category

Technology category

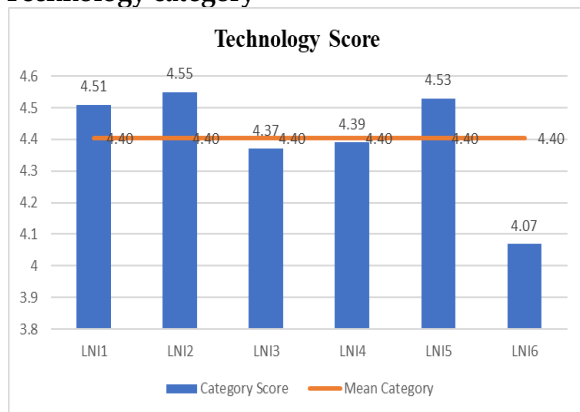


Figure 7. Survey result chart on Technology category

KM Outcomes Category

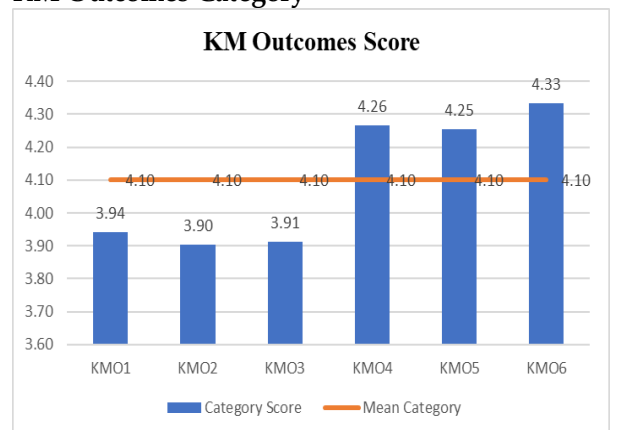


Figure 10. Survey result chart on KM Outcomes category.

Knowledge Process Category

Table 4. Business solution in EPC Division PT. Hutama Karya

No	Improve targeted KM Category	List of Solution	Category	Detailed Action	Goals
1	KM Leadership	Create a policy that requires the company's workforce from the top to the bottom level to apply knowledge management to the company.	Leadership	<ul style="list-style-type: none"> - Involve relevant parties, including executive management, department heads, and employees, in the policy planning and design process. - Get feedback to ensure the policy is relevant and acceptable to all parties. 	Improving productivity and innovation as a form of corporate performance and collaboration
2	KM Process	Create Operational Standards that systematically organize knowledge management related to procurement and budgeting plan guidelines and project management plans. in the EPC division	Process	<ul style="list-style-type: none"> - Establish a knowledge management team that focuses on managing information related to the procurement and budgeting plan guidelines and project management Plan. - Build a knowledge database covering the Procurement and Budgeting Plan and project management plan guidelines and best practices related to cost control. - Implement an automated reporting system that generates reports on compliance with the procurement and budgeting plan and project management plan guidelines. 	To ensure that the knowledge held by the company can be accessed, shared, and utilized efficiently by the entire team more effectively, in line with Agile principles.
3	KM Process	Setting a budget in developing knowledge management practices	Process	<ul style="list-style-type: none"> - The budget provided will cover various aspects, including software, training, human resources, and knowledge management infrastructure. 	Create an accurate budget and can provide effective guidance during the process of implementing knowledge management in accelerating Agile transformation.
4	KM Process	Sharing knowledge both skills and techniques on work between units in the EPC division	Process	<ul style="list-style-type: none"> - Establish a cross-unit mentoring program, where employees from more experienced units can mentor colleagues from other units - Hold a case study sharing session where units can present projects or challenges that were successfully overcome with a customized approach. 	By adopting diverse approaches and actively involving employees, organizations can improve their understanding of knowledge management and facilitate more effective agile transformation.
5	KM Process	Make policy adjustments from the company's core competencies to KM effectively	Process	<ul style="list-style-type: none"> - Form a specialized knowledge management team consisting of members with experience in procurement projects. - Use a knowledge management system integrated with the project management system to 	Integrating knowledge management with agile principles and practices will create a consistent and supportive framework, accelerate the transformation process and improve overall organizational effectiveness.

