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OPTIMIZING MBKM MANAGEMENT BUSINESS PROCESSES AT XYZ HIGHER EDUCATION USING HARRINGTON

Li Cen[1], Gunawan Wang[2]
[1,2]Master of Information System Management, Universitas Bina Nusantara, Jakarta
[1,2]Jl. K.H. Syahdan No. 9, Kemanggisan, Palmerah, Jakarta, Indonesia
e-mail: li.cen@binus.ac.id[1], gunawan.wang@binus.ac.id[2]

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Corresponding author
li.cen@binus.ac.id

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Abstract
The MBKM program launched by the Ministry of Education and Culture in 2020 resulted in universities throughout Indonesia adding new business processes to process MBKM management, including XYZ College. One major problem occurred during the process, namely inefficiency in the business flow process, which caused the business process to run slowly. This research aims to help the MBKM central department reduce working days, make procedures more efficient, and synchronize data between the MBKM center and each study program. This research uses Harrington's Business Process Improvement (BPI) method, which eliminates errors, reduces waiting time, increases understanding, and makes it easy to use. The results of this research are recommendations for more efficient business processes with an efficiency of 33.95% in all MBKM center procedures based on simulation by Visual Paradigm Application.

I. INTRODUCTION

Education is a social necessity for developing self-potential, skills, and personal character [1]. Colleges are the highest education with a humanitarian responsibility that prepares Indonesian humans to prepare humans for higher potential and noble morality, supported by the mastery of science and technology [2]. In 2020, the Ministry of Education and Culture launched a new initiative called Merdeka Belajar Kampus Merdeka (MBKM) to help students improve their soft and hard skills [3]. This program strives to establish an active and innovative learning environment for students by combining skills, knowledge, and abilities.

Business Process Improvement (BPI) is a systematic methodology for improving business processes within firms. This attempts to streamline operations, improve efficiency, and boost customer satisfaction [4]. BPI entails examining existing processes, identifying opportunities for improvement, and implementing changes to increase performance. This frequently comprises tasks like planning for improvement, understanding processes, simplifying activities, monitoring and regulating performance, and continuously improving processes. Business process improvement (BPI) is essential because it improves organizational efficiency and effectiveness. BPI techniques attempt to streamline business processes, resulting in better outcomes for both internal and external stakeholders [5]. BPI also makes identifying and eliminating non-value-added tasks easier, improving operations and reducing processing times. It lets businesses achieve their objectives by continuously upgrading their processes in response to changing market needs. In today's fast-paced corporate climate, BPI is critical for generating operational excellence, increasing customer happiness, and assuring organizational success.

Higher Education Institutions (HEI) can use Business Process Improvement (BPI) to enhance their procedures and match them with the overarching plan [6]. BPI provides characteristics like analysis, prediction, monitoring, control, and optimization while utilizing measurement and analysis methodologies to manage the process execution quality. Given the unique traits and operational complexity of HEIs, significant gains in several procedures can be achieved by applying BPI at these kinds of institutions. Research has demonstrated that the successful design and execution of Data Governance (DG), as well as the

quality of data and information, are positively impacted by the application of Business Process Improvement (BPI) in Higher Education (PT) [7]. Universities should consider aspects including efficient resource allocation, alignment with business strategy, and technology support to guarantee successful BPI implementation.

MBKM is an educational revolution powered by Industry 4.0. It enhances learning opportunities in the classroom and through study programs. XYZ College has fully adopted the MBKM program since 2021, establishing the MBKM Center to maintain all the processes in MBKM and keep updating all about the MBKM from the government. The MBKM programs include internships, independent studies, student exchange, teaching assistance, and entrepreneurial activities. Most of these programs result from independent efforts by each department, collaborating with local, national, and international partners. Many students are enrolled in MBKM Flagship programs like MSIB, PMM, Campus Teaching, and IISMA. XYZ College also offers programs for external students to run MBKM programs. The program is deemed crucial for college growth. It provides eight courses, including student exchanges, internships, teaching in educational institutions, rural projects, research, entrepreneurship efforts, self-study, and charity efforts [8]. MBKM aims to improve students' hard and soft skills, prepare them for the future, and fulfill the needs of a changing world.

