AUDITING | RESEARCH ARTICLE

Building Digital Governance Integration Internal Audit Through Strategy Application Programming Interface (API): Study on BUMN Holding Survey Services (IDSurvey)

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ABSTRACT

This article discusses the Indonesian Classification Bureau, which needs to integrate digital governance from the application Internal Audit – Internal Audit Portal (SPI) to the application Human Resource Management System (HRMS) for the automation of Key Performance Indicator (KPI) results. However, until now, the Society still uses manual calculations to display Corporate, Work Unit, and Individual KPI, which causes delays in reports to shareholders and disbursing team member benefits. This research uses a qualitative method with the Soft Systems Methodology (SSM) approach to analyze digital governance utilizing the SPI portal application in the Internal Audit Division. The results show that no tools automate KPI values from the SPI Portal application to the HRMS system. This research can provide recommendations for making SPI Portal SOP policies that can measure and monitor performance, and the results can be sent directly to the HRMS systems. This research contributes to manually changing the KPI assessment system into a system that can produce accurate, transparent, and equitable results.

Keywords: Digital Governance, Internal Audit, Key Performance Indicators, SPI Portal.
JEL Code: M15, M42, O33.

I. Introduction

In this era of the fourth industrial revolution, where the development of Information and Communication Technology (ICT) through digitalization is increasingly rampant through technological advances such as artificial (AI)intelligence, big data, nanotechnology, process automation (RPA- robotic Robotic Process Automation), blockchain, and the Internet of Things (IoT), the concept of digitalization is not only a major foundation in business transformation, but also opens up new avenues for organizational governance (Yunus et al., 2019). For example, the use of technology is web-based, currently revolutionizing the world of work and learning (Li, 2013; Rosa, 2020). Digitalization changes how organizations access and manage information and enables the integration of new tools and systems that support more efficient corporate governance. Digitalization has also led to a paradigm shift in corporate decision-making by leveraging big data analytics and AI to provide deep insights that support more timely and intelligent

decision-making. Thus, digitalization is not just a trend but is closely related to advancing digital governance (Chen, 2017).

This progress encourages various sectors and industries to compete in creating innovation through efficient digital governance. In the context of enterprise management, digital governance is used to coordinate the response of various stakeholders to the risks of digital transformation in various aspects (Jia & Chen, 2022). Managing digital governance effectively becomes an important key in enhancing a comprehensive and integrated framework, while utilizing innovation to advance corporate governance and improve services to service users, including in State-Owned Enterprises. These various technological developments have been adopted to help improve employees' or workers' knowledge, skills, and abilities through training and development (Huang et al., 2020), which is part of digital governance. Digital governance is a development of the concept of E-Government that focuses more on community participation in its implementation (Khan & Krishnan, 2021; Melin & Wihlborg, 2018).

The use of digital media is a bridge between the community and the programs and activities carried out by the government, so it also requires aspects of information disclosure for users (Sobri, Lionardo, and Putra 2023), with digital media determining the nature and measurement of the effectiveness of digital service delivery. In practical terms, digital standards are made so that an organization can apply implementation details and digital governance can be carried out consistently and effectively (Welchman, 2015). Standards in digital governance are needed to establish and maintain an environment that meets the criteria. The establishment of a standards-compliant environment consists of 4 stages. The first stage is the define stage, where digital standards have been established and documented. The second stage is disseminating, where digital standards are effectively disseminated to all digital stakeholders. The next stage is implementation, where all digital standards are implemented without exception. The last stage is the stage of measurement, where digital standard compliance will be measured and managed for sustainability. The stages of establishing this environment by digital standards can be seen in Figure 1. This indicator not only helps classify decision makers but also helps understand who should decide matters relating to strategies, policies, and standards (Welchman, 2015).
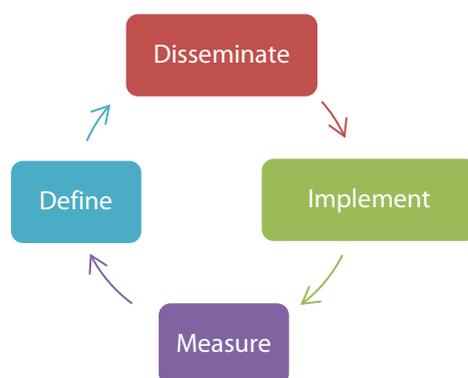

