Digital Governance of Project Management System using Soft Systems Methodology , Case Study of SOE Holding Survey Services (IDSurvey)

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Abstract

This article aims to establish the digital governance of the project management system at PT Biro Klasifikasi Indonesia (BKI). As a holding company for BUMN Survey Services (IDSurvey), although there is already a Decree of the BKI Board of Directors No. DU.007/HK.303/KI-21 concerning Refinement of Business Portfolio Determination for SBU (Strategic Business Unit) Function Improvement, but in practice, there are still various obstacles in BKI project management, such as delays in project completion and target mismatches in project management. This study uses a qualitative method with a soft systems methodology approach with research time from January to August 2023 at the BKI Head Office. By using e-government, digital governance, and project management, the study results show that BKI needs to develop a standard operating procedure for digital governance of project management in order to succeed in the project. This study recommends that after the SOP for Digital Governance of the Management System is made, the SVP of Commercial Business Operations, as the leading sector, needs to socialize and disseminate the governance SOP that is made.

Keywords: *E-government, Project Management, Digital Governance, Business Strategy, SOE Holding.*

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A. INTRODUCTION

Organizations are faced with a rapidly changing era since the fourth industrial revolution. This change is characterized by massive technological disruption, where a series of new technologies seek to combine the physical, digital, and biological worlds. (Schwab & Sala-i-Martín, 2016; Yunus et al., 2019). This technological disruption is driving exponential change across all disciplines, economies, and industries. Disruption can bring promising benefits such as business efficiency and cost savings (Wasono & Furinto, 2018). However, if the organization fails to develop its business to reach market standards or due to the emergence of new players who bring innovations or technologies that are cheaper, simpler, and more efficient, then the business can be threatened in its business continuity (Burgelman & Siegel, 2008; Christensen, 2007; Christensen et al., 2018; Christiansen & Bunt, 2012) This phenomenon is then known as disruptive innovation.

Technology is growing rapidly around the world. The presence of various technological advances such as artificial intelligence, big data, nanotechnology, robotic process automation, blockchain, and the Internet of Things has affected

various lines of life (Yunus et al., 2019). In fact, the use of technology has become inseparable from the daily activities of every individual (Schwab, 2016). The radical development of digital technology has also led to digital disruptive innovation.

In addition, this technological development phenomenon is also accompanied by the high level of internet penetration around the world. Based on data from We Are Social, global internet usage shows an increasing trend every year (see Figure 1). (Kemp, 2023). Furthermore, the We Are Social report in 2023 also states that more than half of the population, or as much as 64.6% of the population in the world, has used the Internet, and the average use reaches 6 hours 37 minutes per day (see Figure 2). (Kemp, 2023)

In the Indonesian context, Kepios data shows that internet users in Indonesia in 2023 will exceed the global average of internet usage. (Kemp, 2023). Of the total 212.9 million population, 77% already use the Internet. In addition, almost the entire population of Indonesia has been touched by communication technology, such as cellular phones. This can be seen from the number of active cellular connections in Indonesia, which reaches 128% of the total population.

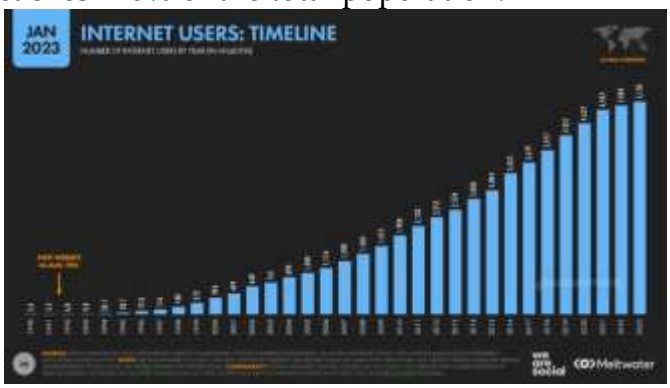


Figure 1: Trend of Increasing Internet Usage Globally

Source: Kemp (2023a)