XYZ College faces a significant challenge in data synchronization, leading to data redundancy. The MBKM implementation process is independent and not supported by integrated information systems. The data collected by MBKM centers becomes unclear due to dynamic data movement, affecting KPIs like student involvement and conversion percentage. Poor data quality also makes reports unreliable. This issue was highlighted during a management review meeting where another undergraduate program challenged data submitted by the MBKM center. College leaders are seeking better processes and data quality improvements.

The implementation of MBKM at XYZ College faces challenges due to manual business processes, requiring proactive coordination among parties, and improper data sync due to each party's storage of its data.

This study aims to optimize MBKM management business processes at XYZ College using the Harrington BPI Approach and measure the optimization of these processes using the Visual Paradigm. Visual Paradigm is a software application for visual modeling and system analysis. It is a valuable software development and project management tool for visually describing, planning, and analyzing many elements of processes and systems.

The Harrington BPI Approach can be used to optimize business processes in MBKM management at XYZ College, providing recommendations, simulations, and improved procedures for the center. This research focuses on optimizing business processes at XYZ College's MBKM Center, including planning, registration, notification, conversion, implementation, reporting, and verification of MBKM programs from 2021-2024.

"business process improvement" (BPI) refers to a systematic process of locating, evaluating, and enhancing an organization's current business processes to maximize productivity, effectiveness, and overall performance. BPI's key objectives are Simplifying workflows, eliminating pointless procedures, cutting costs, raising quality standards, and eventually raising customer happiness. A study on the application of business process improvement (BPI) [9] demonstrated how knowledge exchange among stakeholders allowed for a 35.10% increase in business process efficiency. In a different study, the Value Stream Mapping (VSM) technique was combined with BPI in manufacturing organizations [10]. Another study that used BPI on MSMEs revealed a 21-hour time efficiency gain of 80.61% [11]. These studies demonstrate that businesses of all sizes and industries may use BPI.

Streamlining business processes should be the first step towards achieving one of the digital revolutions mandated by most higher education institutions, according to a study by [12]. Numerous business processes are involved in higher education, including new student admissions, financial management, academic administration, student support services, and MBKM management, one of the newest but is being used nationwide. Universities can save time, effort, and resources by identifying and eliminating process inefficiencies using BPI [13]. Prior research on this subject was also done, such as [14] streamlining the student registration procedure. [15] A study used the Harrington approach to apply BPI to research management institutions.

II. RESEARCH METHODS

This research aims to optimize MBKM management at XYZ College using Harrington's (1991) BPI approach, focusing on continuous improvement and systematic improvement of business processes.

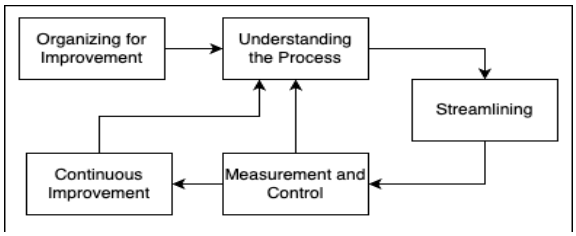

Figure 1 Harrington's Process

1) Organizing for Improvement
   Decide which commerce forms will be progressed through a meet handle. The coming about of the meet will, at that point, be handled to get methods that will be optimized and the impediments confronted.
2) Understanding the Process
   Current business process flow diagram, then a process timing analysis is performed based on the interview results and compared to the appropriate SOP document to determine the implementation time gap between the document and practical implementation.
3) Streamlining

The process of restructuring existing business processes and improving the efficiency, effectiveness, and adaptability of previous business processes to achieve the same goals. In addition, it also minimizes problems and obstacles that arise.

4) Measurement and Control
   Implement recommended business process measurements to ensure sustained performance and efficiency of business process implementations. This process is performed as a business process simulation with Visual Paradigm. Using the Visual Paradigm application, you can simulate the estimated workday length required to complete existing processes. With the Visual Paradigm app, you can see how long processes take to be repaired.
5) Continuous Improvement
   Implementation of recommended business processes is then re-evaluated for periodic improvements.

