

# Tourism Village Management Based On Information Technology With Destination Management System

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**Abstract**— The development of technology has increased the ability of the tourism industry to increasingly develop. This is marked by the use of information and communication technology in tourism marketing. This study aims to review the implementation of the Destination Management System in Tourism Villages in Indonesia. This study uses qualitative methods and the object of this study is the Ponggok tourism village in Klaten Regency. The results show that the application of the Destination Management System in the tourism village is not optimal. The information and communication technology used is limited to social media, the web system owned by the village has not been optimized for online services.

**Keywords**— *Destination Management System, Information and Communication Technology, Tourism Village*

## I. INTRODUCTION

The development of technology has increased the ability of the tourism industry to increasingly develop. This is marked by the use of information and communication technology in tourism marketing. Currently, the ability of information technology in the world of tourism is known as e-tourism or electronic tourism. The concept of e-tourism is translated into the use of information and communication technology to improve the efficiency in the field of tourism, providing a variety of tourism services to customers in the form of telematics, and making the implementation of tourism marketing more accessible [1].

In addition to the use of computer-based internet for tourism, the role of social media is also very important in the development of tourism. Today, the role of social media is increasingly being recognized in the context of tourism, which is believed to be an information-intensive industry that relies heavily on effective communication [1]. Because tourism-related products and services are relatively inexpensive and are characterized as products with high involvement, tourists often collect and review a lot of information before traveling to help the planning and decision-making process. Opinions and recommendations shared on social media by other tourists who have previous experience with the aim of finding not only the most preferred source but also the most influential source for

potential tourists [2]. As a result, tourist destinations are not pre-arranged ontological structures, they are somewhat socially constructed, which is the result of ongoing narratives among tourists through which content, in general, continues to be reproduced and maintained on social media [3].

The impact of social media on the tourism experience can be understood by considering interactions between the media and people, resulting in interdisciplinary studies in psychology, sociology, and communication [1]. However, most studies have focused on the nature and level of use of social media for travel planning and destination selection (for example, [4]; [5]) as well as social sharing motivational factors (for example, [6]; [7]), but little is known about how social media really influences the overall tourist experience in the tourism literature [1].

At present, the demand for new information techniques has increased. With new information technology increasing over the past decade, Destination Management Systems (DMS) is very important in the world and some developed countries to reengineer their business processes, develop new business models, and utilize these new tools [8]. Destination Management Systems (DMS) can be described as the IT structure of a Destination Management Organization [9]. DMS must be able to act as an engine that allows it to be assimilated into various services and products from the tourism industry. In the field of information and communication technology (ICT), the government is currently developing an information technology infrastructure to develop a Destination Management Organization (DMO) [10]. This study explores the future of e-tourism in the Ponggok Tourism village and, specifically, the possibility of destination management systems for the Ponggok Tourism village established.

DMS should not only help pre-travel, send arrival information requests, but also assimilate availability and booking services as well [10]. DMS can increase visitor traffic, attract the right market segments by providing an accurate and up-to-date comprehensive electronic database [11]. DMS can also help create more efficient internal and external networks, which can have a long-term positive effect on the local economy in achieving competitive

advantage. DMS also supports the wide distribution of destination information online. [12] WTO (2001) has shown that several new electronic circulation channels develop through online travel agents, search directories and destination portals.

The development in the application of tourism electronics is currently engaged in updating the paradigm of integrated tourism information system management, or the Destination Management Organization (DMO). This paradigm considers the role and function of a tourist destination. DMO management is carried out in an integrated manner by government agencies, private companies, professional organizations and elements related to tourism activities. This management activity leads to the achievement of economic development and regional development balance. Based on the change in the direction of tourism development, it is important to conduct a study to see the framework, and a new paradigm pattern of tourism management in areas with a Destination Management Organization (DMO), especially in tourism villages. The Ponggok tourism village has pioneered the DMO locally, with the name "IT literate village". However, its use is only limited to ICTs for population data, monographs and village administration (E-DESA), ICTs for village budget management and finance (E-APBDES), ICTs for correspondence and permit management (E-PERIZINAN), village websites and the use of information and communication media for the community / online community (RT / RW-NET), has not yet specifically led to the development of tourist destinations, especially IT-based (DMS).

