



## **Optimization of Human Resource Management Information System: A Case Study at BMT Al Hikmah Kudus**

**Darsin**

Universitas Muhammadiyah Kudus

e-mail : [darsin@umkudus.ac.id](mailto:darsin@umkudus.ac.id)

### **Abstract**

The aim of the Human Resource Information System (HRIS) research is to manage employee data, employee development processes, and employee performance evaluations. Data collection methods utilized include literature review, interviews, and observations. The research findings indicate the importance of understanding the role of HRIS in enhancing human resource management at BMT Al Hikmah Kudus. Furthermore, this study contributes to comprehending the optimization of information technology to achieve organizational effectiveness, particularly in the investment and savings sectors. The managerial implementation resulting from this research involves a better understanding of the HRIS role in enhancing human resource management at BMT Al Hikmah Kudus. Management at BMT Al Hikmah can utilize insights from this research to plan, develop, and implement HRIS more effectively. This encompasses a better understanding of employee data management, employee development processes, and employee performance evaluation. It is hoped that this research will assist BMT Al Hikmah Kudus in enhancing the quality of human resource management, overcoming challenges, and better utilizing existing opportunities, thus achieving organizational goals more efficiently and effectively.

**Keywords:** Effectiveness, Opportunities, HRMIS, HRM, BMT.

### **INTRODUCTION**

BMT Al Hikmah KSPPS (Islamic Savings and Loan Cooperative) Al-Hikmah was established in April 1997 in Bangsri as a Community Self-Help Institution (LKM) without legal status. Its establishment was initiated by community figures with 23 founding members. Initially, each member agreed to pay a basic deposit of Rp 500,000, which at that time successfully raised funds amounting to Rp 11,500,000. In August 1998, BMT Al-Hikmah obtained a business permit from the Jepara District Cooperatives and SMEs Office as a Multipurpose Cooperative (KSU). In the initial operational phase, the BMT Al-Hikmah office used semi-permanent wooden-walled rented premises, only in 2002 did it succeed in purchasing a permanent two-story office. The number of employees initially was only three, but by 2012 the number of employees had increased to 49, and it continues to grow to the current number of 98. In 2012, BMT Al-Hikmah changed its basic budget to become a Sharia Financial Services Cooperative (KJKS).

The products offered by KSPPS BMT Al-Hikmah include Sirela Savings, Future Voluntary Savings (SISUKA), Wadiah Savings, Al-Hikmah Umrah Savings, and Planned Savings Al-Hikmah (SITERA). Sirela Savings is a voluntary savings with deposits and withdrawals at any time using mudharabah contracts. SISUKA Savings is a term deposit that can be used as collateral for financing at BMT Al-Hikmah with a term of 3, 6, or 12 months. Wadiah Savings is a deposit with a minimum term of 24 months without profit sharing. Al-Hikmah Umrah Savings is intended for members who plan to perform Umrah, while SITERA Savings is intended for retirement, education, Hajj preparation, housing, or other plans.

BMT Al-Hikmah Kudus has a clear vision to become a professional, leading Islamic financial institution focused on prosperity. This vision reflects their determination to provide the best services within the framework of Islamic principles. In addition to the vision, BMT Al-Hikmah Kudus also has detailed missions. One of its main missions is to transform its managers and administrators into strong believers who apply Islamic values in every aspect of their lives. They are also committed to empowering their members, ensuring that every individual involved in this institution feels the positive impact of the activities and services provided.

Islamic financial institutions like BMT always strive to build an Islamic institution culture, where every action and decision is based on Islamic principles. They also aim to apply Sharia concepts correctly in all operational aspects, reaffirming their commitment to conducting business in accordance with the principles set by Islam. Additionally, they continuously strive to improve the quality of service to members, focusing on their satisfaction and needs. Finally, BMT Al-Hikmah Kudus is committed to continuously developing institutional management to adapt to environmental changes and ensure sustainable operational continuity. With such a strong vision, mission, and commitment, BMT Al-Hikmah Kudus is determined to be a leading Islamic financial institution and make a significant contribution to community welfare. With this background, the use of information system management is necessary to enhance operational system efficiency at BMT Al-Hikmah Kudus.