III. FINDINGS

3.1. Organizing for Improvement

The following results were obtained from the interview results. In terms of the processes carried out and the roles of each unit, almost every process has its implementer; for example, for the design of the Independent MBKM program, the leading implementer is the program researcher. Process while the MBKM center is the only one that verifies and approves its completeness.

The head of the MBKM center even added that during the implementation process, if there are no problems with the completeness of documents, all MBKM programs will be approved. This differs from MBKM's flagship program design process, in which the MBKM center is the implementing side and the research program is the validating side.

The problems that arise in each procedure have similar issues, such as delays in collecting student files and the lecturer team and study program in carrying out existing procedures; there is no follow-up to ensure that all existing procedures are running well, causing data inconsistency between data in the study program with data at the MBKM Center.

There is a general plan to improve existing problems; the MBKM center must have clear and detailed guidelines and time frames for each team of lecturers, study programs, and students to carry out all existing procedures. A continuous follow-up mechanism is needed to ensure all procedures run correctly, and the last thing is to synchronize and re-evaluate the data collected, as well as the time required to carry out each existing procedure.

3.2. Understanding the Process

In this process, we first start by defining every procedure that exists in MBKM management at XYZ College, namely as follows:

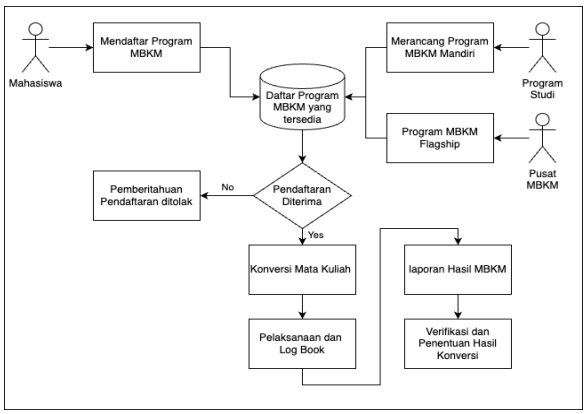

Figure 2 MBKM Management Procedure

The entire process carried out by the MBKM Center can be explained using the following ten procedures:

1) Procedures for designing the Independent MBKM Program
2) MBKM Flagship program procedure
3) Procedure for registration for the MBKM program by students
4) MBKM Program Registration Acceptance Procedure
5) Procedures for notification of registration being accepted.
6) Procedures for notification of registration being rejected.
7) Procedure for conversion of MBKM program courses
8) Execution procedures and logbook
9) Procedure for reporting MBKM results
10) MBKM Program Conversion Procedure

Procedures	Guide Time	Realtime	Gap waktu
Procedures for designing the Independent MBKM Program	3 month and 10 days	3 month and 41 work days	31 work days
MBKM Flagship program procedure	7 work days	12 work days	5 work days
Procedure for registration for the MBKM program by students	3 week and 2 work days	6 week and 2 work days	15 work days
MBKM Program Registration Acceptance Procedure	8 work days	15 work days	7 work days
Procedures for notification of registration being accepted	3 work days	2 work days	2 work days
Procedures for notification of registration being rejected	2 work days	2 work days	0 work days
Procedure for conversion of MBKM program courses	3 work days	7 work days	4 work days
Execution procedures and logbook	everyweek	everyweek	0 work days
Procedure for reporting MBKM results	5 work days	9 work days	4 work days
MBKM Program Conversion Procedure	15 work days	30 work days	15 work days

Figure 3 Summary of conditions based on observations.

3.3. Streamlining

After further analysis, some changes were made to the MBKM center's processes. Still, some processes remained the same because they were considered quite effective in management. 4 processes have been revised to become more effective and efficient, two processes have not been modified, and four processes have been combined with two new processes.

The remaining procedures are the MBKM program registration procedure, the MBKM program implementation procedure, and the logbook.

Meanwhile, the merger procedure is the acceptance and rejection procedure of the MBKM program because these two procedures have similarities. Therefore, the MBKM program procedures and final reporting procedures should be combined with the MBKM program conversion procedures because the two procedures are interrelated and can be combined into a new procedure.

The first procedural change is in the Procedures for designing the Independent MBKM Program. The change made is that there is no need for a desk evaluation and improvement of the independent MBKM program plan because it will be manually selected again by the MBKM Center regarding the independent MBKM program.

