The System Design for Internship Administration and Pocket Money at PT Pertamina Geothermal Energy

Yayang Novealita Wahono Putri 1,
Nur Indah Riwajanti 2*,
Nurafni Eltivia 3

1,2,3 Department of Accounting, State Polytechnic of Malang, Malang, Indonesia

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Research Aims: This research aims to design an adequate administration and pocket money internship management system at PT Pertamina Geothermal Energy (PGE). Improvisation will be carried out to prevent human error and increase processing speed of internship’s pocket money system.

Design/methodology/approach: This research is classified as applied research and was carried out using a Business Process Improvement approach. The procedures includes need analysis, planning & design, development, and conclusion. The method used to collect data is by interviewing the Human Capital as the user. Secondary documents and activity forms are obtained through documentation.

Research Findings: The system design based on the concept of Business Process Modelling Notation (BPMN) using Bizagi Modeler. Validation tests by material expert and IT expert are carried out to ensure that the designs has a certain quality and relevant. The design evaluation system is carried out by involving the Human Capital and Developer Consultant. The level of efficiency can be achieved if the business process model has been designed adequately and can reduce delays in payment.

Theoretical Contribution/Originality: This research confirms that the problem solved is limited to system design. To obtain results implementation in the problem solving process at PGE, further research will needed to discuss the system design in advanced

Keywords: administration, BPMN, process business, internship, pocket money

Introduction

The big challenge for the academic world is to synchronize them with the needs of the industrial world. The Merdeka Campus higher education curriculum opens opportunities for students and fresh graduates to absorb as much experience as possible through an industrial internship scheme. This scheme implements Minister of Education and Culture Regulation Number 3 of 2020 regarding National Higher Education Standards to establish standardized practices in higher education institutions. The State-Owned Enterprise (BUMN) Group allows potential candidates to enter their business processes through the Talented Generation Internship program (MAGENTA BUMN). 378.271 students have registered and have
MAGENTA BUMN accounts, and 149,969 students have registered for internships at MAGENTA BUMN. Based on the relatively high number of participants, as many as 4,850 students were accepted as active apprentices. The MAGENTA BUMN website system is a system that applies simultaneously to all BUMN Groups, including the Pertamina Group. The BUMN MAGENTA system provides facilities for prospective apprentices (apprentices) to register and access graduation and internship announcements. However, this system only facilitates intern activities when they are accepted and enter the target company.

PT Pertamina Geothermal Energy Tbk (PGE) is a sub-holding of PT Pertamina Power Indonesia (PPI), one of the companies that open opportunities for industrial internship applicants. In 2021-2023, at least, it has opened more than 2 (two) internship recruitment batches per year. The entire internship procurement business process will ultimately be the responsibility of the Human Capital Function; with the existence of this business process in the Human Capital (HC) Function of PT Pertamina Geothermal Energy Tbk, a new need arises, namely administration and internship (pocket money). The MAGENTA BUMN website system cannot generate internal data that can be used for initial salary data for internship participants. The Human Capital Function has to manually recapitulate data, starting from completing personal profiles for each intern to recapitulating the Daily Timesheet, which is used as a basis for calculating pocket money before it is submitted to the Procurement Shared Service Center (SSC) Function of PT Pertamina (Persero).

Based on these conditions, this research focuses on fulfilling the needs of the Human Capital Function by designing a system that can manage internship administration and pocket money. The system is expected to accommodate budget calculations and actual expenditure in the form of payments/internship pocket money as a form of monitoring to the PT Pertamina (Persero) Procurement Shared Service Center (SSC) team. It was hoped the system would automatically accommodate requests for internal procurement needs in each function. In this way, the Human Capital Function can increase time efficiency by automating business processes. This system is designed to involve several users, namely the manager or assistant manager who acts as a supervisor for each function where the intern is placed, the admin of the Human Capital (HC) function, and the intern himself. So, it is hoped that it will increase the speed of the internship’s pocket money processing. The Human Capital (HC) function can directly produce reports and present budgeting dashboards and internship pocket money realization to meet internship procurement needs.