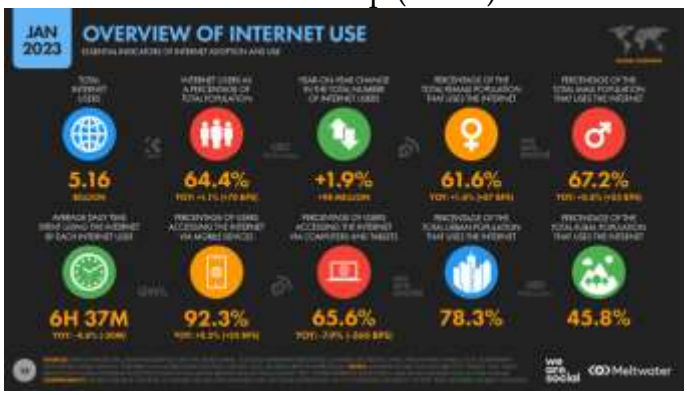


Figure 2. Worldwide Internet Usage Data for 2023

Source: Kemp (2023b)

Basically, digital governance exists due to advances in information and communication technologies, such as mobile phones, smart devices, social networking platforms and services, big data, artificial intelligence (AI), and the Internet of Things (IoT) (Melitski et al., 2011). Thanks to these technological advances, every sector and industry is increasingly competing to create innovations through

good digital governance. In fact, digital governance is considered a panacea to overcome managerial and governance challenges (Melitski et al., 2011).

As technology develops, the application of the e-government concept seems to be a necessity for the public sector. As a state company whose shares are 100% owned by the state, BKI needs to implement e-government in its project management process. In order for the e-government process to be implemented properly, a capable digital governance system is needed.

The core values of digital governance include efficiency and effectiveness, as well as transparency, sustainability, and inclusiveness. For example, efficiency in service delivery, such as electronic filing of tax returns in direct contact with citizens, is a core value promoted by e-government. Digital governance expands the list of core values to transparency, which further encourages citizen participation in generating and evaluating policy ideas. The list of core values also includes sustainability and inclusiveness, both of which play a more central role in digital governance than conventional notions of e-government.

The main emphasis in digital governance, compared to e-government, with regard to activities is integration and interaction. The integration emphasized by digital governance is vertical and horizontal integration in the public sector and across sectors. In the public sector, digital integration involves inter-agency cooperation within the same government unit (such as public service information systems) and intergovernmental collaboration across units at different levels of government (such as in the area of emergency management). Such integration takes place within the government and utilizes a whole-of-government approach (Chen & Hsieh, 2009).

PT Biro Klasifikasi Indonesia (Persero), known as BKI is a State-Owned Enterprise (SOE) appointed by the Ministry of SOEs as the SOE Holding Survey Services (IDSurvey). In addition, BKI is also entrusted with the sale of innovative and creative products and services in the field of commercial services carried out by BKI with the aim of providing TIC (Testing, Inspection, Certification) guarantees.

In carrying out the project implemented by BKI as IDSurvey in SBU, there are various problems, namely delays in completing a project, which often arise and can have an impact on all work in a project. This study aims to analyze the digital governance of the project management system on IDSurvey through the SSM (Soft Systems Methodology) approach.

B. LITERATURE REVIEW

1. Digital Governance

The concept of digital governance itself stems from the concept of e-government. In simple terms, e-government can be defined as the utilization of Internet networks to facilitate communication and information dissemination between the public and the government. (United Nations, 2020). E-government is often seen as a way to improve government accountability and public participation (Wong & Welch, 2004)

Digital governance is the use of ICT by governments to provide quality information and services to the public in an efficient, transparent, and accountable manner. (O. Ehiane et al., 2019). The goal is to coordinate the behavior of stakeholders in responding to the risks of digital transformation in all fields. (Jia & Chen, 2022).

In addition, digital governance aims to ensure that business digitalization is implemented in accordance with the objectives and minimize the costs of digitalization (Tiwari, 2022).

In its implementation, there are various factors that influence the success of digital governance. Melitski et al. (2011) identified that the organizational environment, data, technology, and institutions are the determining factors for the success of digital governance. According to Gómez Díaz et al. (2023), there are four main pillars that must be considered in implementing digital governance, namely, the need for a long-term plan supported by technology, performance improvement, process improvement, and relying on data. The purpose of implementing digital governance is to coordinate the behavior of stakeholders in responding to digital transformation risks in all fields (Jia & Chen, 2022).

