



Strategic Planning of Morotai Tourism Village Information System (SIDEWITA) Using Ward and Peppard Method

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Abstract

This study explores how digital literacy in Indonesia has stimulated the development of a website-based information system used for digital marketing. The Morotai Island district, identified as a priority tourism destination, has been optimized as a superior product with the help of communication technology infrastructure and internet networks based on the innovative city concept. This optimization has triggered collaboration among individuals, communities, and stakeholders in the tourism sector, resulting in superior tourism products in each destination. To facilitate collaboration, the Morotai Tourism Village Information System (SIDEWITA) is proposed to connect individual, community, and stakeholder interests. This study applies the Ward and Peppard framework, including Value Chain Analysis, PEST, SWOT, and McFarlan Strategic Grid, to analyze internal and external conditions for SIDEWITA's strategic planning.

Keywords: Information System, Tourism Village, Tourism, Morotai, SIDEWITA

1. INTRODUCTION

The challenge of tourism development in Morotai Island Regency is the support of communication technology infrastructure and internet networks and the participation and adaptation of local communities to face various dynamics since Morotai was designated as a Special Economic Zone (SEZ) and a National Priority Tourism Destination (DPN). With the trend of developing tourism villages in Indonesia, the synergy of stakeholders in various collaborative models is needed to accelerate economic growth and improve social welfare, maintain cultural values and local wisdom, and maintain ecosystem sustainability through ecotourism. This research offers innovative ideas by designing a tourist village information system. Thus, Morotai Island Regency can adjust the acceleration of national economic growth.



Developing a tourist village is one of the practical approaches to improving the economy, maintaining the sustainability of local social and cultural values, and preserving the environment. [1] shows that the development of tourism villages can be adjusted to the pattern of social interaction and local cultural values so that the programs are set by the needs and provide opportunities for local communities to participate in each development program. On the other hand, [2] Community participation in developing tourism villages plays an essential role in supporting the sustainability of tourism villages. This shows that each tourism village concept is contextual and effectively grown through a participatory approach. Thus, creating a tourist village needs to be adapted to the local sociocultural context and involve various stakeholders.

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The study of the information system of tourism villages in Indonesia needs to be developed to facilitate access to tourist information so that it becomes a consideration in making decisions to travel. [3] shows that one of the information systems for tourist village homestays is one of the systems needed to optimize tourist accommodation services. Moreover, [4] shows the importance of a tourism village accounting information system to make financial reports on tourism village management. This shows that the tourist village information system can be specifically designed according to the needs of the actor's characteristics as a system user. Thus, it can be known that the process of identifying the needs and classification of system users will be a determinant factor in the functions and features of the system.

The development of studies on tourism village information systems shows tourists need that information about tourism as a clue about superior products, the potential developed, and the activities tourists can do when visiting a destination. On the other hand, [5] shows that the quality of information on the tourism village website can accommodate the needs of tourists and influence the decision-making process to visit the tourism village, [6] shows that optimal information management can adapt to changing traveler preferences so that they become adaptive to respond to traveler demands. This indicates that the quality of

information needs to be maintained according to the needs of tourists. Thus, information about attractions, amenities, and accessibility needs to be optimized through SIDEWITA.

Previous studies have shown that website-based information systems are used as digital marketing media to promote superior products in villages and act as a digital literacy forum for local communities who actively participate as information managers. [7] indicates that the website strengthens village branding, showing that superior products are competitive. On the other hand, [8] shows that website-based digital marketing media is needed to market village Small and Medium Enterprises (SMEs) products and some information related to the potential and activities held in the village. This shows the level of public acceptance of technology and an adaptive attitude to respond to the development of digital technology as an effective marketing medium. Thus, the design of website-based SIDEWITA becomes relevant in the context of optimizing tourism village management which also markets the potential tourism events in Morotai Island Regency.

The development of a tourism village website, in addition to optimizing marketing efforts for the potential and superior products of the village to reach a broader market, can also be used as a medium to maximize governance at the village level. [9] shows that using websites as a digital marketing medium is a form of governance adjustment of conventional processes. Moreover, [10] shows that the superior potential of the village needs to be published online to have a selling point that attracts consumers, especially the tourism potential in the town that needs to be marketed on the website to attract tourist visits. This shows that a website-based information system can optimize village government governance while selling the village's potential. Thus, a strategic planning framework is needed to optimize organizational performance by designing information systems relevant to the user and contextual needs.

