Business Process Design Using Model Based and Integrated Process Improvement Methodology (MIPIM) in Barumun Ecotourism, North Sumatra

Eva Krista Hutajulu[1], Riza Adrianti Supono[2], Ronna Saab[3]

[1]Master Student, Faculty of Technology and Engineering, Business Information System, University of Gunadarma, Indonesia
[2, 3]Faculty of Technology and Engineering, University of Gunadarma, Indonesia
Email address: [1]evakrista.h74 @ gmail.com, [2]adrianti @ staff.gunadarma.ac.id, [3]ronnasaab @ gmail.com

Abstract— *Barumun Ecotourism was developed around the Barumun Wildlife Reserve area which includes three villages, namely Morang Village, Batu Nanggar and Purba Tua located in Batang Onang sub-district, North Padang Lawas Regency, North Sumatra Province. Barumun Ecotourism is managed by the Tourism Awareness Group (Pokdarwis) but in its implementation it still does not have a standard business process.*

From the identification of existing problems, researchers applied the Model-Based and Integrated Process Improvement Methodology (MIPIM) developed by Adesola and Baines (2005), with the aim of designing a proposed business process for the management of Barumun ecotourism. In this research, the MIPI methodology is only applied until the fourth step, which is identifying business process needs, identifying initial business processes, conducting business process analysis and designing business process proposals, then proceed with making the Standard Operating Procedure (SOP) proposals as a standard guide in carrying out activities in Barumun ecotourism.

If this business process can be implemented, it is expected that the management of ecotourism in Barumun can run well, so that it can benefit all related components, especially improving the welfare of the community and preserving the natural environment and local culture.

Keywords— *Business Process, Model-Based and Integrated Process Improvement Methodology (MIPIM).*

I. INTRODUCTION

Ecotourism is one of the environmentally friendly tourism activities by prioritizing aspects of nature conservation, aspects of socio-economic empowerment of local communities and aspects of learning and education. This definition was popularized by an organization called The International Ecotourism Society (TIES) (1990) as follows: "Ecotourism is a form of travel to natural areas carried out with the aim of conserving the environment and preserving the lives and well-being of local residents".

The area around the Barumun Wildlife Reserve area is one of Indonesia's ecotourism potential areas where there are three villages that have excellent ecotourism potential to be developed, namely Morang Village, Batu Nanggar Village and Purba Tua Village located in Batang Onang District, Padang Lawas Regency, North Sumatra Province.

Barumun ecotourism management is based on the community by forming a Kelompok Sadar Wisata (Pokdarwis). The existence of Pokdarwis in the context of

developing tourist destinations has played a role as a "driving force" in contributing to the creation of a conducive environment at the local ecotourism level, which collectively will positively impact the development of tourist destinations in Indonesia. broader regional context.

There are several issues that have become a problem in conducting ecotourism in the Barumun Wildlife Reserve, including:
1. The absence of business processes and standard procedures in the management of ecotourism in Barumun, with the result that management is not well organized.
2. The relationship between one process and another has not been determined by default, so there is an overlap in the task and responsibilities between related components, from the tourist's registration up to the distribution of tasks and responsibilities.

II. RESEARCH METHODS

The Model-Based and Integrated Process Improvement Methodology (MIPIM) is a Business process improvement (BPI) methodology that is the result of research into Sola and Team's Doctoral programs (2005). MIPIM is a general approach to BPI which consists of seven steps procedural approach as a guide for actions and decisions that can be taken by the team. The MIPIM explains "what can be done" and "how".
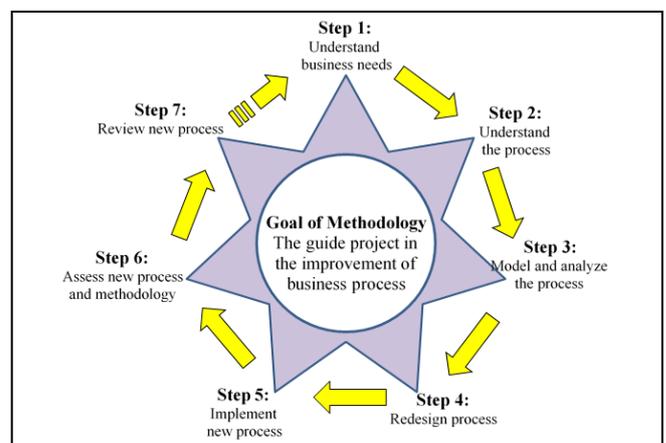

Fig. 1. The seven steps of the MIPI methodology.