Figure 1. Stages of Establishing a Digital Compliance Environment
Source: Welchman (2015)

This article discusses the integration of internal and digital governance at PT Biro Klasifikasi Indonesia (Persero) as a Holding Survey Services (HJS), which has implemented web-based technology in conducting internal audit activities within the company through the SPI Portal. PT BKI (Persero) is the only national classification assigned by the government of the Republic of Indonesia by the Decree of the Minister of Sea Transportation No.Th.. 1/17/2 dated September 26, 1964, concerning the obligation of Indonesian-flagged ships to have ship certification issued by PT BKI (Persero). In 1982, PT BKI (Persero) developed a business in the commercial sector, which became known as the Commercial Department. With time, PT BKI (Persero) developed its organ units, and one of these organ units is the Internal Control Unit (SPI).

For over 20 years, SPI PT BKI has worked manually, making reports on inspection findings and the results of examinations and follow-ups. However, in 2020, SPI PT BKI developed innovations for the activities of BKI internal auditors in making reports on inspection findings and reports on inspection results, and this innovation is the creation of web-based reports and follow-ups.

II.   Research Method

This research method uses SSM as an organized approach to dealing with perceptions of action-oriented (social) problem situations, which organizes complex situations approach, messy, ill-structured, ill-defined, or unstructured, so that corrective action can be taken (P Checkland 1990; P Checkland and Poulter 2020; P Checkland and Scholes 1999; Peter Checkland, 2000; Checkland & Poulter, 2006). This method is suitable to address the complexity of the problematic situation encountered in this study, where field conditions are never static and contain many perceptions that interact with each other (Budiarso et al., 2021, 2022; Suryaatmaja et al., 2020). Each individual involved, whether as a policy actor, implementer, or beneficiary of the policy (target group), has a different perspective (Permatasari, Hardjosoekarto, and Salomo 2020). Real cases will be used to provide more context and understand how SSM supports exploratory learning and problem solving.

The implementation of the seven stages of SSM including, (1) Identifying problems and understanding the situation that occurs (the problem situation sunstructured), (2) Expressing the problem situation, the (3) Performing preparation of root definition on relevant systems (root definition of relevant systems), (4) Creating conceptual models of human activity systems, (5) Comparing conceptual models with what happens in the real world (comparison of models and real world), (6) Systematically desirable and culturally feasible, and (7) Implementing conceptual systems that have been designed to monitor then the results (Take/action to improve the problem situation). Data and information in this study were collected from three data sources, as conducted by Budiarso et al. (The research was conducted from January to September 2024 at the Head Office of PT BKI Persero). Interviews were conducted with eight informants from the Operations, Finance, and Production Units, with a position composition of four informants from the IT sub-field and Development or Operations, three informants from the business control sub-field, and one other informant from the administration sub-field. Interviews are structured and open so that informants feel comfortable and open in providing appropriate answers or informed consent in an appropriate manner (Knott et al., 2021). At the same time, the literature review is used to extract information and data from various credible sources such as journals, books, previous research results, websites, and forms of documentation.

III.   Results and Discussion

To better understand how the SSM context solves problems, the discussion in this research organizes four (4) stages of analysis based on Welchman's digital governance standard (2015).

3.1.   Stage one: Define

3.1.1.   The unstructured problem situation

Issues surrounding the digital governance integration of internal audits, ranging from transparency issues to issues of team member benefits arising from the application of manuals in unit or individual KPI assessment, require companies to continue to improve digital governance integration. Based on the results of interviews with one of the resource persons from the IT & Development sub-field, he explained that the problem was due to the SPI portal application as an input for the results of the auditor's KPI not yet connected to the system owned by Human Capital and IT Operations. As part of a state-owned company, this problem is a shared responsibility between the SPI Division and the Division of Human Capital and IT Operations to

integrate this system. By considering the principles of effectiveness, efficiency, and economy, it is necessary to consider management strategies to minimize time and increase transparency within the company.

