

## INNOVATION ENGINEERING AND TECHNOPRENEURSHIP FOR PROMOTION OF WEST JAVA TOURISM VILLAGE DESTINATIONS

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**Abstract** – Several tourist villages in West Java Province received the 2023 Indonesian Tourism Village Award (ADWI) from the Ministry of Tourism and Creative Economy of the Republic of Indonesia. This is a consideration and needs further development, especially in promotion and potential as a tourist village destination so that it attracts more tourists to visit. The current problem is related to the lack of business and technological innovation engineering efforts to encourage increased promotion and potential of tourist villages through the small and medium enterprises sector in the tourism sector. This study aims to develop an engineering innovation and technopreneurship for promotion, and potential for tourist villages in West Java Province. Business innovation engineering by analyzing business models and developing promotional websites and potential as an effort to engineer technological innovation. This applied research uses descriptive methods with a qualitative approach. The results of the innovation engineering in this research are the development of a promotional information system and potential web-based tourist village destinations for West Java Province. It is hoped that the results of this study will contribute in line with government programs in increasing sectoral economic growth, specifically in West Java Province.

**Keywords:** Innovation Engineering, Promotion and Potential; Tourism Village Destinations; Web Based Information System; West Java

### I. INTRODUCTION

Tourism as a driver of the economic sector can be a solution for the government to increase sectoral economic growth. The tourism sector's economic groups can reach the lower classes in rural areas. The development of tourist villages has implications for providing services in remote locations, supporting rural economic growth, providing access to training and job creation, and preserving culture and the environment within the framework of achieving sustainable development goals (Angga Holman & Mahardhika, 2022). A Study from Pranoto et al. (2023) emphasizes that rural tourism is carried out in several villages to contribute to achieving sustainable development goals (SDGs). The policy direction in the 2020-2024 RPJMN also focuses on sustainable and environmentally friendly development and is in line with achieving sustainable development in all sectors, including tourism (BPK-RI, 2020). Furthermore, the regulations that serve as a reference for the central

government, regional governments, and other stakeholders in developing sustainable tourism destinations are contained in the Minister of Tourism and Creative Economy Regulation No. 9 of 2021 concerning Guidelines for Sustainable Tourism Destinations (BPK-RI, 2021).

The diversity of Indonesia's tourism potential includes rural landscape-based tourism. Tourist villages have their appeal as a destination that can trigger improvement and turn around the economic situation, especially for the government and society (Nyompa et al., 2023). Tourist villages are assets that still need to be honed, one of which is through training by the government and the private sector to create prosperity for the tourist village community so that they can become a mainstay of regional tourism. (Inzana et al., 2021). According to Itah Masitah (2019), Tourist villages are usually developed in rural areas and have special characteristics. The characteristics of tourist villages are pristine natural resources, village uniqueness, traditions, and culture of the local community. In this study, seven tourist villages in West Java were used to receive the 2023 Indonesian Tourism Village Award (ADWI) from the Indonesian Ministry of Tourism and Creative Economy (Kemenparekraf, abbreviated in Indonesia) (Hiidayat, 2023). The seven villages are

- (1) Taraju Tourism Village (Tasikmalaya District, West Java),
- (2) Bantaragung Tourism Village (Majalengka District, West Java),
- (3) Selamatik Tourism Village (Ciamis District, West Java),
- (4) Baros Tourism Village (Bandung Regency, West Java),
- (5) Cibeuhi Tourism Village (Subang Regency, West Java),
- (6) Purwabakti Tourism Village (Bogor Regency, West Java), and
- (7) Astana Religious Tourism Village Cirebon District, West Java).

Currently, there is a lack of promotion of the potential of tourist villages using information technology. Tourists have difficulty getting information on tourist destinations, there is a lack of online services such as centralized platforms that integrate ticket reservations and destination information. Tourists often face problems when booking tickets conventionally, the process is slow, inefficient, limited to operational hours, and has limited payment method options. This problem is experienced by seven tourist villages in West Java as already mentioned.

Innovation Engineering is currently being carried out widely by several MSMEs in society (Sari, 2023). Innovation Engineering is a framework for engineering solutions with innovation and new emerging technologies. This framework is practical for anyone interested in finding innovative new approaches to problems. Innovation Engineering includes business innovation engineering and technology engineering. Various efforts by entrepreneurs, especially MSMEs, to carry out business innovation engineering include creating business model innovations, business innovations for marketing, and competitor analysis. Meanwhile, technological innovation is carried out by developing information technology that can support business. Technopreneurship can be interpreted as entrepreneurship whose business activities are based on technology (Hamid, 2013). Technopreneurship is an effort that MSMEs must have in improving their business. In this study, problem solving is done by engineering innovation and technopreneurship as an effort to increase the promotion and potential of tourist villages.