2. Project Management

According to Kerzner (2009), project management is the process of planning, organizing, leading, and controlling company resources to achieve predetermined short-term goals. Furthermore, project management uses a system approach and hierarchy (flow of activities) vertically and horizontally. From the definition above, it can be seen that the concept of project management contains the following main points:

a. Definition of management based on its function, namely planning, organizing, leading, and controlling company resources in the form of people, and materials.
b. Short-term management with specifically outlined goals. This requires specialized management techniques and methods, especially the planning and control aspects.
c. Using the SSM (Soft Systems Methodology) approach.
d. Has a horizontal hierarchy (flow of activities) in addition to a vertical hierarchy (Soeharto, 1999)

Project management has a special and different role in traditional organizational structures that are highly bureaucratic and cannot quickly respond to changes. In principle, a project can be defined as a one-time effort within a predetermined period of time with a clear target of achieving the results that have been formulated at the time the project development will begin.

The implementation of a project has an important impact on organizational success (Albert et al., 2017). Therefore, project success is very important to measure. Project success is assessed based on whether the outputs work as needed and provide the desired benefits and whether the organization succeeds in achieving strategic goals and improving its performance. (Serrador & Rodney Turner, 2014). In this case,

focused outputs are usually associated with increased profits, better growth, and improved market position (Shenhar et al., 2001).

The project management system aims to be able to run each project effectively and efficiently so as to provide maximum service for all customers. The project management system is implemented because it is supported by professional human resources in the parts needed to run each project. Project managers actively carry out project activities and are responsible for:

Consolidate and integrate project implementation plans to properly define activity descriptions, scheduling, budgets, resource allocation, and control.

Coordinating with all relevant parties, both internal and external to the company, in realizing project activities concerning system design/engineering, product development, operation/production, installation/testing/commissioning, and after-sales and controlling the delivery of project results in order to comply with requests both from the aspect of time, cost budget and quality level required.

Report regularly on the project status and progress.

Controlling project implementation discrepancies and project plan changes and making necessary corrections and preventions to maintain the project's success rate (Soeharto, 1999).

C. METHOD

This research uses the Soft Systems Methodology (SSM) approach. SSM is an organized way to deal with perceptions of action-oriented (social) problem situations, which organizes thinking about a particular situation so that corrective action can be taken (Budiarso et al., 2022; Devi et al., 2023; Reynolds & Holwell, 2020) (Budiarso et al., 2022; Devi et al., 2023; Reynolds & Holwell, 2020). According to (Checkland, 1990, 2000; Checkland & Poulter, 2006) there are seven steps, as shown in Figure 3, which include: (1) Mapping the problem situation unstructured, (2) the problem situation expressed, (3) Developing root definitions (RD) of relevant systems, (4) Creating conceptual models (CM), (5) Comparing conceptual models with the real world (comparison of models and real-world); (6) Systematically desirable and culturally feasible; and (7) defining/action to improve the problem situation.

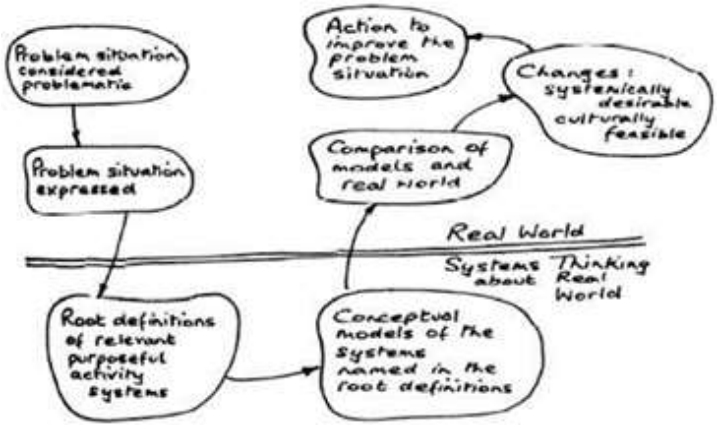


Figure 3. Stages of SSM

Source: Checkland & Poulter (2006)

This method is suitable for overcoming the complexity of the problematic situation encountered in this research, where field conditions are never static and also contain many perceptions that interact with each other (Reynolds & Holwell, 2020).

