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INTERNAL AUDIT MODEL POST-ERP IMPLEMENTATION (ENTERPRISE RESOURCE PLANNING) AT PT XYZ

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Abstract: *The research aims to compare the audit process carried out after ERP implementation with the audit model using the 2019 COBIT framework in the Monitor, Evaluate and Assess domain. It is evaluating the effectiveness of the audit using COBIT 2019 compared to the audit currently being conducted at PT XYZ. This research is applied research, using a case study method and a qualitative approach. The object of this research is PT XYZ, a company distributing pipe and pump products. 2017 PT XYZ implemented an ERP system to replace the previous program. Data analysis with the steps applied compared to the current audit process carried out at PT XYZ with the 2019 COBIT-based audit using the Monitor, Evaluate, and Assess (MEA) approach and evaluated the effectiveness of the audit model using COBIT 2019, which can ensure that audit objectives in the ERP system can be achieved effectively. The result of the research shows that there are differences in the audit process that PT has carried out. XYZ after implementing ERP with an audit model using the COBIT 2019 framework. This difference can be affected by the time of system implementation. The audits using COBIT 2019 can be considered very effective compared to the previous audits conducted by PT XYZ. By using COBIT 2019, it can help PT XYZ in designing governance using several design factors that have been provided.*

Keywords: *Monitor, Evaluate, and Assess (MEA), Enterprise Resource Planning (ERP), COBIT 2019*

INTRODUCTION

ERP is an enterprise-wide integrated information system that manages and coordinates a shared data repository's resources, information, and business functions. ERP is used to integrate all company information into a database that allows this information to be retrieved by various parties within the company with different organizational positions, starting from employees, management, and the head of the organization or company so that the goals of the organization can be realized (Wasilah, 2022) ERP emerged as a result of technological developments. Every single day, technology always develops and continues to be more advanced. As a result, all sectors adapt to technological developments to survive fierce competition. It is also done by commercial companies that use technology in their business processes to increase the efficiency and effectiveness of their operational activities. One of the ways that companies apply to keep up with the development of technology is by adopting an ERP system.

Companies nowadays are competing to implement sophisticated systems to increase their competitive advantage. ERP can bring changes to the company's business processes. With an integrated system, business processes become more systematic, so the company is expected to save time, costs, and effort (Mouritsen, 2005).

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The transition from the previous company's business processes that were carried out manually to system-based processes gives some changes. One of the impacts of changing to the ERP system-based business processes is the audit process. ERP also gives changes to the audit process. The audit must adjust the system that has been changed to give out a result suitable for the conditions of the company so that the results of irregularities in the audit can be used to improve the company appropriately.

The audit process for a system-based company will certainly be different than that for a company that has not implemented the system (Madani, 2000). Therefore, auditors are also required to master technologies to do the audit for companies that are no longer doing business processes manually. Changes in business processes using an ERP system certainly, require an audit process that also can adapt to these changes.

PT XYZ also experiences it, which has changed its business processes to the ERP system based so that it impacts the audit process following these changes. PT XYZ is a piping, sanitary, pumps, and various plumbing products distribution company located at the Bumi Maspion Romokalisasi Warehousing Complex, Surabaya. The products marketed are PVC pipes, iron pipes, PVC and iron pipe fittings or connections, water pumps, and other sanitary accessories. PT XYZ's customers build material stores and contractors in East Java Province and parts of eastern Indonesia. The TTS sales system is divided into "order-taking" and canvas, carried out by sales. In addition to sales orders, they also must bill customers. The company has implemented an ERP (Enterprise Resource Planning) system using the ODOO / Open ERP system since 2017 to support the development and progress. This system is implemented for sales, purchase, inventory, fleet, and accounting modules. ERP implementation changes the company's business processes, system changes, and digital data generated. By implementing an ERP system in an organization, it will integrate the system, which results in: changes made to one module will automatically affect other related modules, and data will be updated directly when the user inputs them into the system; this is known as "real-time processing," system integration occurs because it uses data from the same source, data transparency, all users who have access to the system will be able to see all available information whenever needed, from other users who input the data.