This research uses the Model-Based and Integrated Process Improvement methodology (MIPIM). However, the application of the MIPIM in this study is carried out only up to the fourth step, after which making a proposal for Standard Operating Procedure (SOP) as a follow-up to the design of business processes have been done.
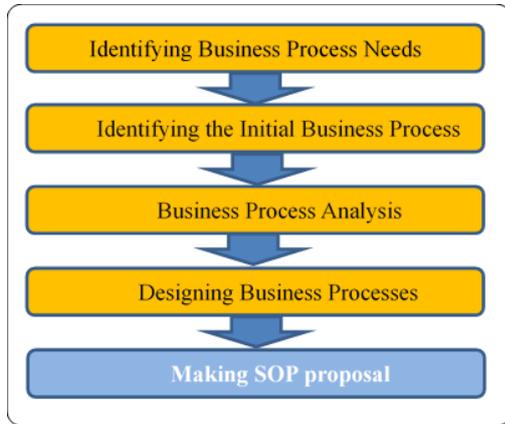

Fig. 2. Research Stages.

III. RESEARCH RESULTS AND DISCUSSION

The identification of business processes is carried out by interviewing stakeholders (stakeholders), in this case the Village Head, Pokdarwis and the local community as the implementer of ecotourism in the tourist vehicle. This interview aims to obtain data on business processes that have been carried out so far, so that it can be known deficiencies of the business process. From the data obtained, a Gap Analysis will be generated, so that new business process requirements can be determined.

A. Stakeholder Identification

Stakeholders can be divided into 3 (three) groups (Maryono et al.2005), in research (Yosevita: 25), including:

1. Primary stakeholders, are stakeholders who are directly affected by both the positive and negative impacts of a plan and have a direct interest relationship with the activity. Stakeholders who have influence and interest are said to be primary stakeholders and must be fully involved in the stages of the activity.
2. Key stakeholders, are those who have legal authority in terms of decision making. In this study, the key stakeholders are those responsible for implementing the development of Barumun ecotourism.
3. Supporting stakeholders, are stakeholders who do not have a direct interest in a plan, but have a great concern for the development process.

TABLE I. Stakeholder Group.

		Interests	
		Great	Small
Influence	Great	Village Community	Village Government
	Small	Pokdarwis	*Tour Operator*

From the stakeholder group in TABLE I, it can be explained as follows:

1. Village Communities have very high importance and influence, this is due to Community-based Barumun ecotourism, so that most of the implementation is carried out by the Community and for the Community. Key stakeholders, are those who have legal authority in terms of decision making. In this study, the key stakeholders are those responsible for implementing the development of Barumun ecotourism.
2. Pokdarwis has big interests but little influence, this is because Pokdarwis's role is only as an executive coordinator and tour guide.
3. The Village Government has little interest but a large influence, this is because the Village Government only gives legitimacy and guidance to the implementation of the Barumun ecotourism.
4. Tour operators have little interest and influence, Tour Operators only play a role as a liaison between tourists and pokdarwis, however the existence of a Tour Operator is needed as a means of providing information for potential tourists.

B. Business Process Needs

After all stakeholders who are also process owners have been identified, interviews are then held to obtain data for the needs of business processes, the results of these interviews are displayed in tabular form which can be seen in table II as follows:

TABLE II. Result Interviews.