## **LITERATURE REVIEW**

### **Human Resources**

Human resources (HR) are a key factor in the success of any organization, including the BMT Al Hikmah Kudus financing institution. Efficient management facilitates achieving company goals and enhances competitive strength in the business environment. An assessment of the Human Resource Management Information System (HRMIS) at BMT Al Hikmah Kudus generates ideas on how information technology and HR management are utilized to achieve organizational productivity until business objectives are met.

BMT Al Hikmah is an institution that serves savings and loan, pawn and deposits, and financing. With this definition, BMT Al Hikmah Kudus has a mission and vision for the institution that it wants to realize. Thus, the implementation of modern information technology to support superior HR management is highly needed.

This study aims to delve deeper into how HRMIS contributes to the effectiveness of HR management at BMT Al Hikmah Kudus. The research is also to understand how the application of information technology in HR management can assist in employee data management, development, and performance management. This research will provide an explanation of how HRMIS can be the key to success in improving HR performance at BMT Al Hikmah Kudus.

### **Information System**

An information system is a collection of components (human, computer, information technology, and work management) that work together for a common purpose. According to Alter, an information system is a combination of work procedures, information, people, and information technology organized to achieve goals within an organization. The information system is divided into 6 supporting components: hardware, software, database, procedures, people, and computer/network communication.

### **Project Management**

Project management is the application of knowledge and skills, maximizing the best ways and existing resources to achieve predetermined goals and objectives. Wulandari & Yamasari (2012) explain that there are 5 M elements in project management, including Man, Material, Machine, Money, and Method. Project management has the objective of cost efficiency, resource and time, and is able to control tasks to be more efficient (Susanto & Andriana, 2019).

### **Organizational Planning**

Organizational planning is an important stage in project management that involves identifying, documenting, and placing project roles, responsibilities, and reporting to form a clear organizational structure for the project. This structure is often represented in responsibility task matrices and manpower management plans. In smaller information technology projects, there may not be separate project managers or separate project managers, but the human resource organizational planning process still considers several important steps. First, clearly defining project requirements. Second, defining the work method to be done to complete the work. Third, breaking down the work into manageable elements. And fourth, assigning responsibilities for each of these work elements. The result of this organizational planning is a human resource management plan that details when and how people will join the project team

and when they will be released from the project team as needed. This is important to ensure the right human resources are available at the right time and project tasks can be completed efficiently according to the established schedule (Hilqoh et al., 2021).

### Organizational Breakdown Structure (OBS)

OBS is a chart that shows parties or individuals responsible for a job and may involve parties or individuals from outside. Each department in the OBS has authority and responsibility for a WBS job. The merger of WBS with OBS will produce a cost account. Through the WBS, the project is detailed vertically down to the lowest levels and then combined with the OBS horizontally (Rafiezah Rizcha & Yaakub, 2023). The OBS can be seen in the following table:

**Table 1**  
**Structure OBS**

Structure OBS									
WBS Activities									
Unit OBS ----->		1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8
	System Engineering	R	RP					R	
	Software			RP					
	Development				RP				
	Hardware Development								
	Test Engineering		P						
	Quality Assurance					RP			
	Configuration Management						RP		
	Integrated Logistic Support							P	
	Training								RP

Source: Processed data, 2024

### Responsible Accountable Consulted Informed (RACI)

The RACI Chart, also known as the RACI Matrix, is a tool used to outline the roles and responsibilities of individuals within an organization or company. Its main objective is to ensure that there is no confusion regarding tasks or decisions to be executed by each individual in a team or project. Through the RACI Chart, every task or decision is labeled based on four main categories: Responsible (who is responsible), Accountable (who is ultimately accountable), Consulted (who is consulted), and Informed (who is informed). Thus, each team member or project participant has a clear understanding of their respective roles in completing tasks or making decisions. Additionally, the use of the RACI Chart helps prevent duplication of efforts and confusion that may arise, as each task or decision has been explicitly assigned ownership. Therefore, the RACI Chart becomes an effective tool in organizing and managing the roles and responsibilities of individuals in achieving the goals of the organization or company efficiently and effectively (Rahman et al., 2019). An example of a RACI matrix can be seen in the following figure:

**Table 2**  
**RACI Matriks**

Activity	Project Sponsor	Project Manajer	Project Team	Departement Manager
Prepare Bill of Materials		A	R	C
Prepare Estimate	I	A	R	I
Authorize Expenditure	R	I	I	I
Send Procurement Documents		R	C	
Evaluate Bids	A	R	C	
Perform Inspections	I	A	R	
R = Responsible A = Accountable C = Consult I = Inform				

Source: Processed data, 2024

## RESEARCH METHODS

In the data collection phase of this research, several activities were conducted, including literature review, interviews, and observations. Literature review was conducted by gathering various literature such as books and journals relevant to the research topic, both through the internet and libraries. The purpose of the literature review was to gain an in-depth understanding of the issues to be addressed in the research. Additionally, interviews were also an important data collection technique, where researchers engaged in dialogue or question-and-answer sessions with stakeholders involved in the project management business processes at BMT Al Hikmah Kudus. This aimed to obtain direct perspectives from them as well as a deeper understanding of their practices and experiences related to the research topic. Besides literature review and interviews, observation was also carried out as a data collection technique by conducting direct field observations to see firsthand the domains of issues existing at BMT Al Hikmah Kudus. By combining these three techniques, it is expected that the data obtained will be more comprehensive and insightful, providing a comprehensive overview of the research topic under discussion.

## RESULT AND DISCUSSION

### Project Management Information System Analysis of Human Resources

The resource phase in project management involves crucial aspects such as human, material, equipment, and cost/resources (Susanto & Andriana, 2019b). Project management itself refers to the application of knowledge, skills, and expertise to achieve specific goals, as expressed by Ramadhanti et al. (2021). In the analysis of project human resource management, there are several stages that must be passed through. First, organizational planning is carried out using the Organization Breakdown Structure (OBS), which helps identify an effective organizational structure for the project.

Task allocation and responsibilities are carried out using the Responsible Accountable Consulted Informed (RACI) method, which helps clarify who is



responsible, who needs to be held accountable, who needs to be consulted, and who needs to be informed about the tasks in the project. Then, project scheduling is done using the Precedence Diagram Method (PDM), which helps determine the sequence of activities and the dependency relationships among these activities. Finally, human resource management is carried out using the Resource-Constrained Schedule, which helps manage project human resources by considering existing limitations. Through these stages, it is expected that project human resource management can be carried out efficiently and effectively, thus achieving the project goals effectively.

### **Organizational Planning**

The process of organizational planning in human resource management involves several important stages to ensure the smoothness and success of project implementation. The first stage is to determine the departments or divisions involved in the project and to assign responsibilities to each department or division. This is important so that each department or division has a clear understanding of its role and contribution to achieving the overall project goals. Next, the second stage is to allocate tasks and responsibilities to each project member. In this stage, the roles and responsibilities of each project member are clearly defined, including authorities and involvement in each project activity. Thus, this organizational planning process helps build an effective and efficient organizational structure and ensures that each project member has a clear understanding of their role in achieving the project goals overall (Wandana, 2021).

### **Organizational Breakdown Structure (OBS) Method**

The process aims to identify the departments or divisions involved and assign responsibilities to each. This process is a crucial step in organizational planning in human resource management, as it ensures that each department or division has a clear role in project implementation and is responsible for specific parts of the work. By determining the departments or divisions involved, the project team can allocate resources efficiently and ensure that all aspects of the project are comprehensively covered. Additionally, by assigning responsibilities, each team member will have a clear understanding of their role and contribution to achieving the project goals. This helps improve coordination, collaboration, and overall team effectiveness. Thus, this process is a crucial initial step in ensuring the successful implementation of the project efficiently and effectively (Adhar, 2020).

### **Responsible Accountable Consulted Informed (RACI) Method**

After completing the Organizational Breakdown Structure (OBS) process, the next step is to enter the Responsible Accountable Consulted Informed (RACI) phase to allocate tasks and responsibilities to each project member. This stage is an important step in organizational planning in human resource management,

where each project member is assigned clear roles and responsibilities and is accountable for carrying out the work. Through RACI, each task is defined by stating who is responsible (Responsible), who should be accountable for the results (Accountable), who should be consulted (Consulted), and who should be informed about the task (Informed). Thus, RACI helps ensure that each team member has a clear understanding of their role and contribution to achieving the project goals, as well as maintaining accountability and transparency in project implementation overall. With structured task and responsibility allocation, it is hoped that the project can proceed more orderly, efficiently, and effectively, achieving the desired results according to the set goals (Kamal et al., 2020).