According to Indrajit (Indrajit, 2016), information technology in companies has a fundamental role that will affect the plan and design of the company's organizational structure, departments, divisions, or units related to information systems, information technology, and information management, namely: the operational function will make the organizational structure more streamlined and far from bureaucratic because some strict and regular administrative aspects have been taken over by information technology. Due to its application that spreads throughout organizational functions, the unit related to information technology management will function as a "supporting agency" where information technology is considered a "firm infrastructure."The supervisory and control function implies that the existence of information technology will be an integral part of activities at the managerial level, embedded in every Manager's function so that the organizational structure of the unit associated with it must be able to have a "span of control" or "peer relationship." which allows for effective interaction with managers in the related companies. Planning and decision-making function brings information technology to a more strategic role because of its existence as an enabler of the company's business plan. It is a "knowledge generator" for company leaders who face the reality of making several important decisions daily. Ultimately, because of this strategic function, The company decides to place the information technology unit as part of the corporate planning and development function. The Communication Function is included in the "firm infrastructure" in the modern organizational era, where information technology is positioned as a means or medium for individual companies to communicate, collaborate, cooperate, and interact. The information technology unit will place itself as a support of the company's daily activities. The Interorganizational function is unique because it is triggered by globalization, which forces companies to collaborate or form partnerships with other companies. The concept of strategic partnerships or information technology-based partnerships, such as the implementation of Supply Chain Management or ERP, made companies make several important breakthroughs in designing organizational structures or information technology units.

Information technology has a very important role in a company or business organization, so every company competes to use technology in its business processes, one of which is through ERP implementation. ERP is expected to make it easier for companies to input and store data, also in monitoring and evaluation. But ERP implementation can also bring changes in business processes. PT XYZ has a mission to apply the best, standardized, and sustainable management system, so it has started implementing the ERP-based Odoo 9 program for its business activities since 2017. In 2021, this program evolved from Odoo 9 to Odoo 14 to meet enterprise needs.

Changes in the company's business processes that implement the ERP program should be followed by changes in monitoring and evaluating company processes and performance. According to (Madani, 2000), the internal audit function should be re-engineered for ERP-based organizations. Internal auditors evolved from supervisors to facilitators ensuring the organization achieves its mission and goals. Currently, PT XYZ's audit function must also be re-engineered to achieve the company's goal of implementing an ERP system. Before using the ERP system, PT XYZ had an internal auditor to inspect the company's operational activities. In addition to carrying out operational audits, compliance, and financial statements audits are also done. After ERP implementation, information system audits are expected to be carried out. Changes in business processes that are not followed by changes to the audit process are feared to cause new problems. The auditor may be unable to find weaknesses or fraud in the system. Therefore, it is necessary to start an IS-IT audit for the audit process to achieve its objectives.

Companies implementing ERP must have internal and external control to ensure that reports and decisions received and produced by management are honest and high-integrity decisions based on the results of the information technology-based system audit process (WELHA, 2015). For companies that already use ERP, good governance is needed for information technology because the information technology function is not only a support for the company's system but has become an important part of the company. The performance of the IT division already needs to be measured so that it is in line with the company's strategic goals. Therefore we need a tool to evaluate information technology governance in a company, one of which is COBIT (Control Objective for Information Technologies).

COBIT is a standard guide to information technology management practices issued by the IT Governance Institute, part of ISACA. The IS governance audit standard used in this study is COBIT 2019. COBIT 2019 is a comprehensive information technology governance framework to assist companies in achieving goals through increasing quality and value, also simplifying the implementation of an organization's process flow from the point of view of implementing information technology. COBIT 2019 is used in this research because it is considered to be able to solve system governance problems. COBIT 2019 is an updated version of the previous COBIT framework that brings together commonly accepted ways of thinking, principles, practices, and analytical tools in corporate IT engineering and governance to increase the value of information. This research uses the Monitor, Evaluate, and Assess (MEA) domain in the 2019 COBIT framework to identify the current information technology supervision process and improvement strategies that PT XYZ can implement to become better. The MEA domains used in this study are the MEA 01 domain (monitor, evaluate and assess performance and conformity) and MEA 02 (monitor, evaluate, and assess internal control systems). Meanwhile, this study does not use MEA 03 (monitor, evaluate and assess compliance with external requirements).