An Information System is a structured set of procedures and components designed to collect (retrieve), process, store and disseminate relevant information in an organization or certain context. Information systems aim to assist decisions for making data management and support business operations and processes (Ali et al., 2023). Tourism promotion is an effective way for activity for a government agency to introduce the tourism potential of a city or village. According to Kusmiati (2020), Promotion is the activity of conveying information about a product (goods or services), usually carried out in a persuasive way to the audience, with the aim of not only informing but also persuading the audience to give a positive response. Promoting tourist villages as tourist destinations to tourists by offering village holiday experiences. According to Heryati (2019), Tourism potential is everything in good condition that is real and cannot be touched, which is worked on,

arranged, and provided in such a way that it can be useful, or utilized, realized as the capabilities of factors and elements that are needed or determine the development of tourism, whether in the form of atmosphere, events, objects or service or services. Tourism potential in a village refers to all natural attractions, culture, attractions, and other unique elements that can attract the attention of tourists. This potential covers various aspects, including natural beauty, cultural heritage, local traditions, handicrafts, recreational activities, and interaction with residents. Village tourism potential is an asset that develops the tourism sector in the region and provides important economic, social, and environmental impacts for local communities (Gautama et al., 2020). Tourism village tourism destinations have the potential to be the right choice for tourists. By using a web-based information system, tourist villages can maximize the promotion of their tourism potential, attract more tourists, and increase the income of local communities. Effective promotions will help tourists understand the advantages offered and have a memorable holiday experience.

Previous studies related to tourism service businesses have been carried out by several researchers. According to the study of Sihombing et al. (2021), in efforts to develop and improve tourist attraction visiting services to make it easier for tourists to visit tourist attractions. Thus, it can visit service improvement by creating an application system. Another study from Indahsari et al. (2022), aims to design and build a web-based information system for tour and travel services at PT Innes Arsen Wisata. The results can improve the company's performance in providing services and make it easier for consumers to access information and order the products offered.

This study, the emphasis is on Innovation Engineering and Technopreneurship of Tourism Services Businesses on promotional services businesses and the potential of web-based tourist villages, which can be accessed easily via smartphones connected to the internet. With innovation, engineering, and technopreneurship in tourism services businesses, prospective tourists can improve services by shortening the time spent searching for information and buying tourist tickets.

This study aims to develop an engineering innovation and technopreneurship for promotion, and potential for tourist villages in West Java Province. The specific targets or objectives to be achieved in this research are:

- 1) Carry out business innovation engineering to promote the potential of tourist villages.
- 2) Carry out technological innovation engineering to promote the potential of tourist villages,
- 3) Developing technopreneur-ship through a web-based information system for promotional services for tourism village potential in West Java

Research by developing technopreneur-ship through a web-based information system for web-based tourism village potential promotion services in West Java, which is a novelty produced in this study. The results of this study will contribute in line with government programs in increasing sectoral economic growth, specifically in West Java Province.

## II. METHODS

The type of research carried out in this study is applied research. Applied research is research aimed at finding a solution to a problem that exists in society, industry, government as a continuation of basic research. Applied Research is a research model that is more directed at creating innovation and developing science and technology.

### 2.1 Data Collection

The methodology used in the data collection stage in research related to the design of a promotional information system for the potential of this tourist village destination and its development through a web-based information system includes: Literature Study, Observation, Interviews, and

Documentation (Creswell & Creswell, 2023). Through this literature study, researchers obtained data sources from books and journals related to literature studies, books, or references related to designing information systems for the promotion of potential web-based tourist village destinations.

## 2.2 Data Analysis

This Business Innovation Analysis includes an analysis of the canvas business model (Hutasuhut et al., 2020), marketing analysis with the STP concept (Kampamba, 2015), Competitor Analysis (Fong, 2014). This also needs to be done, including analyzing competitor websites. Meanwhile, for system analysis and design, the Unified Modeling Language is used. UML is a collection of diagrams for specifying various aspects such as requirements and design of software systems (Setiaji & Sastra, 2019).