### Scheduling and Management

Scheduling and human resource management become the focus of this stage to ensure optimal scheduling and efficient human resource utilization. The analysis steps performed in this process include several important steps. The first is workforce identification, which aims to determine the number of project employees needed to complete each activity. This identification refers to the RACI Matrix table previously prepared, which lists the roles of each team member in each project activity. With a clear understanding of workforce needs, the project team can create realistic schedules and allocate human resources effectively, ensuring that the project can proceed according to the plan and targets set. Below are examples of human resource identification for the analysis and design section can be seen in tables 3 and 4.

**Tabel 3**

#### Identification of Workforce for the Development of LMS Website and Mobile Application for the Branch Office of BMT Al Hikmah Kudus

Tasks	Availability of Human Resources					
	Analysis	Design	Programmer	Testing	Maintenance	Doc
<b>Analysis</b>						
1.1	1					
1.2	1					
1.3	1					
1.4	1					
1.5	1					
<b>Desain</b>						
2.1		1	1			
2.2		1	1			
2.3		1				
2.4		1				
2.5		1	1			
2.6		1	1			
2.7		1				

Source: Processed data, 2024

The results of this workforce identification or project employee identification will be used for the scheduling process:

#### Precedence Diagram Method (PDM) Analysis

Before conducting an analysis of the Resource-Constrained Schedule, a PDM diagram of a project will first be created. This process is carried out to determine the dependencies between activities or tasks, the duration of project completion, and to identify the critical path of work (Aziz et al., 2018). The PDM network diagram can be seen in the following table.

Table 4

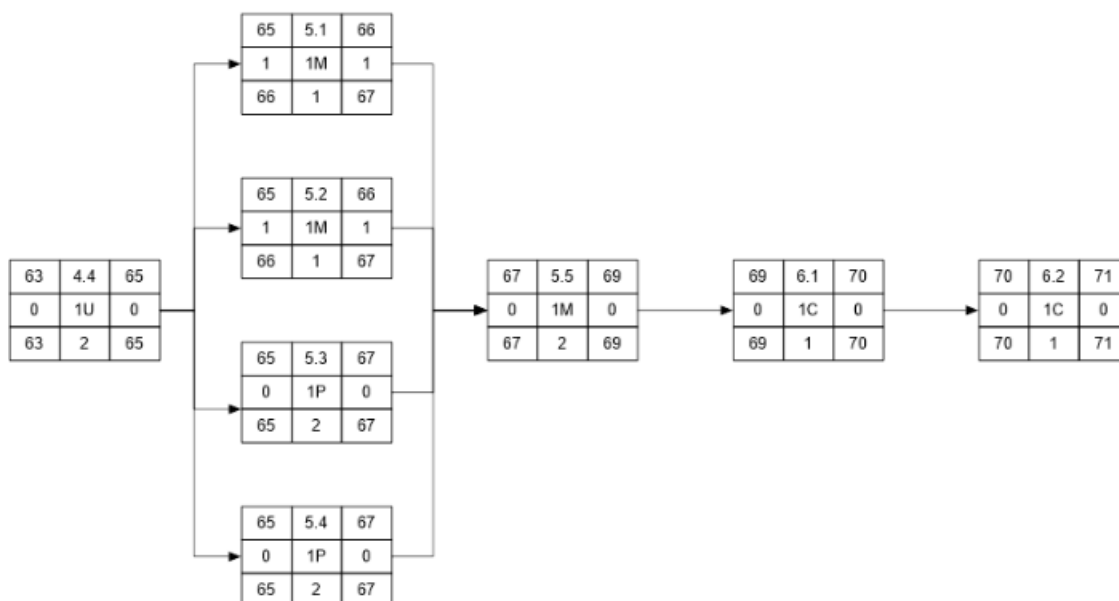
Precedence Diagram Method (PDM) Network

ES Earlier Start	No Pekerjaan	EF Earlier Finish
SL Slack/Delay	Resource/Deskripsi	
LS Latest Finish	D Duration	LF Latest Finish