Previous studies in the pocket money Accounting Information Systems (AIS) field were designed to prepare simple website-based financial reports (Djauhary, et al., 2022; Novando, 2022). The payroll accounting information system switched from a manual recording system to Ms. Excel and became a website-based automation field (Mumlah & Nurdiawan, 2023). Similar research was also conducted by Field
Yuliyanti (2023), where the system design used the document components of time attendance cards, salary lists, and pocket money summaries, which could solve procedural problems. Apart from that, many payroll AIS applications are developed using a website basis because they are considered more efficient and can be accessed without installing on a PC/mobile phone (Mufawizah, 2023; Nadhiroh, 2023). Designing a payroll AIS is a necessity for management to produce efficiency in business processes that are carried out routinely. Apart from that, payroll AIS is also a system that can be used as a trigger to improve the internal control system field (Anugrah & Renaldhy, 2023; Meirini, 2023; Saputra, et al., 2023).

The urgency of the need for this system was emphasized directly by the relevant parties in the Human Capital (HC) Function through an official memo. By looking at the conditions related to many internship participants (>30 people), optimizing internship management through an internet-based system is necessary. This is done so that internship management can run well, orderly, and accountable. The scope of implementation and evaluation of the system will be used by PGE and, in the future, can be adopted by Pertamina Group according to needs.

Similar research on payroll AIS can be used to update the system, reducing things that hinder the payroll process, increasing accuracy, and reducing the risk of human error and fraud (Mufawizah, 2023; Yuliyanti, 2023). Other research emphasizes the importance of Human Resources (HR) in achieving organizational goals, so HR management is deemed necessary to receive attention. Financial technology-based SIA payroll is essential to design as a form of appreciation for worker dedication and triggering high productivity (Nadhiroh, 2023; Saputra, et al., 2023). Payroll SIA is designed to solve the problem of a weak internal control system (Meirini, 2023). Disadvantages of the pocket money system include having multiple positions and a less than proportional organizational structure, which means that payroll AIS plays a vital role in preventing fraudulent acts such as paying salaries to fictitious employees (Anugrah & Renaldhy, 2023; Sugiarti, et al., 2023).

The PGE will use the scope of the implementation and evaluation system and, in the future, can be adopted by Pertamina Group according to needs. Based on the analysis of the urgency of need above, this research intends to develop a system design for an administration and pocket money management system at PT Pertamina Geothermal Energy Tbk.

**Literature Review**

An information system is a collection of data as input to be processed to produce output that can be interpreted (Romney & Steinbart, 2020). Using a flowchart design Field, the following techniques can represent information systems (Endaryati, 2021). The pocket money and wages Accounting Information System (AIS) is designed to accommodate the calculation and reporting of wages and
salaries to employees for services provided (Thahar, et al., 2022). The pocket money system is one of the SIAs that continues to change the batch form because employee salaries are paid or processed using a periodic system (Handayani & Kamilah, 2022).

Payroll AIS makes it possible to facilitate the closure of acts of fraud and the availability of more specific information when making decisions (Ayu & Suprihandari, 2022). Meanwhile, an internship is an industrial program for students that facilitates intern participants, in this case, called interns, to be able to know and be directly involved in an organization’s field’s business or business activities (Putri & Rozamuri, 2023). Concerning the internship programs that are opened transparently by these companies, the Human Capital function is a function that will provide provision and assistance before the intern participants are handed over to each unit that requests to procure internship workers (Alnachef & Alhajjar, 2017).