3.1.2. The problem situation expressed

At this stage, the researcher compiled a picture of the problem presented in a rich picture (RP). RP visualization in the SSM method is used to illustrate the problem systematically through images (Bell & Morse, 2012, 2013; Berg & Pooley, 2013a; Fougner & Habib, 2008; Horan, 2000; Kish, Bunch, & Xu, 2016). Therefore, this RP is used to combine visual data and verbal data from interviews with relevant interviewees 30 Combining data in the form of RP can help increase the validity and investigation of the research (Bell & Morse, 2013).
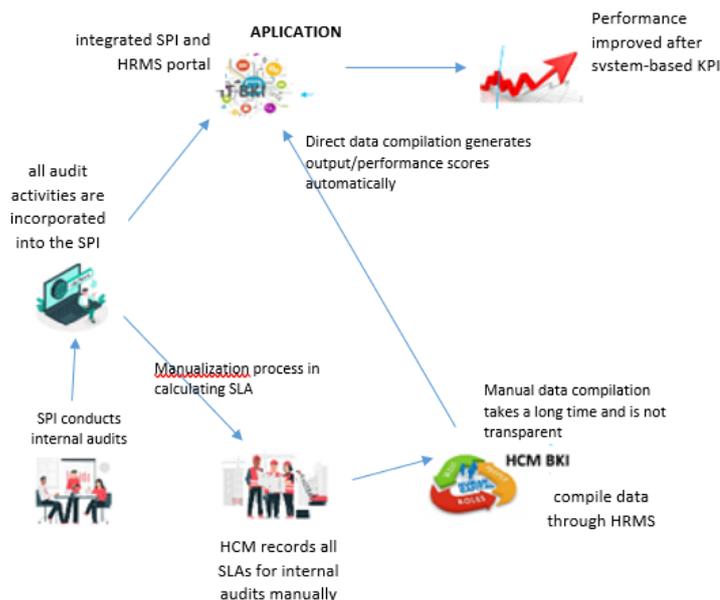

Figure 2. Rich Picture
Source: Author, 2025.

Based on the results of the Rich Picture (RP) that researchers wrote, the problem obtained is the need for a Standard Operating Procedure (SOP) for governance integration between two applications (SPI Portal and KPI application in HRMS.

3.2. Stage Two: Disseminate

3.2.1. Root definition of relevant systems

Root Definition (RD) describes the essential components of a directed activity system, focusing on the problem, solution, and reason for performing the activity (Checkland, P. and Poulter, J. in Reynolds, M. and Holwell, 2020; Checkland & Poulter, 2006). In this case, the integrated system between the SPI portal and KPI assessment in HRMS centers on the development of SOPs to measure and monitor the performance of all units and all employees as an implementation of the integrated digital governance of internal audit To conduct an RD analysis, Checkland & Poulter (2006) explain the need for the PQR formula. Determining P with Q to help achieve R and how this PQR answers What, How, and Why. The preparation of PQR in this study includes no SOP related to the integration of SPI portal governance with KPI assessors' HRMS in a digital system (P), making SOPs for the integration of internal audit digital governance (SPI Portal) with digital-based SPI assessments (Q), and providing digital-based monitored performance assessments (KPI) (R).

Resilient Quotient (RQ) in this problem is how the Standard Operating Procedure (SOP) provides rules for the performance of employees, both auditors and auditees, and can be monitored digitally as a form of implementation of Human Technology Innovation Resources RD at this stage is that the procedures owned by BKI do not yet exist regarding team member performance rules measurable digital-based and can be monitored as a form of implementation of technological innovation in internal audit and human capital. In summary, the Root Definition outlines the problem (lack of SOPs), the proposed solution (creating SOPs to measure the performance of internal audit and digital-based auditee units), and the rationale for this activity (implementing technological innovations in internal audit and human resources). In conducting the RD analysis, researchers also compiled CATWOE. CATWOE is an acronym for client, actors, transformation, worldview, owner, and environment, and it is used to identify important elements in solving problems (Checkland & Poulter, 2006). Attached is Table 1 regarding the CATWOE elements in this problem.