Knowledge Management Assessment in EPC Division PT. Hutama Karya To Support Acceleration Agile Transformation

No	Improve targeted KM Category	List of Solution	Category	Detailed Action	Goals
				<ul style="list-style-type: none"> - ensure easy access to relevant information. - Implement a project monitoring system that provides real-time updates on time and cost performance. 	
6	KM People	Provide appreciation or appreciation of the application of knowledge management to EPC division employees.	People	<ul style="list-style-type: none"> - Establish award criteria for employees with satisfactory performance levels. - Assessment is conducted objectively and transparently 	Build a culture that supports knowledge management practices, encourages collaboration, and motivates employees to actively engage in agile transformation
7	KM People	Conducting introductions related to the company's work culture by increasing professionalism of work	People	<ul style="list-style-type: none"> - Teach and apply best practices in project management, including efficient planning and execution techniques. - Implement an individual performance monitoring system that can provide continuous feedback. - Facilitate strong cooperation and synergy among project team members. 	To help employees adapt and feel comfortable in a new work environment
8	KM People	Create assessment criteria for company leaders and managers in implementing KM	People	<ul style="list-style-type: none"> - Criteria are based on how much of the policy created is implemented by leaders and managers. 	To ensure that leaders have an active role in supporting knowledge management
9	KM Technology	Create a single storage area that can be accessed by all EPC division employees.	Technology	<ul style="list-style-type: none"> - Choose a suitable platform for storing and managing documents and information such as Microsoft SharePoint, Google Workspace (Drive), Dropbox - Create a folder structure based on information needs and hierarchy. - Provide technical support contacts for employees if they experience problems using the platform 	A great step to facilitate collaboration, share information, and manage knowledge efficiently across the organization in accelerating agile transformation
10	KM Technology	Created an information and technology development unit in the EPC division.	Technology	<ul style="list-style-type: none"> - Define the scope of work of the information and technology development unit. - Selecting employees who are competent in technology 	Maintaining the knowledge possessed by each employee is the key to a successful agile transformation.

No	Improve targeted KM Category	List of Solution	Category	Detailed Action	Goals
11	KM Technology	Improve IT infrastructure that is more focused on knowledge management in the EPC division.	Technology	<ul style="list-style-type: none"> - Select technologies that fit the needs, scalability, and capabilities for the future. - Prioritize improvements based on impact and urgency. - Continuously upgrade and infrastructure in accordance with technological developments and company needs. 	Implementing the right technology is a crucial step in optimizing work and running an Agile transformation process.
12	KM Technology	Evaluation of digital surveys related to employee capabilities at MK	Technology	<ul style="list-style-type: none"> - Identify potential issues such as confusing questions or inefficient survey flow. - Implement a real-time monitoring system to see how the survey is progressing. - Establish metrics to measure survey success and fulfillment of initial objectives 	Identified strengths, weaknesses, and development potential in each ECP division unit through a digital survey related to knowledge management in accelerating agile transformation.
13	KM Technology	Create a policy on the use of the Internet related to communication	Technology	<ul style="list-style-type: none"> - Use a professional business email address for official communications. - Utilize collaboration platforms such as Microsoft Teams, Slack, or similar platforms for team and project communication - Use instant messaging judiciously, especially for quick questions or informal discussions 	By taking these steps, organizations can create a fast, efficient and responsive communication flow, which conforms to Agile principles and supports the transformation towards a more adaptive work culture.
14	KM Learning and Innovation	Organized an event on knowledge management related to the level of domestic content by inviting speakers from outside the company.	Learning and Innovation	<ul style="list-style-type: none"> - Identify speakers who have expertise and experience in knowledge management and domestic content levels. - Continue engagement after the event by providing a forum or platform to share thoughts and experiences after the presentation. - Reward or recognize employees who contribute or achieve successes related to TKDN and knowledge management. 	Create a dynamic learning ecosystem, increase the value of innovation, and leverage existing knowledge outside the organization to accelerate agile transformation.

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No	Improve targeted KM Category	List of Solution	Category	Detailed Action	Goals
15	KM Learning and Innovation	Conduct comparison activities with other companies as a benchmark for knowledge management.	Learning and Innovation	<ul style="list-style-type: none"> Select a few companies that have good knowledge management practices with scale or complexity. Conduct interactive Q&A sessions on implementation, obstacles, results, and lessons learned from other companies. 	Drawing insights from companies that have successfully implemented KM that supports agile transformation can help customize strategies and build a strong foundation for renewal.
16	KM Learning and Innovation	Conducting training and certification programs tailored to the competency needs and goals of the Company.	Learning and Innovation	<ul style="list-style-type: none"> Details of the training curriculum including topics, duration, and schedule After a certain amount of time, measure the impact of the training on employee performance and the achievement of company goals by comparing before and after the training. 	To improve employees' skills and knowledge and support the achievement of the company's vision and mission as part of the agile transformation.