## III. RESULTS AND DISCUSSION

### 3.1 Business Description Analysis Results

Innovation Engineering and Technopreneurship in the website-based "DeWa" tourism service business refers to the use of technology and innovation to develop tourism services efficiently. Through the website platform, "DeWa" provides easy access for tourists to find complete information about tourist destinations, purchase tourist tickets, and information on activities offered on a website basis so that they can be accessed anytime and anywhere. The technopreneurship approach allows "DeWa" to identify and exploit new business opportunities in the tourism industry by utilizing technological innovation. "DeWa" can expand its market reach through the use of technology in the development and provision of tourism services.

Business vision for the leading tourist ticket purchasing service provider in Indonesia by offering convenience and the best tourism experience through web-based technology. The missions that will be carried out in the Innovation Engineering and Technopreneurship of this Website-based Tourism Services Business include:

- 1) Helping tourists buy tickets to tourist attractions easily and quickly via the website,
- 2) Develop tourism services to increase efficiency and customer comfort,
- 3) Providing accurate information and safe transactions in purchasing tourist tickets.

### 3.2. Business Innovation Engineering Results

Business Model Canvas is an abstract concept of a business model that represents business strategies and processes (Hutasuhut et al., 2020). The essence of applying Business Model Canvas is making a business plan. The business plan is summarized in 9 blocks. Based on the canvas, a more detailed business plan has been prepared. Business Model Canvas has shown in Image 1.

This Canvas Business Model is a model used to describe the design for the Website-based "DeWa" Tourism Potential and Promotion Services Business.



Image 1. Business Model Canvas for a Tourism Service Business

### 3.3. Technological Innovation Engineering Results

Use Case Diagram is a modeling for the behavior of the information system that will be created. Use Case Diagram is used to find out what functions are in the system and who has the right to use these functions. The use case diagram for this Tourism Services Business design involves 2 website user actors, including tourists and system administrators.

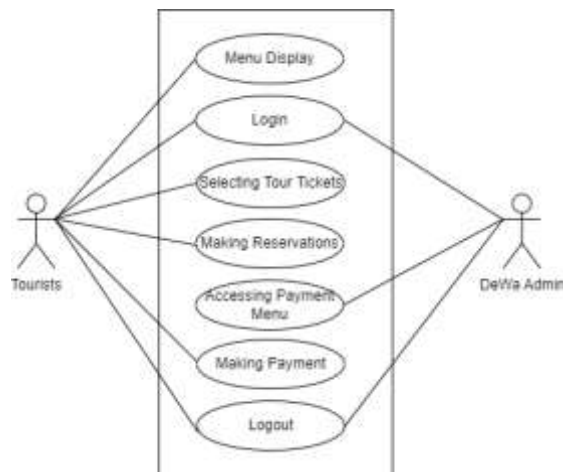


Image 2. Use Case Diagram for a Tourism Service Business

An Activity Diagram or Activity Diagram is a description of the work flow or activities of a system or business process or menu in the software. The Activity Diagram depicts system activities in the Website-based Tourism Potential and Promotion Services Business "DeWa".

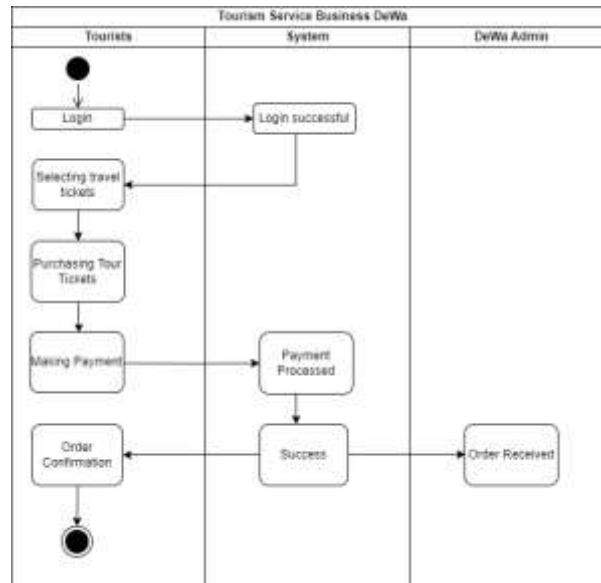


Image 3. Activity Diagram for a Tourism Service Business

Entity Relationship Diagram or ERD is a diagram in the form of graphic notation that is used in creating a database that connects one data to another. The following is the DeWa website database design,