Table 1. CATWOE

CATWOE	SPI & HRMS Portal Integration
Customer (beneficiaries or consequences of the system or transformation process)	Internal Control Unit, Human Capital Management
Actor (people who perform the transformation process)	Internal Control Unit, Human Capital Management, Information Technology Division
Transformation (conversion of input to output)	From "not yet" to "there is" with the SOP of internal audit digital governance integration rules, with KPI assessments. Units and individuals are measurable and can be monitored through performance assessments, manifesting the implementation of Digital Innovation, in realizing good corporate governance.
World View (a perspective or way of seeing that makes transformation meaningful)	Formal law is used to formulate policies on performance appraisal of internal audit results that are measurable and can be monitored for performance, which is a form of implementation of digital innovation in internal audit and human resources, in realizing good corporate governance.
Owner (Responsible person/group who can stop the transformation)	Internal Control Unit
Environment (The environment outside the given system)	Human Capital Management, Information Technology Division

First, the consequences of the system Or transformation process in this problem are the Internal Audit Unit (SPI), Human Capital Management (HCM), and BKI. Second, the party that carries out the transformation process, or in this case, is preparing the SOP for digital governance integration, is the Internal Audit Unit (SPI), Human Capital Management, and the Information Technology Division. Third, there is the conversion from input to output in this transformation process, from 'not yet' to 'there' with the SOP rules of the internal audit digital governance Integration with KPI Unit and individual assessments that are measurable and can be monitored for performance assessment digital performance assessment which is a form of implementing Digital Innovation in in Realizing the Company's Good Governance.

Fourth, the perspective that makes transformation meaningful. In this case, it is a formal law in formulating policies on performance assessment of internal audit results that are measurable and can be monitored for performance, which is a manifestation of the implementation of Digital Innovation Internal Audit and Human Resources in realizing the Company's Good Governance. Fifth, the party responsible for stopping the transformation is the Internal Audit Unit (SPI). Sixth, the environment outside the given system. In this case, the BKI Human Capital Management and Information Technology Division. The transformation

process can affect these external factors, and their perspectives and interests must be considered. In summary, the Root Definition outlines the key components of a purposeful activity system, including the actors, transformation process, beneficiaries, legal framework, responsible entities, and external environment. The system aims to implement Innovation Internal Audit and Digital Governance Integration in Human Resources to set measurable performance standards for employees and digital monitoring, ultimately contributing to Corporate Good Governance. Conceptual models for the system. This conceptual model outlines the creation and implementation of an SOP for integrating internal audit digital governance with KPI assessment. The SOP in this case is used so that the steps or decisions that have been made are Stage Three: Implement. Conceptual models for the system. This conceptual model outlines the creation and implementation of an SOP for integrating internal audit digital governance with KPI assessment. The SOP in this case is used so that the steps or decisions that have been taken can run effectively and efficiently. The conceptual model of the SOP for integrating internal audit digital governance with KPI assessment is shown in Figure 3.

The initiator in preparing this SOP was the Head of the Internal Unit (SPI) Audit for integrating internal audit digital governance with digital-based KPI assessment. Who formed a team to develop an SOP? This is a system to conduct literature reviews and theoretical studies. The team reviewed relevant literature and theories comprehensively, including (a) evaluation of the quality manual and internal control. (b) Study of the SOP for digitizing the SPI Portal & HRMS and (c) Investigation of the Standardization of the Appraisal System Employee Performance (KPI). After the drafting of changes to the Quality Manual, the team continued drafting changes to the Quality Manual the internal control by incorporating Employee Appraisal System SOPdigital-based This includes (a) formulating changes to the Quality Manualinternal control (b) defining quality procedures related to the Employee Appraisal System, (c) creating work instructions related to the Appraisal SystemEmployee, and (d) setting performance assessment targets for the development of the Manual, SOPs, and instructionsEmployee. Appraisal System Work Final Review of SOP: The team reviews the SOP to integrate internal audit digital governance with KPI assessment to ensure accuracy and completeness. Submission to the Strategic Management Division: The Head of the Department submits the Internal Audit of the Employee Appraisal System SOP for evaluation and approval to the Strategic Management Division. Signing and Approval, the Head of Internal Audit, Human Capital Management, and the Strategic Management Division sign and approve the Employee Appraisal System SOP. Publication, the approved Employee Appraisal System SOP is published on the BKI's One Gate System applications, so relevant stakeholders can access it. This conceptual model illustrates the sequential steps involved in developing and implementing an SOP internal audit digital governance integration for the Employee Appraisal System, emphasizing the importance of the research, review, and approval process before publication for wider use within the organization.