Implementation Plan and Justification

In this step, the researcher determines the timeline of the implementation plan derived from the business solution that has been analysed in the previous section. The details and sequence of the plan for its implementation are indicated as follows:

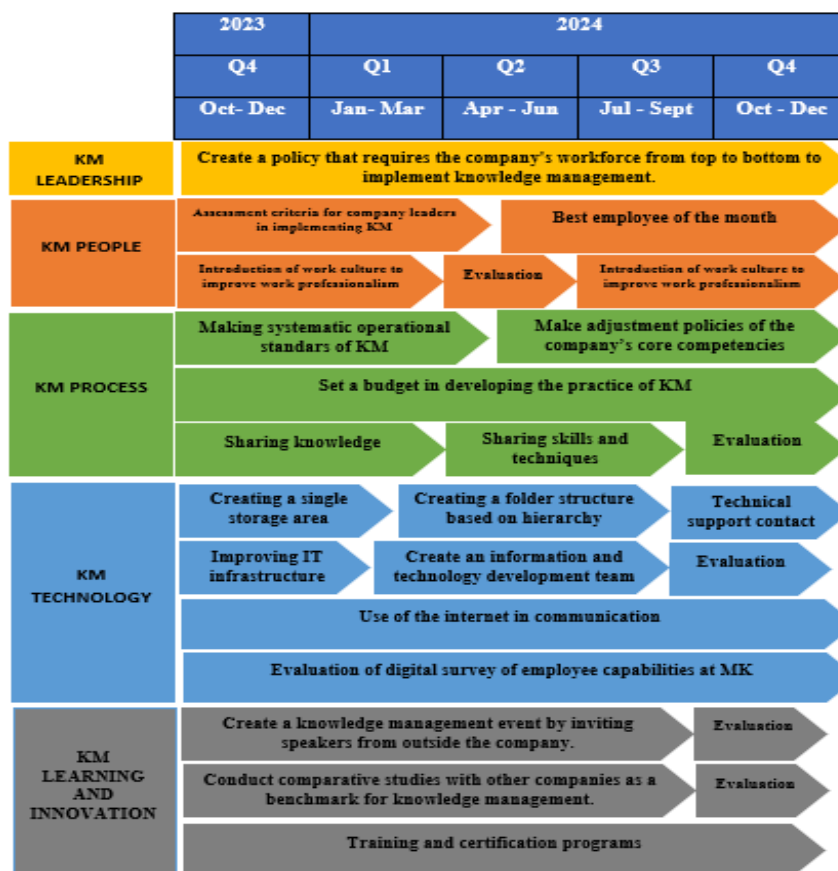


Figure 11. KM Business solution implementation plan on EPC Division PT. Hutama Karya (Author, 2023)

The design of the application of quantitative and qualitative results followed by interviews with management leaders in conducting priority analysis and providing solutions to the company's business so that it is more productive in managing the company. A solid and effective implementation plan, which will help the company better achieve its business goals.

CONCLUSIONS

This research focuses on analyzing Knowledge Management Assessment (KMA) in the EPC division of PT. HUTAMA KARYA, with the aim of supporting the acceleration of agile transformation. The results of this study provide valuable insight into the extent to which knowledge management practices at PT. HUTAMA KARYA support their agile transformation. This research identifies areas that need to be improved in knowledge management, including the use of technology, organizational culture, and collaboration between teams.

REFERENCES

- Gandomani, T. J., & Nafchi, M. Z. (2015). An empirically-developed framework for Agile transition and adoption: A Grounded Theory approach. *Journal of Systems and Software*, 107, 204–219.
- Gandomani, T. J., & Nafchi, M. Z. (2016). Agile transition and adoption human-related challenges and issues: A Grounded Theory approach. *Computers in Human Behavior*, 62, 257–266.
- Gibson. (2016). Agile Construction for the Electrical Contractor . *National Electrical Contractors Association (NECA)*.
- Koskinen, K. U. (2012). Problem absorption as an organizational learning mechanism in project-based companies: Process thinking perspective. *International Journal of Project Management*, 30(3), 308–316.
- Laanti, M., Salo, O., & Abrahamsson, P. (2011). Agile methods rapidly replacing traditional methods at Nokia: A survey of opinions on agile transformation. *Information and Software Technology*, 53(3), 276–290.
- Olteanu, A., Castillo, C., Boy, J., & Varshney, K. (2018). The effect of extremist violence on hateful speech online. *Proceedings of the International AAAI Conference on Web and Social Media*, 12(1).
- Paterek, P. (2017). *Agile transformation in project*

organization: knowledge management aspects and challenges.

Sugiyono, P. D. (2009). *Metode Penelitian Kuantitatif Kualitatif dan R&D*, Bandung: CV. Alfabeta.