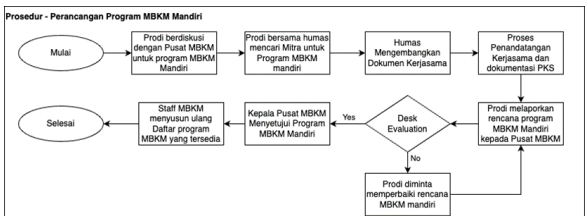

Figure 4 Procedures for designing the Independent MBKM Program - Before BPI

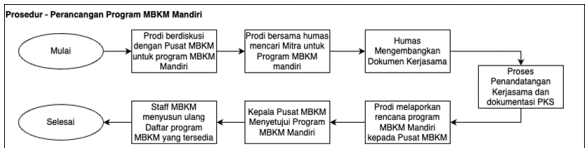

Figure 5 Procedures for designing the Independent MBKM Program - After BPI

The second procedure that changed was the MBKM Flagship program procedure, which saw significant changes and additions, such as in the early stages when MBKM staff who checked into the Independent Campus system were replaced by study program staff to speed up the MBKM program selection process without the need for MBKM staff transitions. Aside from that, study programs do not need to study the program since they are the ones who identify the required flagship MBKM program and proceed directly to the stage of preparing prerequisites and submitting all data to the MBKM center.

Figure 4 depicts one of the procedures at the MBKM center, which consists of 7 activities or tasks that must be carried out from start to finish. After the streamlining stage, the procedure changes to 6 activities or tasks that need to be carried out, and there are changes to 4 activities. Streamlining results can be seen in Figure 5

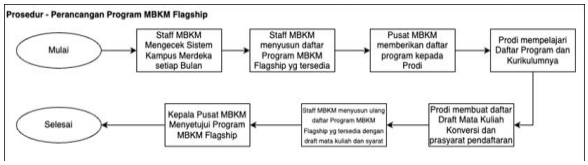

Figure 6 MBKM Flagship program procedure - Before BPI

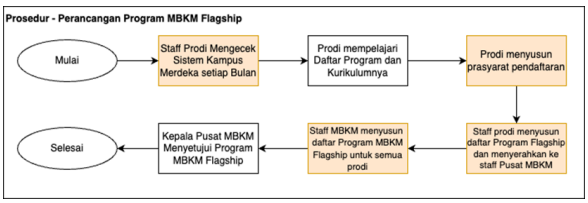

Figure 7 MBKM Flagship program procedure - After BPI

The third procedure involves accepting registration for the MBKM program. The improvements are intended to accelerate the results of admission decisions by study programs by removing course conversion drafting. Course conversion drafting is deleted because the student will move on to the next stage if accepted into the MBKM program. The MBKM notification design technique combines the program's acceptance and rejection notification procedures. This merger was made since the procedures are comparable and take longer. Aside from that, there are certain adjustments to the method, such as when MBKM staff receives admission results, they immediately contact BAUK staff for numbering, and the head of the MBKM center signs digitally and sends a notification letter to students.

The fourth procedure is the course conversion drafting process. The adjustment was to remove the approval process from the head of the study program because it was still in the drafting stage, and no approval was required from the head. The process is omitted because course conversion is still needed for the final level.

The final report procedure for the MBKM program and the course conversion method were integrated into a new procedure known as the MBKM program's final report and conversion procedure. The two operations are combined because they are linked, and neither procedure performs the same activity more than once. The difference is that once DPL accepts the final MBKM report, the professor team immediately investigates and evaluates whether the report is adequate.

3.4. Measurement and Control

To perform the measurements, the author uses the Visual Paradigm application, which can provide a simulation of processes that have been redesigned to reduce the length of the working day. Tasks are added based on previous or current processes in a Visual Paradigm app, and work times are added based on existing data. After completing the process, the current scenario will be simulated. Multiple scenarios can be created as there are Yes or No conditions and include the number of possible cases. This simulation will show the days required to complete all existing procedures.