One of the strategic planning frameworks used to design SIDEWITA is Ward and Peppard. Based on previous studies, the Ward and Peppard framework can create a Mangrove Ecotourism Management Information System (SIMANGROVE) by considering the value chain of the mangrove ecotourism business ecosystem [11]. In addition, the Ward and Peppard framework is also used to design a Regional Tourism Information System (SIPARDA) that accommodates the interests of the tourism office in managing information related to attractions, amenities, accessibility, and ancillary in a tourism destination. [12]. This shows that the Ward and Peppard framework has the advantage of value chain analysis of digital businesses and development strategies based on priorities through strategic planning of information systems. Thus, it can be known that the development of strategic systems, high potential, operational keys, and support.

2. METHODS

This research is divided into several stages: data collection, interview techniques, observation, and document study; the data processing and analysis stage follows the Ward and Peppard framework. The output of this study is the SIDEWITA development recommendations which are classified based on the level of importance such as strategic, high potential, operational key, and support. Meanwhile, this stage of research can be seen in the following figure.



Figure 1. Stages of Research

Figure 1 is a research stage in the strategic planning of the Morotai Tourism Village Information System (SIDEWITA) in this study, using the Ward and Peppard framework. The study of strategic planning of information systems using Ward and Peppard shows that the advantage of the Ward and Peppard framework is a study that considers the internal and external conditions of the system [13]. On the other hand, [14] shows that the stages in the Ward and Peppard framework are as follows: first, automation of various information management processes for efficiency; second, increasing the effectiveness in information processing in decision making; Third, increase competitiveness and competitive advantage through business process innovation. This shows that strategic planning within the Ward and Peppard framework emphasizes the efficiency and effectiveness of systems based on business innovation using information systems relevant to business processes and organizational/company characteristics. Considering this, the design of SIDEWITA in this study used the Ward and Peppard framework. Meanwhile, the Ward and Peppard framework can be seen in the following figure.

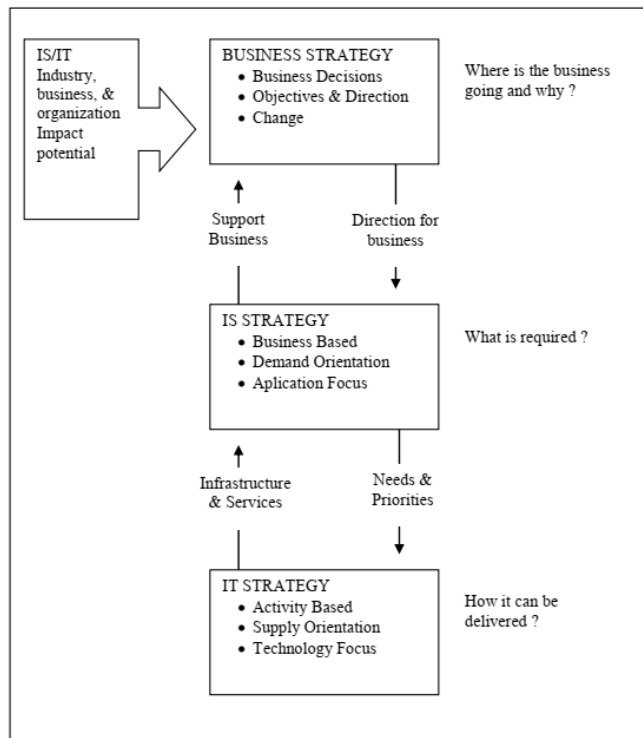


Figure 2. Ward and Peppard Framework

Figure 2 shows that the Ward and Peppard framework considers the following: first, a business strategy that is tailored to the pattern of business decision-making, the goals and direction of the organization/company in running a business, as well as business innovation; second, an information system strategy developed based on business interests, demand-oriented, and application-focused; Third, an information technology strategy developed based on activity, supply orientation, and a focus on technology. These three things focus on the direction of business development and the technical support needed. [15] shows that the advantage of the Ward and Peppard framework is the analysis of the external and internal conditions of the business that are aligned with the system's design. In the context of tourism, [16] uses the Ward and Peppard framework in strategic planning for tourism transportation information systems by analyzing the company's internals using Porter's value chain analysis approach. In contrast, the company's external analysis uses the PEST analysis approach. This suggests that the Ward and Peppard framework considers internal and external conditions in system design. Thus, the development of information systems can be carried out by considering the supply and demand of system users. On the other hand, the Ward and Peppard information system model can be seen in the following figure.