The data and information in this study were collected from three data sources, as conducted by Budiarso et al. (2022), namely documentation, in-depth interviews, and direct observation. The research time was from January to August 2023 at the BKI Head Office. In-depth interviews were conducted with nine (9) informants, namely: 1) Senior Manager of Marine Operations, 2) Senior Manager of Oil and Gas Offshore Operations, 3) Senior Manager of Business Support, 4) Manager of General Administration and Marketing, 5) Manager of Finance, 6) Auditor, 7) Engineering, 8) Inspector, and 9) Development & IT.

Interviews were conducted in-depth and open-ended, ensuring that informants agreed to their position as resource persons and gave appropriate answers or informed consent (Corbin & Strauss, 2008; Creswell & Poth, 2016; Patton, 2014). Meanwhile, the literature review aims to extract data and information from various sources such as letters, regulations, books, research results, journals, magazines, websites, and various other credible sources of documentation.

D. RESULT AND DISCUSSION

To better understand the context of how SSM provides explorative learning in problem-solving (Suryaatmaja et al., 2020), the discussion in this research organizes the stages of SSM according to the context of the problem.

1. Stage one: The problem situation is unstructured

The various phenomena of project management governance problems that occur at BKI require the company to systematically revamp project management. As a profit-oriented state-owned company, BKI is expected to carry out project management on time, at the right cost, and at the right quality.

The priority in the Survey Services SOE Holding Strategy (IDSurvey) is strengthening the strategy and business team known as SBU (Strategic Business Unit), which is responsible for monitoring and evaluating the holding business strategy, creating a new business strategy in accordance with shareholder aspirations, business alliance strategies, and new business development.

Based on an interview with the Senior Manager of Marine Operations, the reason is that the absence of poor project management governance has caused many BKI projects to experience delays, not optimal service quality, and overlapping business portfolios.

In 2020, the percentage of project delays was 3.92%, increased to 4.52% in 2021, and in 2022 even increased to 10.37%. By considering transparency, participation, and collaboration, it is necessary to consider what strategies are most appropriate to minimize delays in project completion; starting from the functions of planning, organization, and implementation to project control so that project management can be managed properly (Chen, 2017; Jia & Chen, 2022; Melitski et al., 2011).

2. Second Stage: Problem situation expressed

In this stage, researchers must compile a picture that can visualize thoughts related to situation analysis, starting from the main problem relationships to the organizational context through the preparation of a rich picture (RP). The purpose of making RP is to capture and analyze clearly related actors, structures, viewpoints of problematic situations, and ongoing processes, and find out obstacles and potential problems that might occur (Budiarso et al., 2022; Checkland & Poulter, 2006; Devi et al., 2023; Reynolds & Holwell, 2020). The RP was created through observation, in-depth interviews, document study, and informal conversations with actors involved in the research.

With reference to the results of the study by Gómez Díaz et al. (2023), the need for four pillars of digital governance, namely the need for long-term plans supported by technology, performance improvement, process improvement, and relying on data. Based on the results of the RP, the research problem obtained is the need to build a digital governance project management system at BKI, as shown in Figure 4.

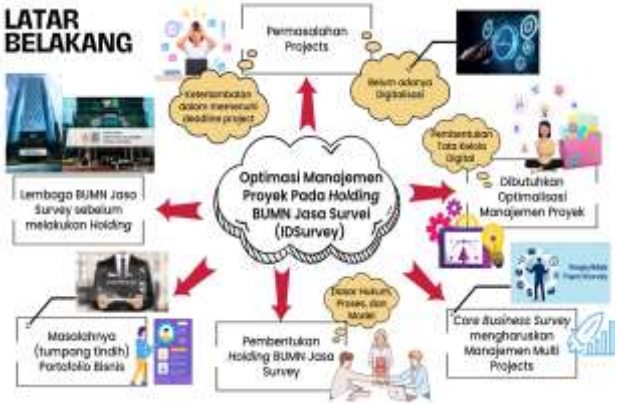


Figure 4. Rich Picture of BKI Project Management

3. Stage three: Develop root definitions of relevant systems.

The next process in the SSM research stage is to conceptualize purposeful activity models in a thinking system. Two stages in the system of thought are developing RD and CM. RD is a relevant system related to the research problem (Budiarso et al., 2022; Checkland & Poulter, 2006; Devi et al., 2023; Fitriati, 2015; Reynolds & Holwell, 2020; Santoso, 2015; Wilopo & Fitriati, 2016). In analyzing Root Definition, the PQR formula is also done: do P, by Q, in order to help achieve R, where PQR answers the question: What? How, and Why" (Checkland & Poulter, 2006). The organization of PQR in this thesis is the system established and run by BKI (P) through the preparation of a project management system governance SOP (Q) to create a digitally managed management project as monitoring, control, and completion of integrated projects at SBU Marine Services IDSurvey (R).