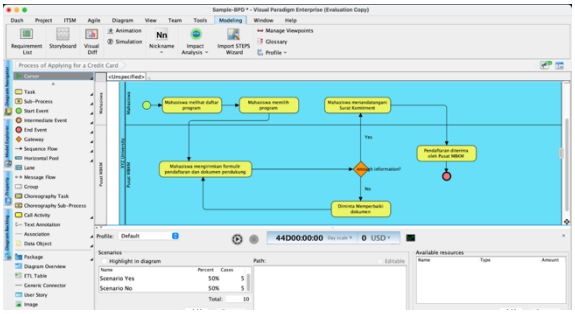

Figure 8 Visual Paradigm App

The time efficiency of Procedures for designing the Independent MBKM Program is not significant, i.e., only 9.38% or nine working days. However, with the extended timeline, the time required for an undergrad program to recommend a more extended MBKM program with a partner. This change in the business process will enable Prodi and Humas to perform more effectively in planning an Independent MBKM Program.

The Flagship's MBKM Planning Procedure has undergone quite a significant change with the replacement of the actors who initiated this procedure from the MBKM Centre Staff to the undergraduate program staff, the independent MBKM process becoming simpler but more focused, and with a significantly more efficient method of 75%.

The one-week-long registration process corresponded to the findings at the interview that mentioned an insignificant number of the fourth week's registrants, and the registration undergraduate program also rejected the majority. Hence, the researchers concluded the most appropriate duration was three weeks. The revision was also cut in time to provide a more structured duration for the registration revision.

In the MBKM Program Registration Acceptance Procedure, the time spent doing business is reduced by removing the dependency on draft conversion courses. Moreover, sending notification letters to students is simplified by using digital letters to make the process much faster.

In Procedures for notification of registration being accepted or rejected, quite a lot of streams are deleted, such as "The Head of the MBKM Centre Approves Draft Letter," which is carried out because the notification letter already has its template so that an error occurs except for typing errors can be considered non-existent. Besides, the decommissioning process is also separated from BAUK because the decomposition system is its own. BAUK gets enough information from the MBKM Centre staff using the exit mail number. Digitally designed letters also do not need to be printed by the IT Centre, so the whole process can be completed in one working day, from drafting the letter to delivery to the student.

The following image shows the general efficiency obtained from the entire BPI process. In the Procedure for conversion of MBKM program courses, the researchers decided to eliminate the approval process by the Head of the Undergraduate Program and make improvements to the conversion draft because other than the undergraduate program management felt the drafting process of the course was not final, so no approval was needed.

The changes to this verification procedures and determination of conversion result are designed with a focus on the end of the PDDIKTI reporting, i.e., the maximum implementation of the entire process should be completed in the first week of April and October so that if there are cases or errors, there is still time to fix. That requires a more rigid schedule of interviews, a higher intensity, and a significant number of students.

Procedure	Before BPI	After BPI	Efficiency
Procedures for designing the Independent MBKM Program	96	87	9
MBKM Flagship program procedure	12	3	9
Procedure for registration for the MBKM program by students	33	21	12
Procedures for notification of registration being rejected or accepted	15	4	11
Procedure for conversion of MBKM program courses	5	1	4
Execution procedures and log book	7	3	4
Verification procedures and determination of conversion results.	50	25	25
Total	**218**	**144**	**74 (33.95%)**

Figure 9 Efficiency summary table of the BPI Process

3.5. Continuous Improvement

Implementation of the proposed business processes will then be reassessed for regular improvement. Start by changing the business processes from 10 at the start to 7 business processes to cover everything. Each new procedure impacts the number of working days for each procedure; in some places, it is reduced by up to 69 working days, or the working time ratio is reduced by up to 33.95%.

By reducing time, the MBKM center can run other business processes faster and synchronize data more accurately, where data synchronization problems can be directly resolved. Besides implementing new business processes, the researchers also recommended developing an MBKM information system to help the MBKM Center, research programs, students, faculty, and universities document and supervise all procedures carried out by the MBKM Center. With the help of the MBKM information system, data synchronization will be more assured as all data will be entered directly into the system, and you can view the data and monitor all current processes directly. The development of the MBKM information system will then be based on the business processes designed in this study.

With an efficiency of 33.95%, this technique can still be developed more efficiently and effectively. Still, it will require an integrated information system, which is also one of the researchers' recommendations to XYZ College. All the research findings are presented to the MBKM center, Quality Assurance department, university leadership, and IT department as recommendations for changes to MBKM management business processes. The general research recommendations are as follows.