The MEA domain focuses on the management area and monitoring process of how IT is managed in an organization to ensure design and control comply with regulations, as well as monitoring independent assessments related to the effectiveness of IT systems. Therefore, the MEA domain in the 2019 COBIT framework is suitable for this research because it can assess the current internal conditions from the monitor, evaluate and assess (MEA) process at PT XYZ. Based on the research background, the research questions to be discussed in this study are as follows: What is the comparison of the audit process carried out? After ERP implementation with an audit model using the COBIT 2019 framework in the Monitor, Evaluate, and Assess domain, PT XYZ? How is the effectiveness of the audit using the COBIT 2019 approach compared to the audit currently being carried out at PT XYZ?

THEORETICAL FRAMEWORK

This research was conducted at PT XYZ has implemented ERP for four years. The researcher wants to compare the audit process carried out after ERP implementation with the audit model using the COBIT 2019 framework. This research was conducted to analyze the differences or gaps (strengths and weaknesses) between audits that have been carried out using the audit model using the COBIT 2019 framework. Researchers can develop an audit model to ensure that the ERP system's audit objectives can be achieved. The framework for this research can be seen in the table below.
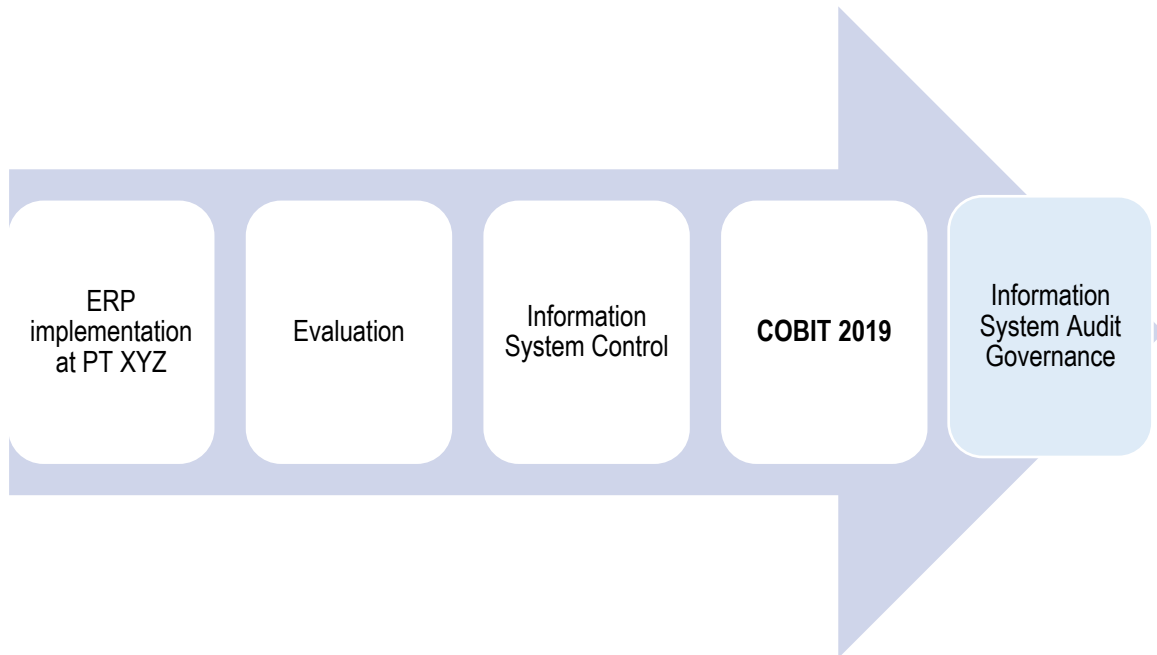
Figure 1. Framework

Figure 1 shows a brief overview of the research framework starting from ERP Implementation at PT XYZ, then evaluating the implementation results so that it is necessary to control the ERP Implementation system at PT XYZ. It is choosing COBIT 2019 as a tool for information system control.

In this case study, the researchers focused on evaluating and assessing organizational performance after implementing the ERP system at PT XYZ, so the MEA (Monitor, Evaluate, and Assess) domain was chosen, including monitoring organizational performance and internal parties. To assess the internal control system, the relevant MEA 01 (Managed Performance and Conformance Monitoring) and MEA 02 (Managed System of Internal Control) domains were selected to assess the performance of organizations that have implemented ERP.