In conducting RD analysis, researchers compiled CATWOE elements to analyze the transformation process that can be seen, while the 3Es are indicators of system performance. First, there are beneficiaries or consequences of the system or transformation process. These parties include the Ministry of Transportation, Ministry

of Maritime Affairs & Fisheries, SKK Migas, Members of KKKS (contractor of cooperation contract) SKK Migas, Directorate General of Oil and Gas ESDM, Shipping Companies, INSA Association, ALFI, GINSI, Port Business Entity Owners and other service user communities.

Second, the parties that form the project management digital governance SOP itself. The formers of the BKI project management digital governance SOP are the Quality Health Safety Environment (QHSE), Planning & Accounting Division, cq Operations Planning and Risk Section, Risk Management Division, Corporate Secretary Division cq Governance Section, SBU Marine Services cq Oil and Gas Marine and Offshore Operations Section, and IDSurvey President Director. Third, individuals or groups who are responsible for and can stop the implementation of the BKI project management governance SOP, namely SBU Marine IDSurvey.

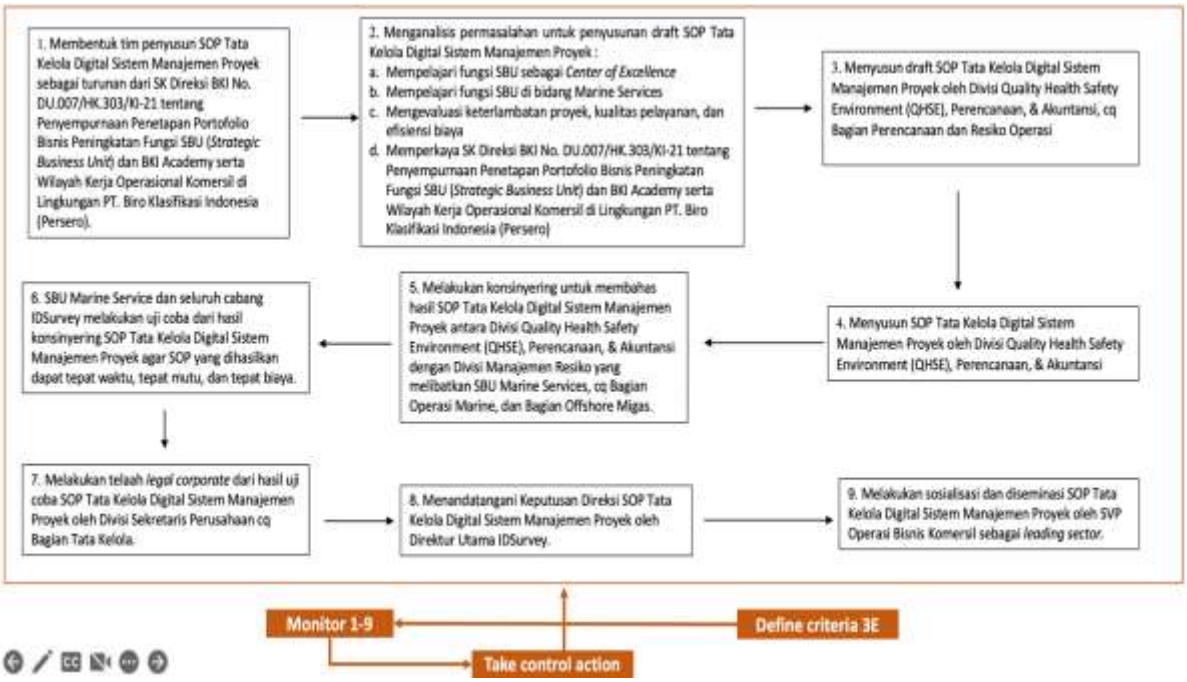
While the 3E analysis is used in measuring the performance of transformation success, these criteria are efficacy (E1), which is a criterion that states that the transformation is running well; efficiency (E2), which is a criterion that states the success of the transformation is completed with the minimum possible resources; and effectiveness (E3), which is a criterion that states that the transformation can help in achieving goals at a higher level or in the long term. (Budiarso et al., 2022; Checkland & Poulter, 2006; Devi et al., 2023; Fitriati, 2015; Reynolds & Holwell, 2020; Santoso, 2015; Wilopo & Fitriati, 2016).