Based on the flowchart method, the identified business processes are represented as BPMN (Business Process Modelling Notation) (Fatah & Gunawan, 2022). Next, the flowchart is assembled into a graphical business model where processes and flows can describe the process sequence. This modeling can help analyze problems in business processes. In this case, the software is needed to define and model business processes, namely the Bizagi Modeler application (Bazan & Estevez, 2022). Previous research is presented to strengthen the theory and urgency of the study carried out in this research. Business Process Modelling and Notation (BPMN) is a tool used at the business process modeling stage for designing system processes using Data Flow Diagrams (DFD) while creating relationships between entities using Entity Relationship Diagrams Field. (Anggraeni, et al., 2023)

Business process modeling can be used to evaluate and improve business processes in the future. The complexity of business processes makes companies look for ways to describe business processes (Fathah & Santoso, 2023). BPMN aims to help business users manage their processes effectively through user-friendly notations, but it can present complex semantic processes in the field (Tampubolon & Situmorang, 2023). The results of this research created a stock inventory system using Business Process Modelling Notation (BPMN) and the addition of supporting features such as return features, orders, pricing of goods, and improvements to the current system (Devianto & Haerudin, 2023). Research carried out at the PT ABC generator sets (Genset) factory experienced problems with the production process, which needed fixing and chaos. The method used in this research is Business Process Modelling Notation (BPMN). The results of this research lie in the new installation process at the recommendation stage, and the processing speed is 3250 minutes for analysis of the recommended new business model design (Maulana, 2023).

Research Method

This research falls within the research and development (R&D) realm, specifically applied research, which involves creating and assessing products.
(Zuraini, 2023). Through this R&D research, it is hoped that we can produce a business process model that supports the needs of Pertamina Geothermal Energy's (PGE) Human Capital Function in managing internship administration and pocket money. This applied research was carried out using a Business Process Improvement approach. This method is focused on meeting user needs and satisfaction, which results in a continuous iterative process for improvement during the development of the business process model (Utami, 2023).

Furthermore, this business process model development approach focuses on documenting work processes, contracts, and planning flows. It also focuses on interaction and collaboration between analysts and users, mainly how they work together to meet business process design needs (Anggraeni, et al., 2023). In addition, this method focuses on how business process design can achieve user goals and satisfaction and how analysts can respond quickly to user needs. Overall, Business Process Improvement emphasizes interaction and collaboration between analysts and users (Mone, et al, 2023). These characteristics make it suitable for software development with short timeframes, relatively small teams (less than ten people), and a readiness to meet changing or additional user needs. Interaction and collaboration with users will continue to adapt the information system built to user needs, et al.(Ekasari, et al, 2023). The following are the development procedures or research stages carried out, including:

1. Need Analysis
   This stage analyzes user needs, which, in this case, are the needs of the PGE Human Capital Function. In this stage, primary data and secondary data will be analyzed. Primary data was obtained through Focus Group Discussions (FGD) and interviews with Human Capital to provide an understanding of the internship's pocket money system. Meanwhile, secondary data was obtained by conducting literature studies and documenting forms and policies related to the business process. This data is then compiled and identified to describe the internship's pocket money users require by the procedures applicable within Pertamina Geothermal Energy.

2. Planning and Design
   The Planning and Design stage was carried out to produce a business process model design for administration and pocket money internship using the Business Process Modeling Notation technique based on Business Process Management. Business Process Management refers to methods and techniques that support business process design, administration, configuration, and analysis (Arofah & Cahyadi, 2019). By applying Business Process Management techniques, this research can identify various activities that occur within the organization. This information can then be used for analysis and improvement in the field (Ekasari et al. (Ekasari, et al, 2023). Human resources generally carry out organizational activities by following established rules and procedures (Panduwinasari, et al., 2021).
3. Development

The third research stage is the business process model development stage. Human capital's function as a user is to provide suggestions for improvement and evaluation by applicable procedures and standards.

4. Conclusion

The final research stage is testing the business process model that has been designed. The Human Capital function can infer the level of functionality of the entire business process model. Material and IT experts will test the system design to obtain adequate confidence in the proposed business process model. Data collection methods in this research are divided into:

a. Interview

Researchers conducted interviews to collect data through needs analysis from the Human Capital Function of PT Pertamina Geothermal Energy Tbk.

b. Documentation

Researchers use documentation when collecting data in business process documents/forms.

c. Focus Group Discussion

The Focus Group Discussion (FGD) method was carried out by researchers when carrying out validity tests by experts. Data processing is carried out after the research data has been obtained adequately. The data processing methods used can be illustrated based on the following flowchart.