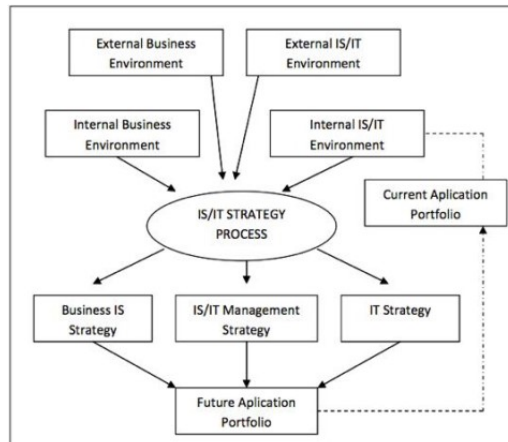


Figure 3. Ward and Peppard Information System Model

Figure 3 is a strategic information system model constructed by Ward and Peppard, considering internal and external conditions to optimize organizational/company performance. [17] shows that information system strategic planning results can recommend innovation programs the organization/company needs to achieve long-term goals and support short-term business operations. On the other hand, [18] shows that the Ward and Peppard method is used in strategic planning to manage constraints that can potentially hinder the company's operations. This shows that internal and external analysis of organizations/companies can use the McFarlan Strategy Grid approach, Value Chain Analysis, Politic Economy Social Technology (PEST), and Strength, Weakness, Opportunity Threat (SWOT). Thus, the Ward and Peppard framework can identify needs and establish business development strategies through SIDEWITA in Morotai Island Regency.

3. RESULTS AND DISCUSSION

The discussion in this study consists of four primary topics as follows: first, the existing condition of Morotai Island tourism which explains the development of information technology infrastructure and internet communication networks; second, PEST, SWOT, and Value Chain Analysis as an internal and external analysis, of the business; third, McFarlan Strategy Grid and SIDEWITA as internal and external analysis of SI/IT.

3.1 Existing Conditions of Morotai Island Tourism

Since 2019, Morotai Island Regency has been designated as one of the ten national priority tourism destinations and has become a Special Economic Zone (SEZ). In its development, the government encourages the development of technological

infrastructure, communication networks, and the internet to support social and economic activities on Morotai Island. [19] shows that the Indonesian government is trying to build wireless communication infrastructure facilities and infrastructure in the 3T (Disadvantaged, Frontier, Outermost) regions in stages. On the other hand, [20] shows that with the development of technological infrastructure, assistance in adapting technology and its use is needed for local communities through educational institutions. This shows that digital literacy is essential in encouraging people's economic growth in Morotai. Thus, it is necessary to develop an information system relevant to the needs of organizations/companies to promote the development of digital literacy in the Morotai Island Regency.

The characteristics of tourist attractions in Morotai Island Regency are very diverse and distributed in each community settlement area (village), so it has the potential to be developed into a tourist village. [21] shows that the development of tourist villages is more effectively implemented to increase community participation in tourism development. Meanwhile, local communities can enjoy the economic benefits of tourism development programs [22]. This shows an opportunity to establish a tourism village development program on Morotai Island. In addition, the location of tourist attractions in Morotai Island Regency is close to community settlements, as shown in the following map of the distribution of tourist attractions.

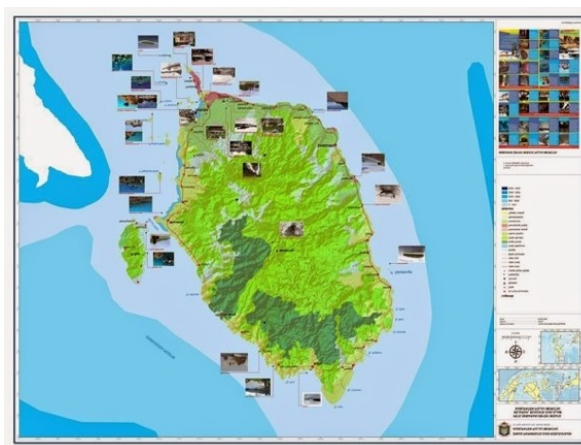


Figure 4. Map of Distribution of Tourist Attractions of Morotai Island Regency

Figure 4 shows the distribution of tourist attractions in Morotai Island Regency. Local people can develop the diversity of natural and cultural resources into tourist attractions. Furthermore, information technology support is needed to attract tourists visits to Morotai. [23] shows that e-WOM (electronic Word of Mouth) is essential in increasing the intention of visits to Morotai. On the other hand, [23] indicates that Morotai tourism destination marketing has adopted an integrated

marketing communication strategy. This suggests that the development of marketing strategies for tourist destinations on Morotai Island has begun to adapt to digital media. Thus, a website-based information system is needed that supports the marketing of tourism destinations.