4. **Fourth stage: Creating conceptual models.**

After formulating RD by analyzing the CATWOE and 3E formulas, the next step is to form a conceptual model. The model is prepared by describing the activities of the system formed. Then the model that has been formed will be compared with the existing model in the real world (which currently exists). By making this comparison, it will be concluded whether the model can be implemented and accepted in terms of the prevailing culture and system, so that the transformation can be carried out (Budiarso et al., 2022; Checkland & Poulter, 2006; Devi et al., 2023; Fitriati, 2015; Reynolds & Holwell, 2020; Santoso, 2015; Wilopo & Fitriati, 2016).

In this study, the CM prepared an SOP for the digital governance of the project management system on IDSurvey, as shown in Figure 5. The SOP itself can be interpreted as a work process guide that becomes a reference for achieving the targets of a company or agency. (Pratama & Permatasari, 2021). In this case, the SOP for the digital governance of the project management system is intended as a follow-up to the BKI Board of Directors Decree No. DU.007/HK.303/KI-21 concerning the Refinement of the Business Portfolio Determination, Improvement of SBU and BKI Academy Functions, and Commercial Operational Work Areas within BKI.

As an initial step, the SBU Marine Services Division worked with the Quality Health Safety Environment (QHSE) Division to form a team to develop a SOP for the digital governance of the project management system. Based on the BKI Board of Directors Decree, the establishment of the SOP for the digital governance of the project management system involves the QHSE Division as the area responsible for coordinating the company's operational standards. In order for the SOP for the digital governance of the project management system to be implemented appropriately and solutively, of course, a problem review and literature review are needed to enrich information about the actual conditions that occur in the SBU Marine Services Division. Therefore, the SBU Marine Services Division, together with the QHSE Division, needs to study the functions of the SBU in the field of Marine Services and its role as a Center of Excellence.



A review of the problem was also obtained from the evaluation of project delays, service quality, and cost efficiency. Not only that, but a literature review was also carried out on the BKI Board of Directors Decree regarding the Refinement of the Determination of the Business Portfolio, the Improvement of the SBU and BKI Academy Functions, and the Commercial Operational Work Area within BKI.

Furthermore, the draft SOP for the digital governance of the project management system was prepared by the QHSE Division and other relevant divisions, such as the Planning and Accounting Division, as well as the Planning and Operational Risk Section. After the project management system digital governance SOP was drafted, the QHSE Division involving SBU Marine Services conducted SOP consignment to all IDSurvey branches. In its implementation, a pilot test or trial of the project management system digital governance SOP is important before the implementation stage to adjust to the company environment and minimize the occurrence of system failures(Muhaling et al., 2021).

From the trial results, various issues will be found, both in positive and negative terms, which can be used as evaluation material for the next SOP implementation. Before being officially implemented, the SOP for the digital governance of the project management system needs to go through the legal corporate stage by the Corporate Secretary Division cq Governance Section. Furthermore, it is signed by the President Director of IDSurvey and disseminated by the SVP of Commercial Business Operations as the leading sector to the relevant parties.

5. **Fifth Stage: Conduct comparison of conceptual models with the real world (comparison of models and real world)**

Comparison of models and the real world. This stage compares the conceptual model with the real world, with the hope that the new model can improve the situation. When applying the model, further questions should be asked about the situation to get feedback on the model (Checkland, 2000).

In the preparation of the SOP for Digital Governance of the Project Management System as a derivative of the Decree of the BKI Board of Directors concerning the Refinement of the Determination of the Business Portfolio for Improving the Functions of SBU and BKI Academy and Commercial Operational Work Areas within the BKI Environment, this SOP, it is necessary to compile starting from the concept model activity until there is reflection with the actors. In addition to the real world, it is necessary to compile descriptions of activities and outputs (outputs) from the activity of ideas or values). The real-world comparison mapping, activity description mapping, output determination, and actor reflection are efforts to minimize failure in the process of preparing the BKI project management governance SOP.