![Data Processing Method Flowchart]

Source: Data processed by the author, 2024.
Result And Discussion

The research object was PT Pertamina Geothermal Energy Tbk. This company operates in geothermal management to realize energy security in Indonesia based on New & Renewable Energy (NRE). PT Pertamina Geothermal Energy Tbk, from now on, often referred to by the abbreviation PGE, has been established since 2006 as a sub-holding of PT Pertamina (Persero). The existence of structural changes at PT Pertamina (Persero) means that PGE is now under the auspices of PT Pertamina Power Indonesia (PPI). The brief history and business expansion of PGE can be described as follows. In 1974, Pertamina surveyed geothermal resources, and in 1983, the Kamojang Area PLTP Unit I was built, followed by the Sibayak Monoblok Area PLTP, which officially operated in 1996.

Furthermore, in 2001, the Lahendong Unit I PLTP, which had a capacity of 20 MW, began operating. PGE was officially founded in 2006 and continued with the development of PLTP Area Lahendong Unit II and PLTP Area Kamojang Unit IV, respectively, in 2007 and 2008. Meanwhile, in 2009 and 2011, PLTP Area Lahendong Unit III and Unit IV officially operated. Following this business expansion, in 2012, PGE Ulubelu Area Units I & II began operating with a total capacity of 50 MW. PGE Area Kamojang Unit V, with a capacity of 35 MW, also officially operated commercially in 2015, followed by the development of PLTP Lumut Balai Unit I in 2019. With so many operating areas, PT Pertamina Geothermal Energy provides internship opportunities to gain as much experience as possible. Based on these conditions, a management system design for many internships is a concern that needs to be designed immediately.

Business Process Modelling Notation (BPMN) serves as a standard for business processes, providing a graphical representation akin to traditional flowcharts (Utami, 2023). The BPMN 2.0 specifications offer execution semantics, diagram notation, and compatibility with other execution languages (Ismanto, et al., 2020). Process and task data processing can be done in two ways in BPMN: data objects and properties field (Pratama, et al., 2022). Based on the flowchart method, the identified business processes are represented as BPMN (Business Process Modelling Notation) (Fatah & Gunawan, 2022). Next, the flowchart is assembled into a graphical business model where processes and flows can describe the process sequence. This modeling can help analyze problems in business processes. In this case, the software is needed to define and model business processes, namely the Bizagi Modeler application (Bazan & Estevez, 2022).

Applied research is a concrete step in solving problems within the scope of the research object et al. (Ekasari, et al, 2023). This problem can then be analyzed by visualizing the Business Process Management framework. The results of the business analysis are carried out based on the data that has been collected and interviews conducted with Users, namely the Human Capital Function. The presentation of this
analysis is supported by statements given by informants as answers to the questions asked. Applied research is carried out as a concrete step in solving problems within the scope of the research object. This problem can be analyzed by visualizing the Business Process Management framework. Hopefully, this visual presentation can provide a clear and easy-to-understand picture. Analysis techniques are obtained through field observations, interviews, and documentation.

Current Business Process Modeling (as-is model)

The current business process analysis is that the internship recruitment process is carried out through two channels/mechanisms, namely through the BUMN Generation of Talented Internship program (MAGENTA), which can be accessed on the page https://magentaku.id/lowongan and independent e-recruitment on Pertamina's official website at page https://recruitment.pertamina.com/. The internship recruitment process through MAGENTA BUMN has several weaknesses, which can be described below.

The MAGENTA BUMN website cannot accommodate the monthly internship allowance payment history. This condition results in the need for more adequate transparency and accountability in the management and distribution of pocket money. The system cannot provide data regarding when and how much pocket money is received for internships. Thus, the menus on the MAGENTA BUMN website need to function optimally.

The independent internship recruitment process via the official Pertamina website has several weaknesses, which can be described as follows:

a. The Human Capital Function of the destination company cannot withdraw data entered by applicants.