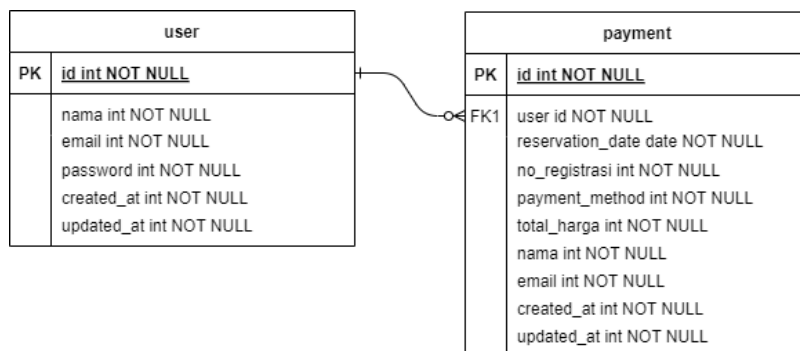


Image 4. Entity Relationship Diagram for a Tourism Service Business

### 3.4 Technopreneurship Development Results Innovation Engineering Results

Interface design (user interface) functions to communicate the available system features so that users understand and can use the system, and have satisfaction and comfort values in using the website. The following is the DeWa website interface design:



Image 5. DeWa website interface design

### 1. User Login Page

Login page to allow users to log in to the account using valid credentials (email/username and password).



Image 6. Login Interface Design of the DeWa Website

### 2. Tourist Village Destinations Page

On this page, information about tourist villages is explained in full, including important information that will attract the attention of potential tourists.



Image 7. Design of Information about tourist villages



Image 8. Information about the facilities of the tourist villages

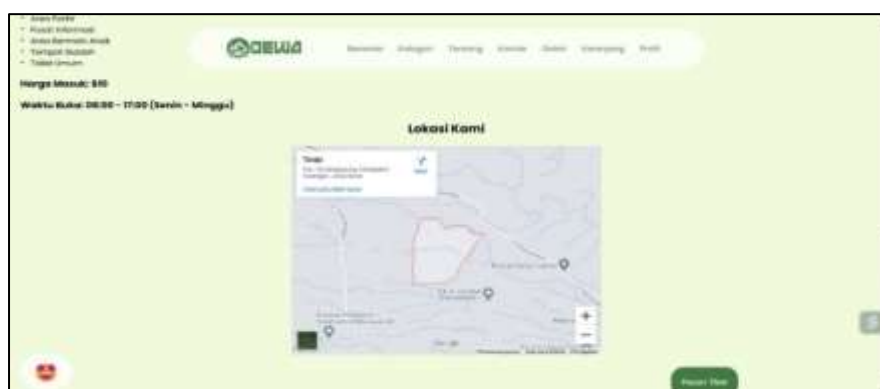


Image 9. Information about the location of the tourist villages.

### 3.5 Discussion



This research has developed a web-based promotional information system which aims to increase the attraction and visits to tourist villages in West Java Province. The results show that web technology can facilitate access to information and promotion of tourist villages, attract more tourists, and support the sustainability of tourism businesses. These findings indicate that web-based information systems have the potential to increase the number of visitors to tourist villages. This happens because the web platform provides easy access to complete and accurate information about tourist destinations, including facilities, attractions, events and reviews from previous visitors. These features are very important for tourists in planning their trip. In addition, the ability to make reservations and purchase tickets online simplifies the travel process and increases traveler comfort.

These findings have significant practical implications for tourism village managers in West Java Province. The development and implementation of a web-based information system can be an effective strategy for increasing the profile of tourist villages, attracting more visitors, and ultimately increasing local income. Tourism village managers need to ensure that the information presented on the website is always up-to-date, interesting and easy to access. In addition, the integration of online reservation features and visitor reviews can increase tourist trust and comfort.

Future research on information systems could use geographic information systems and AI technology.

#### **IV. CONCLUSION**

In summary, the results of the innovation engineering in this research are the development of a promotional information system and potential web-based tourist village destinations for West Java Province.

The business engineering results show that this service business has good prospects for development by looking at the value proposition of the business model canvas that has been created and is ready to compete innovatively with its competitors.

The results of technological innovation engineering show that the development of a promotional information system and potential web-based tourist village destinations for West Java Province supports the increase in tourists visiting tourist villages with the convenience of the technology that supports it.

The results of the development of technopreneur-ship through a web-based information system for tourism village potential promotion service businesses state that this service business is very supportive of realizing technopreneur-ship for MSMEs.

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