The domain can be described as follows: MEA 01, which is monitoring, evaluating, and assessing performance and conformity, which is explained in 5 base practices: MEA 01.01 that is establishing a monitoring approach, MEA 01.02 that is setting performance and suitability targets, MEA 01.03 that is collecting and processing data and performance accordingly, MEA 01.04 that is analyzing and reporting performance, MEA 01.05 that is ensuring the implementation of corrective actions.

MEA 02 that is monitoring, evaluates, and assesses the internal control system explained in 7 (seven) base practices: MEA 02.01 that is monitoring internal control, MEA 02.02 that is a review of the effectiveness of business process controls, MEA 02.03 that is control self-assessments, MEA 02.04 that is identifying and reporting control deficiencies, MEA 02.05 that is ensuring independent and qualified assurance providers, MEA 02.06 that is planning guarantee initiatives, MEA 02.07 that is scope assurance initiative. And MEA 02.08 is carrying out network initiatives.

RESEARCH METHODS
Types of Research

This research is applied research, using a case study method and a qualitative approach. Applied research is a systematic and objective process of collecting, recording, and analyzing data to assist in making business decisions. Applied research is usually used by companies, agencies, or individuals that aim to solve a current problem faced by society or industrial/business organizations (Williamson, 2002).

Object of Research

The object of research is PT XYZ. PT XYZ is a company that distributes pipe and pump products. PT XYZ is divided into departments or business units: purchasing, sales, inventory, accounting, and fleet. 2017 PT XYZ implemented an ERP system to replace the previous program.

Research Participant

This research is qualitative; the participants refer to the respondents or interviewees. Participants indicated that the most active role was in the individuals studied. Participants in this research were: IT Supervisor who knows how IT governance has been implemented so far and the impact of ERP implementation on companies, Accounting Head who know and feel changes in company financial reporting before and after implementing ERP, CEOs who know the role of information technology in decision making in companies as well as the internal audit team who know how the audit process has been carried out by the company so far, how changes have occurred after ERP implementation and what are the strengths and weaknesses of the current audit system.

Data Collection Method

Data collection in this research consists of observation; the researcher conducted observations of business and audit processes at PT XYZ. Therefore, it is expected that the researcher could find out how the company's operational activities ran, how the audit procedures were carried out, what obstacles were being faced, and others.

Documentation: the researcher collected important documents that could be used for analysis in this research, for example, organizational structure, job desks, audit plans (audit plan), financial reports, and reports. Interviews were triangulated through interviews with the PIC who understand ERP implementation and are the highest decision-makers and implementers in the field to test the credibility of the data.

The interviews were conducted in the form of semi-structured interviews, which could be developed according to the circumstances in the interview process with the respondents. This interview aims to determine the problem so the informant can express his opinion.

The informants in this study are the parties involved in the implementation, users of the data generated by the ERP program, i.e., IT Supervisors represented by Mr. Faisal Fanani, Accounting Head, namely Mrs. Siti Patimah and the Audit Manager, namely Mr. Arfin and CEO of PT XYZ, namely Mrs. Catur. The overview of the questions that will be asked in the interview can be described as follows: What is the audit process that PT XYZ has carried out after the ERP implementation? What are the advantages of the audit carried out so far? What are the weaknesses of the audit that has been carried out? Can the current audit model ensure that the ERP system's audit objectives can be achieved effectively? What is the audit model expected by PT XYZ which can support the company's effectiveness?

Data Analysis Methods

The steps in this research are as follows: comparing the current audit process carried out at PT XYZ with the 2019 COBIT-based audit using the Monitor, Evaluate, and Assess (MEA) approach. The steps are as follows: Current audit of PT XYZ assessed the implementation of information system - information technology governance at PT XYZ, with an audit model using the 2019 COBIT framework, studied the overview of PT XYZ, determined the scope of the assessment, collected the data, mapped the COBIT 2019 process based on research objects, measured capability levels, evaluated the effectiveness of the audit model using COBIT 2019 which can ensure audit objectives in the ERP system can be achieved effectively.

RESULTS AND DISCUSSION
The comparison of the audit process after implementing ERP with an audit model using the COBIT 2019 framework.