Figure 2. Tracking Application Status on the MAGENTA BUMN Page
Like the MAGENTA BUMN website, the official Pertamina website also does not allow the Human Capital (HC) function to withdraw data. Thus, it requires HC to request data again from internship candidates who are declared accepted to undergo internships at the company concerned.

b. Does not support tracking of internship pocket money payments.

Based on the image above, it can be concluded that the MAGENTA BUMN website cannot accommodate the history of monthly internship pocket money payments. This condition results in inadequate transparency and accountability in the management and distribution of pocket money. The system cannot provide data regarding when and how much pocket money is received for internships. Thus, the menus on the MAGENTA BUMN website need to function optimally.

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b. It does not provide payment features for internship pocket money

Like MAGENTA BUMN, Pertamina's official e-recruitment website also does not provide payment features for internship pocket money or things that lead to processing documents required for internship pocket money.
Based on the results of the current business process analysis, a current business process (as-is) can be described, and a proposed (to-be) business process design can be presented.

The business process currently carried out by the Human Capital (HC) Function of PT Pertamina Geothermal Energy Tbk (PGE) is separate from the business process for recruiting apprentices. This is because the existing system cannot accommodate internship activities.

Figure 4. Pertamina e-Recruitment Official Website page
Source: Data processed by the author, 2024.

Figure 5. As-Is System Design
Source: Data processed by the author, 2024.
The points in the current administration and pocket money internship business processes include:

1. Internship participants create a Daily Timesheet manually based on the format determined by the Human Capital Function.
2. In this case, the function supervisor is a mentor (at least equivalent to Senior Analyst II) or Manager, signing the Daily Timesheet made by the internship participant.
3. Internship participants collect the Daily Timesheet, which has been wet-signed by the function supervisor by scanning the document and emailing it.
4. To calculate pocket money, the Human Capital function will then recapitulate the Daily Timesheet received internally.
5. The Human Capital function is to compile documents to fulfill the requirements for the disbursement of internship pocket money, which consists of:
   a. Document Cover Sheet
   b. Invoice Form
   c. Payment Approval Separator Sheet
   d. Payment Process Request Letter (SP3 Manual SSC)
   e. Pocket Money Calculation
   f. Timesheet and Daily Report
   g. Contract
   h. Saving book
   i. NPWP
   j. ID card
6. The Human Capital function manually sends documents fulfilling the requirements for disbursement of internship allowance to the Shared Service Center (SSC) via email.
7. Documents received by the Shared Service Center (SSC) are then validated and sent to the Directorate of Finance - Treasury Function to process bank transfer orders to the accounts of each internship participant.
8. Pocket money was received for each internship.

Pocket money is paid to each intern through the account number registered by the intern at the time of document collection. Current internship administration and pocket money business processes show that 11 out of 12 or 92% of workflows are done manually. This condition results in delays in pocket money received by interns. Based on actual events in the field, there is a discrepancy between the date of receipt of pocket money stated in the work contract. The following is evidence that illustrates that the internship allowance was paid late.
However, because many flows in the business process are carried out manually, there is a delay in the payment of pocket money to internships. In these conditions, it can be concluded that designing an administration system and internship pocket money at PT Pertamina Geothermal Energy needs to be carried out. This is stated in the Human Capital Function memorandum addressed to the IT Function regarding the request for server provision in connection with the system design.

Based on the as-is business process analysis of the current business process conditions, the following is a proposed design for the administration and pocket money internship business processes as a basis for system development. The proposed (to be) administration and pocket money business process design contains several development elements and suggestions for improvement, described below.

1. Interns must upload a work plan document once while participating in internship activities based on the time determined by the Human Capital Function. Every month, interns are required to report a list of activities in the form of a Daily Timesheet.

2. The Daily Timesheet that the intern has completed will then request approval from the Function Manager. After the document has been approved, a print icon will appear. In connection with the applicable procedures and provisions, the Daily Timesheet must be signed by the Function Manager and uploaded to the website.

3. The Human Capital function can generate the following documents automatically for pocket money payments with the following structure:

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Figure 6. To-Be System Design
Source: Data processed by the author, 2024.
4. The Human Capital function calculates pocket money for each person and each intern in a predetermined form.