No		Questions	Process Owner		
			Tour Operator	Pokdarwis	Village Community
	Registration				
1	1.1	To whom Travellers register	To Tour Operator		
	1.2	How to register	Fill out the registration form manually		
	1.3	What is filled in the registration form	▪ Identity number ▪ Email address ▪ Home Address ▪ Phone number ▪ Number of participants ▪ Tourist destinations ▪ Travel dates		
	1.4	What tourists get as proof of registration	Copy of registration form that has been signed by Tour Operator		
	1.5	How travellers get to the location	• Using existing modes of transportation • Depart according to the specified meeting location		
	1.6	Who accompanies tourists on the	Accompanied by Tour Operator (TO)		

		way to the location		
	1.7	What to do after registration	• Specify the scheduled departure & rundown event • Contact the Pokdarwis	• Receive potential tourist information • Define Guide • Coordinate with the village community	• Get information about potential travellers from Pokdarwi • Prepare for tourist locations including homestay
	Verification			
	2.1	To Ready Travellers verify	Verified by Tour Operator when established	Verified by Tour Operator in nature tourism location	
2	2.2	What will be verified	▪ Identity number ▪ Email address ▪ Home Address ▪ Phone number ▪ Number of participants ▪ Tourist destinations ▪ Travel dates	▪ Identity number ▪ Email address ▪ Home Address ▪ Phone number ▪ Number of participants ▪ Tourist destinations Travel dates	
	2.3	Where to verify documents	During registration	Upon arrival at the location	
	Implementation			
	3.1	What to do after the traveler reached the location	Bring tourists with a guide from Pokdarwis	Receive tourist arrivals and Tour operators	Receiving tourist arrivals, Tour operators and guides from Pokdarwis
	3.2	Who will guide the tourists	Guided by Totr Operator with Pokdarwis	Guided by a Pokdarwis guide to a tourist site	Accompanied by local villagers (for certain activities)
3	3.3	Where tourists will stay			Stay in a homestay belonging to Community village
	3.4	What communication tools are used in the field	• Mobile phone • Handy Talky	• Mobile phone • Handy Talky	• Mobile phone
	3.5	What to do after tourists finish sightseeing	Accompany the traveller back to the original meeting location		Delivering tourists to the final tourist site Al

C. Initial Business Process Identification

From the results of interviews with the process owner, it can be seen that there are several processes that have been carried out in the implementation of ecotourism in Barumun, while the business processes that run can be seen in Business Process Modelling and Notation (BPMN), which is illustrated in the form of a flow chart.
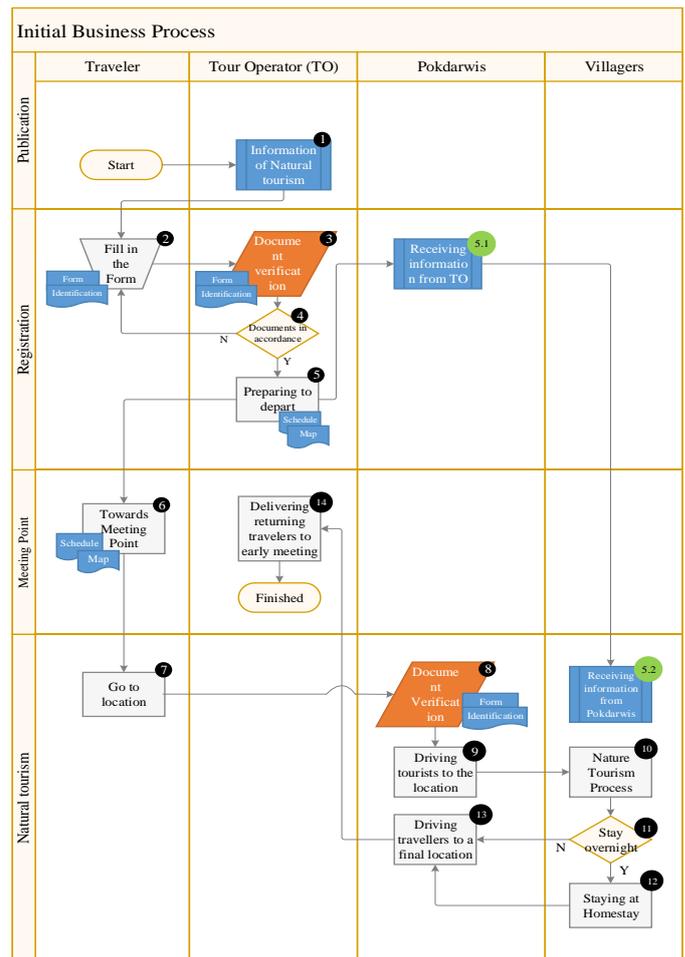

Fig. 3. Initial Business Process.