## II. METHOD

Studies conducted to review the Destination Management System (DMS) framework in the management of regional tourism or rural tourism are carried out through an exploratory approach. This approach explains a phenomenon that occurs in the community or region, in this case, the phenomenon of tourism promotion. The analysis used is qualitative. This analysis will describe the findings of the results of the literature study, and analyze the structure of information on the website and social media developed by the tourism village of Ponggok, Klaten Regency, Central Java Province, Indonesia.

## III. RESULT AND DISCUSSION

### A. Information Technology Support in the Tourism Network

The use of Information Technology creates opportunities in strengthening networks in the tourism sector. [13] Egger (2008) argues that internet media is the most important information center in planning a tour. This virtual network creates an economic value chain that is connected between one interest and other interests within

the framework of the tourism industry. Information technology support is further seen by the availability of e-tourism. E-tourism is defined by [12] as "A tourism network system is the one that comprises a multiplicity of autonomous, interdependent, enterprises without physical borders of separation from the environment, that relies on the Internet infrastructure to integrate and exchange value". This definition provides a limit on an open tourism network system with all independence to the diversity that refers to information technology infrastructure and integrated with values. This concept is further clarified by [14], that e-tourism is seen as a form of utilizing information and communication technology to improve the usability in the field of tourism, providing various tourism services to customers in the form of telematics, and making the implementation of tourism marketing more accessible.

E-tourism as a unified system of Destination Management Systems (DMS). UNCTAD (2005b) provides an understanding that Destination Management Systems (DMS) are strategic ICT tools that can help operators and tourism enterprises in developing countries integrate, promote and distribute tourism products and services. DMS as a system will be interdependent with other components so that DMS is an inseparable unity between information and communication technology (ICT), tourism, business, and government. These four units strengthen one another. The development of Destination Management Systems for the Ponggok tourism village will be studied in this paper. The paradigm shift of tourism management is based on the absence of a sustainable system that forms each element in tourism management. The discussion of this study will explain the concept of DMS to develop sustainable tourism, especially in tourism villages.

### B. Tourism in the Ponggok Tourism Village

Tourism in the Ponggok village is one of the areas whose development the Ponggok government has prioritized. One of the village funds allocated by the government is used for the development of Tirta Mandiri Village Owned Enterprises (BUMDes) whose task is to manage natural resource potentials as a tourism destination and the development of a tourism village. Tirta Mandiri BUMDes in Ponggok Village currently manages Umbul Ponggok tours, Umbul Capilaler, UMKM Development, Village Stores, Umbul Ciblon, fisheries cultivation, and village studies. Based on existing data in Ponggok Village, since 2013 Desa Ponggok revenue reached Rp 211 million, rising to Rp 1.1 billion in 2014 and 2016 jumping to Rp 10.3 billion. Then in 2017, it will be Rp. 14.2 billion. This increase in income has an impact on the increase in Village Original Revenues, in 2013 the contribution to Village PAD was Rp. 80 million, but in 2017 it increased to Rp. 1.29 billion (BUMDes Report, 2018). Based on these data since 2013 the percentage of revenue growth increased dramatically to 40.67%, then increased to 421.33% in 2014 and 454.55% in 2015, but the percentage of growth has decreased to 68.85% in 2016 and 37.86% in 2017.

Moving on from studies in the village of Ponggok, to maximize the existing potential, and innovative model is needed, one of which is in the form of tourism village management through a Village-Owned Enterprise. In this paper, Village-Owned Enterprises are projected to be the center of rural community economic empowerment based on village potentials, ranging from mapping village potentials, training on village potential management to digitizing rural economies aimed at marketing managed potentials. Besides, the tourism village management model through BUMDes will work well if synergized with the community, academics, government, media and the private sector within the framework of the Penta helix concept as developed by the Ministry of Tourism of the Republic of Indonesia.