5. The Human Capital Function sends the above documents to the Shared Service Center (SSC) Function.

6. The Shared Service Center (SSC) function sends money disbursement documents to the Treasury Function for internal payment.

7. The Treasury is an institution that pays internship allowances through Pertamina Geothermal Energy's partner banks.

8. Internship's pocket money has been received.

The main activity of designing a system aims to build, implement, and then analyze the progress of business functions expected to be achieved by utilizing an automated information system (Welc, 2022). In this research process, the system design analysis includes using model formulation tools to describe a system network in a functional process called a Business Process Modeling (Endaryati, 2022, p. 63). Using the Business Process Model method, the results of documentation of the current business process with the proposed business process become more professional and easy to understand. In line with ongoing research, the following is a discussion related to previous research. Designing a Business Process Model is crucial because a quality Business Process Model will produce an adequate system to close gaps or provide improvised services (Ekaputra et al., 2022; Rahayu & Hartikayanti, 2023; Yoga, 2017). This aligns with the validation test results, which state that the documentation presented describes the business process flow (actual, proposed, or expected). The as-is and to-be Business Process Models are designed by involving the Human Capital function as the primary user so that the details of the needs analysis are outlined carefully. Based on the best documentation of business processes, some implications will be supported by several research. Furthermore, this research aims to design an adequate system for the internship pocket money business process to optimize internship management. This is necessary to ensure that the internship administration and payroll processes run well, orderly, and accountable.
Users agree upon the current business process (as-is); in this case, the Human Capital Function can be improvised by designing proposed business processes. This is due to the limitations of current business processes, which still need to be better systemized, such as manually uploading and merging documents. The proposed Business Process Model (to-be) allows involved users to cross-check activities directly. This is because managers or supervisors can convey written messages regarding activity coordination and other needs to the human capital function in the proposed business process. Documentation of business processes is carried out to understand the current condition of business processes. In this way, it can be analyzed to obtain adequate conclusions regarding the problems a particular work unit or organization faces. Based on these observations, a proposed business process can be designed to solve current issues. The design of the current business process model (as-is) and the proposed business process model (to-be) based on Business Process Modeling Notation (BPMN) using Bizagi Modeler into one unit has been discussed. Based on the research findings above, this discussion can begin with the need to improve system design as an integral part of designing the internship and pocket money administration system within PT Pertamina Geothermal Energy Tbk. Through a centralized system design, this process can become more efficient because a database supports it. Apart from that, communication between the Function Manager and the Human Capital Function can run effectively and efficiently through the message feature available on the Manager's side as a user. Validation tests for media experts (information technology) and material experts have been carried out to maintain the quality of the system design. Based on the results of validation tests carried out with media experts (information technology) and material experts through Focus Group Discussions, the business process proposed above (to-be) is suitable for development with an assessment of 85%.

Conclusion
The study identifies the system improvement that requires a solution for the Human Capital of PT PGE regarding new business processes, namely the internship’s pocket money design system. Based on the needs analysis that has been carried out, the results obtained show that a design for an administration and pocket money internship system is needed. This research presents documentation of the current system (As-Is) and the proposed system design (To-Be) to ensure the system design is relevant and can answer needs. This research has a strong basis in determining the primary needs that must be resolved, namely how to design an appropriate system design as a basis for system design so that it can carry out business processes for more than 30 internships in an accountable and transparent manner. The efficiency level can be achieved if the business process model has been designed adequately, and payment delays can be reduced.
Improvisation of system design in current research focuses on internship participants with new graduate qualifications. There are some recommendations for future research. Future research can be developed to manage the administration and pocket money of Independent Campus Internship or Merdeka Belajar Kampus Merdeka (MBKM) participants. Pertamina Group is opening internship vacancies for this qualification, so a more complex system design can be developed to accommodate this requirement. Apart from that, further research is also expected to be able to provide curriculum facilities for each internship participant according to their function and the related field of work.

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