3.2.2. Comparison of the model and the real world

At this stage, the conceptual model created will be compared with the situation in the real world. In this case, asking further questions about the existing situation is necessary to get input on the conceptual model (Checkland, 2000). The comparison of conceptual models with the real world can be seen in Appendix 2. In preparing the SOP for integrating digital governance of internal audit for performance assessment as a derivative of the Memorandum of the Office of the Board of Directors related to accelerating the completion of unit performance reports or individual performance. SOP refinement is carried out in detail, including the assignment's purpose, the basis or reason for the assignment, the final target of the assignment, the personnel and work units involved, and the target and completion time. After comparing the conceptual model with the real world, from the formulation of SOP additions and procedures to the formulation of work instructions, a digital-based approach was formed for the Internal Audit Digital Governance Integration team member performance appraisal SOP. The SOP was also formed to increase speed, transparency, and fairness among employees to achieve good governance. With the implementation of the SOP formulation regarding the integration of internal audit digital governance for digital KPI assessment, the implementation can produce output in the form of improving team member welfare with the suitability of its performance assessment (KPI).
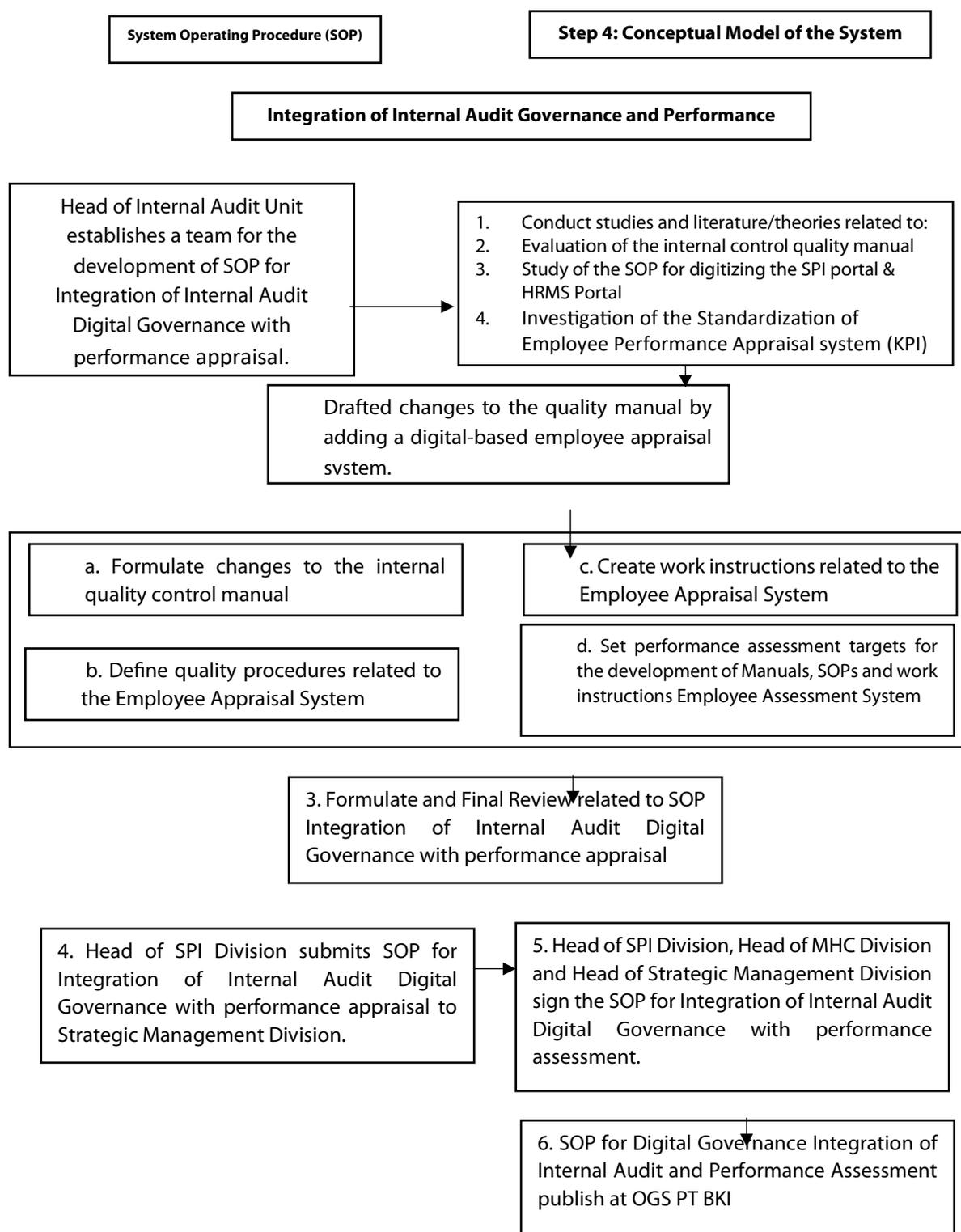
Figure 3. Conceptual Model of System