D. Business Process Analysis

From the results of the identification of initial business processes that have been carried out, then an analysis is carried out using SWOT analysis and gap analysis, so that it can be known the difference between the pre-existing process and the process that will be proposed.

TABLE III. SWOT Analysis.

SW / OT	Strength	Weakness
	• Have three stakeholders • Pokdarwis has clear legal authorization and is a partner of the village community • Community-based ecotourism	• There is no standard business process • Manual registration (form) • Verification of data manually • Manual data storage • There is no standard SOP
Opportunities • Provide enough information so as to attract more travellers • • Facilitate the travel process registration	• Make it easy for travellers to get information • Accelerate the process • Make it easier for travellers to register	• Create a default business process • Create an online registration system • Create an online verification system • Create a data storage system • Make SOP
Threat The public does not get enough information so it is difficult to bring tourists	Ecotourism Barumun, introducing the natural tourism potential of the local culture and interesting to visit	Publication and promotion in order to provide as much information about the ecotourism Barumun

From the SWOT analysis, it can be seen several weaknesses in the previous process, namely: The business process is not standardized, tourist registration are manually implemented by filling out the form, and data verification is still being done manually.

E. Design a Proposed Business Process

Based on the analysis of existing business processes, the proposed business process can be designed using the Business Process Modelling and Notation (BPMN) method, which is illustrated in the form of a flowchart, starting from the registration process to the implementation of ecotourism in Barumun. The process begins with two "Start" notations, the first is the online registration process and the second is the registration process through the tour operator.

TABLE IV. Gap Analysis.