#### C. Application of DMS in ICT-Based Tourism Marketing

In line with the idea of the Ponggok village government becoming an IT literate village, the application of the DMS in tourism marketing in the Ponggok-based ICT tourism village covers four fields, namely information and communication technology (ICT), tourism, business, and government.

#### D. Information and communication technology

ICTs are used for the use of technology and the application of systems in the delivery of information needed by consumers in the field of tourism services in the village of Ponggok. ICTs include information systems, information technology, and telecommunications.

##### 1.) Information Systems

The system installed on the page can allow consumers to get information and reservations such as hotels, tourist attractions, shops, airplanes, travel, or providing online tour packages that are presented in full. This is useful to provide comfort and convenience for consumers to access. In the village of Ponggok, the information system developed was not yet fully directed towards tourism services. For tourism services, the information system that was developed was limited to the web, not yet providing online services, such as homestay reservations, tourist tickets, transportation tickets, and online tour packages. This is due to the still limited human resources to manage the information system, so that management still uses limited media.

##### 2.) Information Technology

The information presented can be in the form of text data, images and can be equipped with voice and video data in the form of computer networks to access information. As in the information system, the information technology developed by Ponggok village is still in the development of technology for village administration and population services, which has not yet touched the tourism aspect.

##### 3.) Communication

To bring in more tourists and Ponggok village investors use social media to interact or Two-Way Communication, namely using Facebook, Instagram, WhatsApp. The effectiveness of the use of social media by the village of Ponggok is very successful in bringing

tourists, this can be seen from the surge in the income of the ponggok village from 2014 to 2017.

#### E. Tourism

Tourism in the DMS is defined as a service business that serves the needs of a person or group traveling to a tourist destination, so it must meet such as Transportation, Accommodation, Tourist Attractions, and Attractions, Entertainment Facilities, and Souvenirs.

##### 1.) Transportation

The availability of this element is very important. The availability of transportation elements can help visitors get clear information about what transportation options can be used to reach tourist destination areas. Classification of types of transportation (land, sea (river), and air) complete with supply agents must be presented. For trips to tourist destinations in the village of Ponggok land transportation routes are the only access that can be reached. However, the quality of the road is good enough to be traversed by land transportation, such as buses or private vehicles and the distance from the city of Klaten is also quite close so there are no problems to access. It's just that the location for parking buses and private vehicles is inadequate for certain tourist attractions such as in Ponggok pennant, due to the narrowness of land for parking.

##### 2.) Accommodation

As a form of comfort facilities for lodging or living during tourism activities. On the page information about hotel classification with good classification can be presented, and clearly about the availability of hotel/lodging facilities in question, along with prices or other services. Places to stay in the tourist village pennant ponggok is quite adequate, because there are already many homestays around the attractions. However, it has not been informed online on the system, because it has not yet developed integrated technology and information systems to provide tourism services in the village of Ponggok. The homestay owner in Ponggok has not been well organized, both from the management of the homestay and the integration by the system, so each owner markets his homestay individually.

##### 3.) Tourist Attractions and Attractions,

Providing more detailed information with the classification of types of attractions such as pennant, agriculture, animal husbandry, village studies and others in the village of Ponggok are well organized. However, the concentration of income from tourism in the village of Ponggok currently still comes from Umbul Ponggok, reaching 80%, while other objects are still in the process of development. But the direction of development is getting better, this can be seen that more and more tourists are choosing village study packages and more tourists are also in Umbul Sigedang. The attraction that is featured in the village of Ponggok is still underwater selfie that is in Umbul Ponggok. Other attractions are still in the planning stages, such as outbound arena, mini zoo, jogging track, rafting.