Source: Processed data, 2024

Figure 2

The PDM Network For The LMS Website dan Mobile Application Development Project For The BMT Al Hikmah Kudus Office



Source: Processed data, 2024

The example schedule and network diagram results using the Precedence Diagram Method can be seen in Figure 2. The result of the project scheduling process is a schedule that considers the sequence and duration of each activity in the project, but does not yet take into account the availability of human resources involved. Therefore, the Resource Constrained Schedule method is needed to create a schedule that considers the limited availability of human resources. This method allows for a more realistic scheduling by considering the quantity and availability of existing human resources in project schedule



planning. By using the Resource Constrained Schedule, the project team can adjust the project schedule to the available human resources, minimizing scheduling conflicts and ensuring that each activity can be carried out according to the established plan. Thus, the use of this method is crucial in ensuring the smoothness and success of project implementation, as well as optimizing the utilization of limited human resources.

#### Resource-Constrained Schedule (RCS) Analysis

Resource constraints arise when the resources required by each activity in each time unit must not exceed the capacity of the available resources. This means that in scheduling the project, the availability of resources such as manpower, equipment, and materials needs to be considered. The Resource-Constrained Schedule (RCS) method is used to manage project scheduling by taking into account these resource constraints. For example, the results of management using the RCS method can be represented in a table showing the allocation of resources for each activity in various time units, allowing stakeholders to clearly see how resources are distributed and utilized during specific periods. Thus, RCS helps ensure that project scheduling not only considers the interactivity dependencies but also takes into account the limited availability of resources to achieve efficiency and smooth project implementation overall.

**Table 5**

#### **Resource Constrained Schedule untuk Proyek Pembangunan Aplikasi LMS Website DAN Mobile Kantor BMT Al Hikmah Kudus**

Tasks	Requirements	HRM	Dur	ES	LF	SL															
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.1		1A	2	0	2	0	1A	1A													
1.2	1	1A	1	2	3	0			1A												
1.3	2	1A	2	3	6	1					1A	1A									
1.4	2	1A	3	3	6	0				1A	1A	1A									
1.5	3.4	1A	1	6	8	1							1A								
Total Human Resources							1A	1A	1A	1A	2A	2A	1A								
Available Human Resources							1A	1A	1A	1A	1A	1A	1A								

Source: Processed data, 2024

From the analysis results using the Resource Constrained Schedule method in Table 5, it can be observed that there are several tasks that are piling up, leading to a shortage of human resources. This shortage of resources may cause delays in project completion if left unaddressed, requiring the project manager to recruit temporary employees to assist with and complete the tasks where there is a shortage of human resources. Therefore, a re-management of human resources is needed using the Resource Constrained Schedule method, where each task experiencing a shortage of resources will be rescheduled according to the available resources. The results of re-managing the project's human resources for both example project cases can be seen in Table 6.

**Table 6**  
**Resource Constrained Schedule for the Development Project of LMS**  
**Website and Mobile App for PT. Indonesia Power Academy**

Tasks	Require ments	SDM	Dur															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.1		1A	2	1A	1A													
1.2	1	1A	1			1A												
1.3	2	1A	2					1A	1A	1A	1A							
1.4	2	1A	3				1A	1A	1A									
1.5	3.4	1A	1									1A						
Total SDM				1A	1A	1A	1A	2A	2A	1A								
SDM Tersedia				1A	1A	1A	1A	1A	1A	1A								

Source: Processed data, 2024

The result of this analysis is a project schedule recommendation for project planning based on the available resources. With limited human resources and a multitude of tasks, it can be concluded that with clear organizational planning and task allocation, coupled with effective human resource management, project execution can be maximized, minimizing the likelihood of mid-project recruitment and project delays. From the analysis conducted, it can be inferred that project delays and the need for additional staff recruitment in the middle of the project are caused by inadequate prior planning, particularly in task allocation and responsibility assignment. However, by conducting previous steps such as identifying appropriate human resources, realistic scheduling, and employing suitable resource management methods, these issues can be addressed. The schedule recommendation resulting from this analysis can serve as a valuable guide for project managers in planning and managing their projects more efficiently and effectively in the future. Thus, the analysis and schedule recommendation process not only help address existing issues but also provide a strong foundation for the overall success of project implementation.