Based on these results shows that there are differences in the audit process that has been carried out by PT XYZ before and after implementing ERP. This difference can be affected by the data retrieval rate and the integrated system. PT XYZ felt closing time or books each month is faster after implementing the ERP system. In addition, the company experienced a time reduction in processing transactions, improving the quality of financial reports, presenting financial reports, and improving the decision-making process. PT XYZ experienced a technical impact in the form of a faster monthly closing time after implementing the ERP system. ERP systems can help track a company's income and expenses quickly. PT XYZ has been using an ERP-based system for 5 (five) years, so good governance is needed for information technology because the function of information technology is not only to support the company's systems but has become an important part of the company. The performance of IT needs to be measured so that it is suitable for the company's strategic goals.

Therefore, we need a tool that can be used to evaluate information technology governance in a company, which is COBIT (Control Objective for Information Technologies). COBIT is a standard guide to information

technology management practices issued by the IT Governance Institute, which is a part of ISACA. IS governance audit standards at PT XYZ used in this research is COBIT 2019. COBIT 2019 is a comprehensive information technology governance framework to assist companies in achieving goals through increasing quality and value, also simplifying the implementation of an organization's process in terms of the application of information technology. COBIT 2019 is used in this research because it is considered to be able to solve system governance problems. COBIT 2019 is an updated version of the previous COBIT framework that brings together commonly accepted ways of thinking, principles, practices, and analytical tools in enterprise IT governance and engineering to increase the value of information.

This research used the Monitor, Evaluate, and Assess (MEA) domain in the 2019 COBIT framework to describe the current information technology supervision process and improvement strategies that XYZ can implement to improve it. The MEA domains used in this study are the MEA 01 domain (monitoring performance and compliance with governance) and MEA 02 (managing the internal control system).

From the results of observing and assessing the performance of PT XYZ using the COBIT 2019 framework with the MEA01 (Managed Performance and Conformance Monitoring) domain, including MEA01.01 (Determining a monitoring approach) it can be described that stakeholders can monitor the performance of managers using the LCP (Point Control Sheet), while managers can monitor the performance of the sales team by using the LTS (Sales Target Sheet), managers to the Finance Accounting and Tax team by looking at the financial reports, while staff performance can be monitored on the daily work target menu through the dashboard of each user. Implementation of MEA 01.02 (Setting performance and suitability targets) found that LCP targets will be given by stakeholders to managers every November as work targets for the next year, while sales targets are given monthly. Implementation of MEA 01.03 (Collecting and processing performance data to be measurable) For its implementation, it can be seen that LCP data will be made after monthly closing by each Manager. Sales performance target data will be taken weekly. Meanwhile, targets for each staff will be taken daily, weekly, and monthly and analyzed by their respective supervisors, respectively. MEA 01.04 (Analyzing and reporting performance) for its implementation can be seen from management performance which will be seen from the LCP results and reviewed by stakeholders monthly. The results will be appreciated quarterly, while sales performance is analyzed every week and appreciated monthly and semi-annually. The implementation of MEA 01.05 (Ensuring the implementation of corrective actions) can be seen from the target correction in the following quarter or semester if the previous target has not been reached, so it is hoped that the annual target can still be pursued.

While the implementation of MEA 02 (Managed System of Internal Control) in PT XYZ's assessment, its application is described in the MEA 02.01 domain (Monitor internal control), where the implementation is PT XYZ's internal audit controls operational and financial reports while the head accounting checks the system running in real-time, field audits also check sales and customer performance in the field. Implementation of MEA 02.02 (Reviewing the effectiveness of business process controls) is that audit work targets are determined for the next 1 (one) year based on a review of performance and findings in the previous year based on a review of performance and findings in the previous year. As for controls carried out daily, the accounting will be reviewed monthly. The implementation of MEA 02.03 (Conducting self-assessment control) can be seen from the standard operating procedure audit, accounting, or other sections that find errors in the system. Then they will submit a request to make a correction or check the system to the Digital Transforms department to check and correct or repair the system. While the implementation of MEA 02.04 (Identify and report control deficiencies), its implementation can be seen that the internal audit will report the audit results and provide suggestions for improvement to the team, and from the review of the audit findings, PT XYZ will make corrections and improvements to these findings.

The results regarding the current audit process at PT XYZ are that the audit process carried out is a financial and operational audit. There are differences in the audit process before and after implementing ERP. The company has not specifically conducted an IS-IT audit process, even though PT XYZ has implemented an ERP system for five years. PT XYZ is preparing management and standardization of SOP (System Operational Procedure) and SAP (System Accounting Procedure) in advance to facilitate audit performance. PT XYZ has not conducted IS/IT audits with the 2019 COBIT framework.