A participatory approach to tourism development can trigger the involvement of the people of Morotai Island. Therefore tourism villages are one of the approaches relevant to the context of communal communities. In the context of the Morotai people, a tradition contains elements of togetherness; the dance is known as *Tokuwela* [24]. In the context of Galela society, the *Tokuwela* tradition emphasizes a sense of community, although there are sacred values in the dance practice—field[25]. In addition, a tradition of mutual help is known as "*Babari*." This shows that the rules of the Morotai people emphasize a sense of community and mutual benefit. A participatory approach in tourism development becomes relevant to maintain the social ties of the Morotai community. Thus, a system is needed to support the synergy of Morotai Island's people in tourism development.

Morotai Island has the potential for natural and cultural resources that can be optimized as a tourist attraction. In addition, human resources are also improved through formal and informal education Fields [26]. On the other hand, [27] shows that the local government is trying to develop the potential of natural and cultural resources on Morotai Island into a tourist attraction. [28] shows that tourism investment in Morotai accelerates the improvement of the local economy. This shows the commitment of various parties to jointly develop the tourism sector on Morotai Island. Thus, it can be known that optimizing the tourism sector on Morotai Island is a joint commitment of the community, government, and entrepreneurs. Considering the opportunity to develop an information system relevant to the socio-cultural context of the Morotai community, the Tourism Village Information System (SIDEWITA) is designed according to the needs of system users. SIDEWITA is a digital platform that can market tourist attractions in each village of the Morotai Island Regency administrative area and connect each individual, community, and stakeholder to jointly maintain a safe and comfortable atmosphere as one of the national priority tourist destinations.

3.2 PEST, SWOT, and Value Chain Analysis of SIDEWITA

Value chain analysis is needed to identify the main activities and supporting activities of organizations/companies that operationalize the Morotai Tourism Village Information System (SIDEWITA). In the context of this study, the management of SIDEWITA can be handled by local governments through the Tourism Office, village governments that develop the potential of villages as tourist attractions according to the concept of tourist villages, Tourism Awareness Groups (*Pokdarwis*) in tourist villages, and tourism study centers at universities. In an institutional context, value chain analysis, SWOT, and PEST can be used to

analyze SIDEWITA's development prospects in the long term. However, the main focus of this study emphasizes primary activities and supporting activities in the context of information systems, namely SIDEWITA for short-term programs, as shown in figure 5 below.

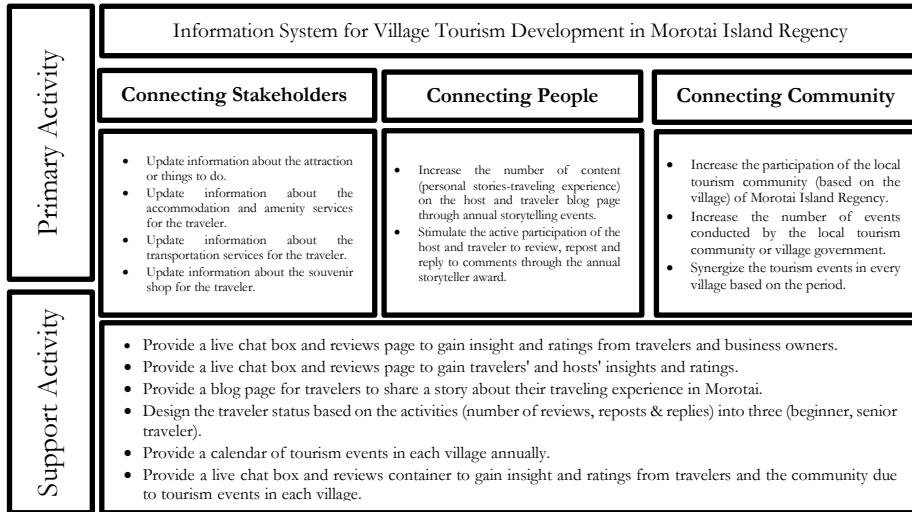


Figure 5. Value Chain Analysis of SIDEWITA

Figure 5 is a value chain of SIDEWITA classified based on primary activities and supporting activities such as *Tokuwela* and *Babari* to connect people, all groups, and all stakeholders. Several previous studies have shown that value chain analysis is used as resource mapping to predict the competitive advantage of technology system adoption for the sustainability of a company's or organization's business. [29] shows that tourism value chains must be mapped to comprehensively analyze existing conditions and resources that can be developed through appropriate development strategies. In this study, the use of applications in destination management needs to be compared with the features and functions of SIDEWITA to complement each other and improve the performance of tourism development in Morotai Island Regency. Considering this, stakeholders' tourism potentials and resources, managed using information systems, must be comprehensively analyzed based on advantages, disadvantages, challenges, and threats, as shown in the following Table.