Validation of the conceptual model by stakeholders is necessary to obtain feedback (Jackson, 2003). The aim is to provide fodder for debate on possible changes to the conceptual model to address the problem situation. A social process in which worldviews are presented for examination and implication in human activities. Changes and decisions are openly implemented and discussed together (Jackson, 2003).

In this case, there was no SOP governing project management at the previous BKI. In addition, there are still many project management governance problems, such as time delays, service quality problems, and budget inefficiencies. These problems also come from the inadequate digital governance of BKI project management. Thus, the conceptual model of the BKI project management digital governance SOP is an effort to fix the existing problems.

6. **Sixth stage, feasible, desirable changes**

Changes to the system must meet two criteria, namely desirable in principle and feasible to implement (Checkland, 2000). Changes should accommodate the growing concerns among actors about whether changes in the system are desirable in terms of the model and feasible in terms of the prevailing history, culture and politics.

Often, these changes can be classified as attitudinal, structural, and procedural. In order for the wishes of all parties to be fulfilled, some action needs to be taken to improve the problem situation so as to reduce some of the initial anxiety (Jackson, 2003).

As a reflection of this stage, the SBU Marine Services Division, QHSE Division, and Planning & Accounting Division need to conduct a consignment of the results of the project management digital governance SOP to all units in BKI. The purpose of the consignment is to agree on the results of the SOP that has been prepared. With mutual agreement, it is a sign that all parties agree to the SOP, want changes, and are ready to comply with the rules that will apply in the future.

As for the feasible aspect, SVP Commercial Business Operations, as the leading sector and SBU Marine Services Division, needs to socialize and disseminate the SOP for Digital Governance of the Project Management System in order to realize governance that is on time, on quality, and on budget.

7. Stage seven is action to improve the problem situation.

It is the last stage that produces solutions that can be applied in the real world. At this stage, action is taken to improve the problem situation, so changing it allows the cycle to begin again. The arrows connecting the seven stages only indicate the logical structure of the mosaic of actions that make up the whole process. The work done in the actual study will not stop but will continue to be developed and refined (Checkland, 2000).

E. CONCLUSIONS

The conclusion of the seven stages of the methodological cycle above tends to lead to the emergence of new problem situations, distinct from problems that already have 'solutions'. Problem-solving should be seen as an endless process so that participants' attitudes and perceptions must be continually explored, tested, and changed, and new conceptions of desirability and feasibility emerge (Jackson, 2003). anxiety (Jackson, 2003).

The results of this study indicate the need for the preparation of a project management digital governance SOP at BKI as a IDSurvey. As a corporate response to the various problems that occur in its project management process, BKI is trying to transform through the establishment of project management digital governance SOPs. The formation of the project management digital governance SOP involves many related parties, both those affected and those directly involved in the preparation process. In this study, the process of forming the project management digital governance SOP was analyzed using the SSM method.

The presence of the project management digital governance SOP at BKI is part of the implementation of e-government. Not only that, each stage in the SOP preparation process also considers the four pillars of digital governance according to Gómez Díaz et al. (2023) are the need for long-term plans supported by technology, performance improvement, process improvement, and relying on data.

In practice, BKI already has principles for carrying out project management, namely on time, on cost, and on quality. To meet these principles, there is a need for a new step that BKI must take to maximize its performance. One of the steps that can be taken is to develop new technology. In preparing for this, BKI has several plans. First, it Harmonizes Survey System (HSS) for the implementation of class and statutory surveys. Second, launching Remote Survey services can increase surveillance flexibility and schedule reliability as well as real-time drone inspection. Third, developing cyber security services in the maritime sector related to shipping and ports, as well as maritime e-commerce platforms. Fourth, developing digital ship and port design calculation technology using 3D systems and Detail Engineering Design (DED) services. Fifth, developing real-time online training services for external parties developed by BKI Academy. Finally, changing the survey schedule from a reactive approach to a proactive approach through the development of the Digital Survey Planning Tool. The steps in digitization will help BKI improve project management governance more efficiently and effectively.

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