##### 4.) Souvenir

This element provides a special attraction for visitors, especially Ponggok tourism village is known as a pioneer underwater selfie-and fish farming center. Souvenirs can be given in the form of photos under tourist attractions underwater and various snacks from fish raw materials. On web pages, this must be displayed to attract the attention of web visitors.

#### F. Business

Business is an organizational unit that manages service sellers (tourism) to consumers or other businesses. In DMS, business covers aspects of marketing management and finance.

##### 1.) Marketing Management

Marketing management is the key to be able to compete to attract visitors. Tourism marketing is not enough just to rely on the natural attractive beauty, but rather how the manager efficiently and effectively packages all the tourism potential into an attractive package. In every promotion, the manager of web pages / social media must be able to convince the public so they can be interested and enthusiastic. Through the information on the page, potential tourists must get directions, ranging from travel routes, locations that can be visited, hotel information, places to shop, to other factors needed such as visiting tips. Marketing management in Ponggok is currently more focused on social media such as Facebook and Instagram, but it still relies on free/unpaid posts, so the results are less than optimal. In addition to social media in marketing tourism objects, Ponggok village cooperates with the media, tourism community and local government in marketing tourist destinations in Ponggok.

##### 2.) Finance

Finance is intended as the ability to increase, allocate, and use monetary resources over time, and also to calculate risks in carrying out ICT-based marketing. Management financing is a factor in providing accurate information because with the continuity of financing, management activities can be maximized. The management of ICTs especially in tourism requires very strong finances. Financial management in Ponggok has been computerized but has not been connected with integrated tourism services, for example, the ticket section of tourism objects. This needs to be improved so that the transparency and accountability of Ponggok village are getting better.

#### G. Government

DMS simplifies governance practices by using ICTs for the management, promotion, and introduction of tourism, especially to the outside world. This concept provides online services and government operations functions. There are four elements in this component, namely: function, orientation, accessibility, and structure presentation.

1) Function, IT Literacy Village can be directed with a page function that focuses on the marketing potential of tourism potential and the expansion of information and investment on tourism Ponggok tourism village in the global network through the internet.

- 2) Orientation, IT Literacy Village is oriented towards economic development and increased investment, by promoting tourism potential as a whole and equipped with investment potential. This can be presented from the information provided on the page that contains attractions, regional culture, activity agenda, and supporting information. This information can increase the attractiveness of tourists.
- 3) Accessibility, page network integration must be at an external (global) and internal stage. This can minimize the indication of a stepping stage, namely that the network has been globally integrated externally through the internet media, but internally it has not been fully integrated with the network (off-line).
- 4) Presentation Structure is the presentation of information to customers in the portal including Brand visualization, type of data, and language. Brand visualization, the information presented must explicitly and directly display the Ponggok village brand, both in writing and in pictures. Types of data, there are three types of data that can be used, namely text data, that is data in the form of sentences or numbers that describe a particular information, image data, that is data in the form of photos or images to explain the shape of an object from textual data, and map data, that is data about the location of a spatial object which is marketed from textual data. Therefore, the information submitted is less than optimal. Language, existing pages can later use Indonesian and English.

#### IV. CONCLUSION

DMS can be applied in the development of tourism marketing in the ICT-based Ponggok tourism village to support future targets. This can be utilized when considering the elements that are a prerequisite, namely ICT, tourism, business, and government are met. ICT elements include information systems, information and communication technology. Tourism elements include transportation, accommodation, attractions and attractions, entertainment facilities, and souvenirs. Business elements include marketing and financial management, while government elements include functions, orientation, accessibility, and presentation of structure. DMS provides opportunities for the use of ICT-based marketing through pages (websites) by paying attention to display pages, completing language and information facilities, and increasing the level of interaction in communicating with customers. Field observations show that DMS in Ponggok village needs to be redeveloped, especially in the management of websites, online services (e-transactions), bandwidth availability and wifi. This study is preliminary so that further studies are needed that lead to opportunities for the feasibility of e-tourism (the use of ICT in tourism) as a derivative of DMS for marketing tourism objects in Ponggok village.

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