Audit Effectiveness Using COBIT 2019

With technological developments from time to time, ISACA has released several versions of COBIT. The latest version of COBIT is the evolution from the previous COBIT 2019. COBIT 2019 was released by adding the latest development that can affect information and technology in an organization. COBIT 2019 is a framework that provides globally accepted principles, practices, tools, and models to increase the trust and value of Enterprise IT.

In general, the audit using COBIT 2019 is very effective, which can be seen from: Organizational Flexibility and Agility ERP systems using COBIT 2019 break down the functional boundaries of business processes, information systems, and resources so that companies become more flexible, responsive, and adaptive, this can be seen from the existence of control from stakeholders to staff, which is shown from the results of the assessment on MEA 01. Companies can respond quickly to changes in business conditions and find new business opportunities. Decision Support: The ERP system that uses COBIT 2019 provides important cross-functional information; with control of the system's audit, information is obtained faster, thereby increasing the ability of managers to make better and faster decisions, as shown in the detailed MEA 02 assessment. Quality and Efficiency ERP systems that use COBIT 2019 integrate and improve company business processes, as well as make significant quality improvements in production, distribution, and customer service processes

This information enhances managers' ability to make better and faster decisions. Quality and Efficiency in ERP system using COBIT 2019 integrates and improves company business processes and also makes significant quality improvements in production, distribution, and customer service processes.

CONCLUSION
Conclusion

Based on the results of research on COBIT 2019 using the MEA 01 and MEA 02 domains at PT XYZ, it can be concluded that: Comparison of the audit process currently carried out by PT XYZ with the audit model using the COBIT 2019 framework, namely the current audit process after using the ERP system is an audit financial and operational audits. Information System Audit has not been carried out with planning; however, if there are findings related to the system when checking the system, improvements will be made to the running system. There is a difference in the audit process that PT XYZ has been carrying out so far after implementing ERP with an audit model using the COBIT 2019 framework. The audit process with the COBIT 2019 framework complements the audit process that was carried out previously. For companies that already use technology-based ERP systems, tools are needed to conduct an Information System audit to analyze how much the technology used is appropriate and supports the company's strategy. The observations and interviews show that PT XYZ has not conducted an IS/IT audit after implementing ERP. COBIT 2019 with the MEA01 and 02 domains was assessed as a control for the business processes carried out at PT XYZ. The effectiveness of an audit using COBIT 2019 is very effective because it can provide an overview of the condition of the Information System within the company.

From the results of the 2019 COBIT assessment of PT XYZ, the capability level for MEA 01 was 73%, and the capability level for MEA 02 was 63%, which means that the process carried out by PT XYZ has reached a Largely Achieved (L) rating. There is already evidence of a systematic approach, significant achievements, and well-defined attributes at this level. Conducting an assessment using the COBIT 2019 framework can provide recommendations to companies in managing IT governance and provide business flexibility to create practical governance solutions tailored to organizational goals and objectives. Using COBIT 2019 helps PT XYZ design a governance system using several design factors that have been provided.

This research aligns with Widayanto's research in 2019 concerning the Evaluation of Information Technology Management using the COBIT 5 Framework with the MEA domain at PT. PLN, where the MEA domain was chosen because it focuses on performance management assessment, monitoring, and internal control.

Suggestion

Based on the research results on the ERP system using COBIT 2019 at PT XYZ, the suggestions that can be put forward are as follows: The optimization of the ERP system using the COBIT 2019 framework at PT XYZ still needs to be enhanced. It is indicated by the internal control assessment and guarantees that are still partially achieved, achieving 15 - 50%. Thereby, the Capability Model process is still at level 1 (Performed), which is still being implemented to achieve its business goals, so there is still a long way to go to optimize it. Determine policies in the form of procedural processes for management using the COBIT 2019 framework because previously, the COBIT 2019 framework system was still disconnected from each other so that it could be connected in the future. Human errors often occur In the 2019 COBIT framework system, resulting in incorrect data input, which automatically leads to incorrect reports. HR causes these problems. Therefore, one of them is preparing HR skills so that it can reduce company losses.

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