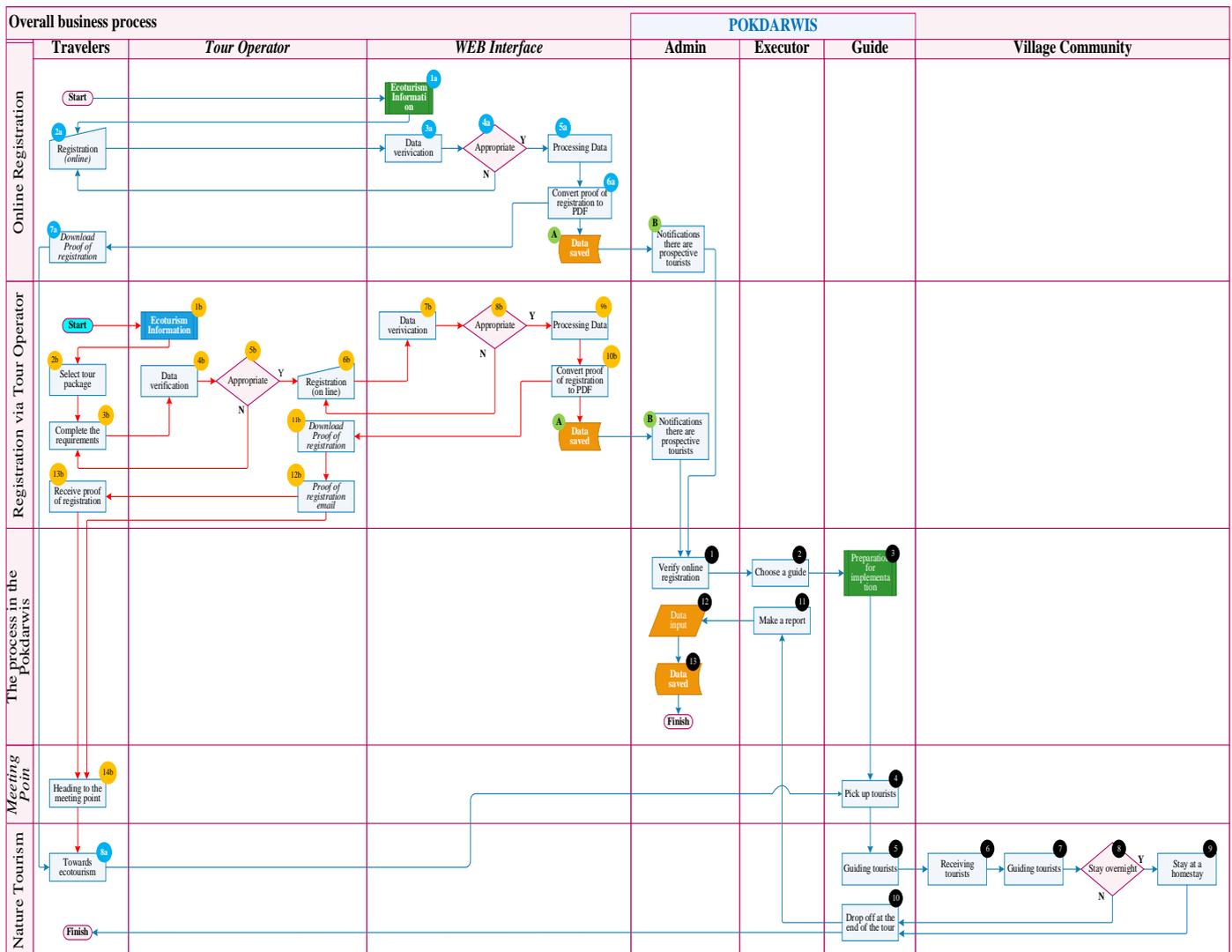| Process	This time	GAP	Proposal	Expected business process
Business process	The existing business process is still a fundamental process	There is no standard business process yet	Make a business process proposal	Having a standard business process
Registration	Manual, using the form	Requires a long time	Create a business process for registration	Register online
Data / document verification	Manual, hard copy, offline	Requires a long time	Create a business process for verification	Verification online
SOP	There is no standard SOP	The implementation has no procedure	Create SOP	Have a standard SOP

Fig. 4. Business Process Proposal.

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F. Proposed Standard Operating Procedure (SOP)

1. Registration Procedure
    a. Online registration is must be through the official website of the ecotourism Barumun which is managed by Pokdarwis.
    b. Online registration by filling out electronic forms available on the official website of the ecotourism Barumun.
    c. The required data in the electronic form are: full name, e-mail address, identification number, telephone number, home address, tourist destination and number of participants.
    d. If there is a lack of data from the one required in point c, the system cannot process the data to the next stage.
    e. Proof of registration is a copy of the registration form that has been verified and converted to PDF format, and has been given a registration number by the system.
    f. Proof of registration will be emailed to traveler.
    g. Travelers must download proof of registration that will be shown to ecotourism officers in the field.

2. Tourism Implementation Procedures
    a. The visitor, must be accompanied by a guide provided by Pokdarwis.
    b. Designated officer must perform online data verification after getting a notification from the registration system
    c. Travel executive coordinator shall provide tour guides for tourists who visit.
    d. The administration department is obliged to store data on tourist activities

IV. CONCLUSION

The results of research conducted that the initial business processes in the management of Barumun ecotourism, is a business process that is run based on the knowledge of the process owners, the business process is not a standard business process. The initial business process there are some deficiencies in the tourist registration process that still relies on Tour Operators and data verification is done repeatedly, with the presence of several stakeholders around the Barumun Wildlife Reserve area, the management of ecotourism requires a business process and Standard Operating Procedures (SOP) that can accommodate the implementation of activities in the ecotourism of Barumun, this aims to improve services to tourists visiting the ecotourism of Barumun.

Suggestions

Contrive the business processes and Standard Operating Procedures (SOP) in Barumun ecotourism with the Model-Based and Integrated Process Improvement Methodology (MIPIM), is a method suggested by researchers.

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