3.3.   Stage Four: Measure Stage

Systematically desirable and culturally, Checkland (2000) explains that a change must meet two criteria: desirable in principle and feasible to implement. To deal with a change, a well-planned and well-organized management is needed. With mature and planned management, it will help solve problems that

may occur during a change so that later, the change can help improve performance and have a long-term effect (Calder, 2013). In this problem, the SOP for integrating internal audit digital governance with performance appraisal requires several recommendations, namely the need to change the system performance appraisal from manual to systemized or digitalized. Changes to the system are expected to help increase team member productivity by allowing them to see their performance appraisals in real time. The problem is that the performance appraisal (KPI) appears at the end of the semester or the end of the year because this condition requires technological innovation that can fulfill the principle of fairness and transparency between units and between employees. That way, it is hoped that principles can be realized in good governance within PT BKI (Persero).

3.4.   Take/action to improve the problem situation.

This stage is the last in the SSM method, so it is expected to produce the right solution and can be implemented in the real world (Checkland, 2000). Based on the principle of fairness and the principle of transparency that are to be applied, all the problems of managing team member performance (KPI) manually, where appraisals are formed by adopting technology through the realization of the application, occur in the company SPI Portal Integration and HRMS performance appraisal. All employees can access the data information services available in the HRMS Portal. All employees can access them and can be accessed from anywhere, so it is hoped that the innovation of digital governance integration of the SPI Portal and HRMS Portal can uphold the principles of fairness, transparency, accountability, and the realization of good governance in the corporate environment. Based on the results of an interview with one of the informants from the Business Control sub-section, he explained that through the applications SPI Portal and HRMS Portal, complete data audit findings and inspection findings reports related to performance data and team member personal information can be seen easily and can be accessed at any time. Furthermore, based on the results of the interview by the Administration sub-section, he also explained that the existence of this application is beneficial for companies if they want to collect supporting documents for their performance assessment. That way, when making semester and annual reports related to team member performance appraisal, employees can do it quickly and in an organized manner.

IV.   Conclusion

This study describes the impact of technological developments in management PT BKI's human resources to address issues that have arisen in internal audit and connection with changes in the system, the digital-based performance appraisal, especially within the scope of internal audit, and the lack of SOPs governing the integration of internal audit digital governance with team member performance appraisals. Based on analysis using the Soft Systems Methodology (SSM) approach, it can be concluded that technological developments, especially the use of applications, internal audit, and the HRMS Portal, have great potential to increase transparency, fairness, and efficiency in HR management at PT BKI (Persero). Changing the performance appraisal system from manual to digital is a positive step to improve team member performance. However, it needs to be accompanied by policies that can minimize the gap in team member welfare. Then, the lack of SOPs governing team member performance within the scope of internal audit is a significant issue that needs to be addressed. Developing SOPs that digitally measure and monitor team member performance is necessary to improve good corporate governance. Planned and structured management is essential in the face of change, especially in technology adoption. Using the SSM approach helps design the right solution and ensure that the changes meet the principles of fairness and team member welfare through the collaboration of the SPI portal and HRMS Portal. It is hoped that this combination of applications can help companies achieve their goals of implementing good corporate governance.

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