IV. DISCUSSION

This study concludes that the business process improvement process (BPI) is still required in designing procedures for a division, organization, or college to acquire more effective and efficient methods for executing existing business processes. Universities are increasingly focused on service quality and sustainability, so BPI is needed to assist them in accomplishing these strategic goals. Implementing BPI initiatives in colleges can provide enough time, knowledge, financing, collaboration, supervision, and procedures requiring revision. Furthermore, universities are under pressure to improve their teaching, research, and networking, and BPI approaches can give systematic methods to streamline processes and ensure effective administration. Furthermore, BPI improves overall institution efficiency by detecting inefficiencies in operations, teaching, and research, allowing the university to allocate resources better and improve performance.

Interacting with BPI at universities can provide some of the following benefits. First, BPI simplifies business procedures, resulting in higher productivity and better outcomes for both internal and external stakeholders. Second, BPI adoption improves employee perception, resulting in higher usage of automation, rapid problem-solving capabilities, and alignment of strategic and departmental goals. Furthermore, the BPI enhances the adaptation of educational processes to market demands, optimizes learning processes, and increases efficiency in reacting to changing labor market needs. In addition, BPI can result in significant time and expense savings, as evidenced by research that found a 33.95% reduction in working days.

The BPI process itself can use the Harrington (1991) method, which has five stages, i.e., start with identifying and knowing the entire business process run by existing colleges and finding weaknesses and things to improve, then enter the phase analysis of the stage whether it is added value or not. Then, the most critical phase is the streamlining phase. It will help the organization eliminate or change necessary and unnecessary activities to improve the effectiveness of business process activities. After making changes to the activity, it is essential to test the effectiveness of the business process that has been enhanced to measure business processes periodically to drive further improvements. The last step at Harrington is to apply the business Process that has improved regularly and to evaluate the improved processes to identify new problems, which are then re-evaluated in the following business process.

This methodology uses Harrington's desire function to simulate the coordinated behavior of subsystems within an organization, considering their relationships and impacts. By turning system parameters into numerical values and processing them to estimate total system efficiency, the Harrington methodology allows for a thorough examination of performance and optimization options. This approach reflects the need for organized and procedural BPI approaches to improve organizational operations and fulfill market expectations. Implementing the Harrington methodology can help experienced and rookie practitioners make educated, consistent, and efficient adjustments to business processes, ultimately leading to long-term gains.

In further improvements, the BPI method itself can be used to create procedures or circuits for system design, as well as processes that need the usage of robotics or artificial intelligence. Integrating BPI operations with modern technology can benefit greatly, including reduced human error, increased efficiency, and lower operational costs because BPI provides a deeper understanding of current business process performance and identifies areas for improvement. As a result of the analytical process, BPI can also examine the products required to carry out such activities, lowering infrastructure costs and improving team-to-team collaboration.

V. CONCLUSION

In this study, it can be concluded that optimizing the MBKM management business process at XYZ College using Harrington on MBKM management can be done well. This business process optimization brings positive benefits, helping to deploy MBKM management and synchronize MBKM data more frequently, effectively, and efficiently. Below are the results of this study:

1) Business process improvement aims to streamline business processes and accelerate their implementation.
2) The BPI process is implemented according to the Harrington approach, which includes organizing improvement, process understanding, rationalization, measurement and control, and continuous improvement.
3) The BPI process is implemented according to Harrington's approach and includes organizational improvement, process understanding, streamlining, measurement and control, and continuous improvement.
4) All procedures have experienced a decrease in working time by 74 working days or a 33.95% decrease, from 218 working days to 149 working days.

The following are some of the recommendations given to the management of MBKM, specifically the MBKM Centre and the Prodi Executive:

1) The head of the center will be able to use the optimization and simulation results as benchmarks for program implementation and management of MBKM.
2) The MBKM Center should request that the IT department accelerate the development of the management system MBKM.
3) The deployment of the information system will change the procedures by increasingly streamlining the business processes, which require re-analysis.

4) Further research can focus on optimizing academic processes, conducting tracer studies, and obtaining accreditation.

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