## CONCLUSION

The system implemented at BMT Al Hikmah Kudus plays a crucial role in supporting Project Managers in organizational planning. One of the advantages of this system is its ability to determine which department or division will be involved and responsible for specific projects, as well as assigning tasks and responsibilities to each project member. This enables every project member to clearly understand the workflow of tasks that need to be executed and their respective responsibilities. Additionally, the system allows Project Managers to plan and schedule projects according to the availability of resources. By utilizing the system, Project Managers can receive automatically generated project schedule recommendations, aiding in efficient project planning. Moreover, the system generates resource management data stored in the Resource Constrained Schedule table, which can be used as a basis for evaluation in monitoring and planning future projects. Thus, this system helps

enhance effectiveness and efficiency in project management, providing a solid foundation for making the right decisions at every stage of the project implementation.

## REFERENCES

- Adhar, A. (2020). *Perancangan Aplikasi Perpustakaan Sekolah Smp It Lukmanul Hakim Aceh Besar*. Jurnal Informatic, Education and Management (JIEM), 2(2).
- Aziz, N. J. A., Pratiwi, U., & Suyono, E. (2018). *Pengaruh Sistem Pengendalian Intern Pemerintah, Sistem Informasi Manajemen Daerah dan Kualitas Sumber Daya Manusia Terhadap Kinerja Manajerial Aparatur Pemerintah Daerah*. Jurnal Ekonomi, Bisnis, Dan Akuntansi (JEBA), 20(4).
- Hilqoh, K., Suhardiyah, M., & Noerchoidah. (2021). *Analisis Tatakelola Sistem Informasi Sumber Daya Manusia Terhadap Perfoema Perusahaan PT. Sentosa Karya Utama*. Journal of Sustainability Bussiness Research, 2(2).
- Kamal, M., Basri, M., & Jopang, J. (2020). *Implementasi Kebijakan Sistem Informasi Manajemen Kepegawaian Pada Badan Kepegawaian Dan Pengembangan Sumber Daya Manusia Kabupaten Bombana*. Publica: Jurnal Administrasi Pembangunan Dan Kebijakan Publik, 11(1). <https://doi.org/10.33772/publica.v11i1.12068>
- Rafiezah Rizcha, Y., & Yaakub, S. (2023). *Sistem Informasi Manajemen Sumber Daya Manusia Pada Universitas Muhammadiyah Jambi*. Jurnal Manajemen Sistem Informasi, 8(1).<https://doi.org/10.33998/jurnalmsi.2023.8.1.765>
- Rahman, S., Setiawan, A., & Handriani, I. (2019). *Sistem Pencatatan Dan Pendataan Manajemen Sumber Daya Manusia Dengan Model Scrum (Studi Kasus: Pt Bintang Trans Khatulistiwa)*. JSAI (Journal Scientific and Applied Informatics), 2(1). <https://doi.org/10.36085/jsai.v2i1.138>
- Susanto, R., & Andriana, A. D. (2019a). *Analisis Metode 360 Derajat Untuk Penilaian Kinerja Karyawan Pada Sistem Informasi Manajemen Sumber Daya Manusia*. Majalah Ilmiah UNIKOM, 17(1). <https://doi.org/10.34010/miu.v17i1.2232>
- Susanto, R., & Andriana, A. D. (2019b). *Analisis Metode 360 Derajat Untuk Penilaian Kinerja Karyawan Pada Sistem Informasi Manajemen Sumber Dayamanusia*. Majalah Ilmiah UNIKOM, 17(1). <https://doi.org/10.34010/miu.v17i1.2230>

Wandana, E. A. (2021). *Desain Sistem Informasi Manajemen Sumber Daya Manusia* (Studi Kasus Penginapan Griya Brawijaya Malang). *Jurnal Ilmiah Mahasiswa FEB*.

Wulandari, A. F., & Yamasari, Y. (2012). *Sistem Informasi Manajemen Sumber Daya Manusia* (Studi Kasus Bumida Syariah). *Jurnal Manajemen Informatika*, 01(01).