Table 1. SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> The Village Government began using technology to market the 	<ul style="list-style-type: none"> Local people still need adaptation to become active users of digital

<p>potential of superior and attractive villages.</p> <ul style="list-style-type: none"> Marketing of tourist destinations began to use aerial videography or photography, which was more interactive. Travelers voluntarily create engaging content about destinations and then share that content on social media and personal <i>YouTube channels</i>, communities, and formal organizations. 	<p>applications in optimizing personal business.</p> <ul style="list-style-type: none"> Communication technology infrastructure and internet network are still in the development stage. There is no digital platform that accommodates content and integrates all the interests of stakeholders in the tourism sector. Minimal quantity of local Human Resources (HR) as website developers.
Opportunities	Threat
<ul style="list-style-type: none"> Local governments began to develop and use digital applications for good governance. The development in Morotai is in line with the innovative city development program. Morotai as one of the prioritized National Tourism Destinations (DPN) and is a Special Economic Zone (SEZ). 	<ul style="list-style-type: none"> Unpreparedness of individuals, communities, and stakeholders in the tourism sector to respond to changing marketing strategies in the digital age. Minimal promotion of tourist destinations or villages that have tourist attractions thus causing economic growth in rural areas. Conflicts of interest and unfair competition because there is no integrated system yet.

Table 1 shows the existing condition of tourism development on Morotai Island, which needs to be optimized, considering strengths and opportunities. SIDEWITA is designed to take advantage of the behavior of tourists who voluntarily create travel content and then share the content on social media and personal YouTube channels. In line with the intention of local governments to develop and use digital applications as the principles of good governance, SIDEWITA is designed to take advantage of the advantages or strengths of responding to existing opportunities. SIDEWITA also minimizes the risk of threats in the form of conflicts of interest and unfair competition because there is no effort or an integrated system that can accommodate all aspirations related to tourism business management. Thus, SIDEWITA needs to be applied to support the interests of tourism development at the rural level by optimizing the marketing of superior village potential.

Table 2. PEST Analysis

Political	Economic
<ul style="list-style-type: none"> The Village Government supports the use of technology in marketing the 	<ul style="list-style-type: none"> There is no digital platform that accommodates content and

Political	Economic
<p>potential of a superior village with a tourist attraction.</p> <ul style="list-style-type: none"> Local governments began to develop and use digital applications for <i>good governance</i>. Morotai is one of the prioritized National Tourism Destinations (DPN) and is a Special Economic Zone (SEZ). 	<p>integrates all the stakeholders' interests in the tourism sector, especially for the development of the village economy.</p> <ul style="list-style-type: none"> Minimal promotion of tourist destinations or villages that have tourist attractions (tourist villages), thus causing economic growth in rural areas.
Social	Technology
<ul style="list-style-type: none"> Travelers voluntarily create engaging content about destinations and then share that content on social media and personal <i>YouTube channels</i>, communities, and formal organizations. Local people still need adaptation to become active users of digital applications in optimizing personal business. 	<ul style="list-style-type: none"> Communication technology infrastructure and internet networks are still in the development stage. Minimal quantity of local Human Resources (HR) as website developers. The development in Morotai is in line with the innovative <i>city</i> development program.

Table 2 is the result of identification based on the dimensions of Political, Economic, Social, and Technology (PEST) by existing conditions, both resources and tourism development potential in Morotai Island Regency; it can be seen that the development of SIDEWITA is one of the strategic plans to take advantage of local government support for the development of the tourism economy by optimizing tourism resources in each village so that it can be developed and marketed as a characteristic or advantage of the town, to bring in tourists. Thus, a city with the most fantastic tourist attractions can develop as a village. Meanwhile, SIDEWITA is a digital communication platform that connects tourists and local communities to other stakeholders, such as entrepreneurs and other formal organization administrators, to collaborate to build tourism in Morotai Island Regency.

3.3 McFarlan Strategy Grid and SIDEWITA

Based on the current portfolio of applications developed and used by the Morotai Island Regency government, several applications play an essential support role and critical operations and have high potential and strategy. The design of the SIDEWITA application is classified as a Strategic application that can encourage the development of the village economy, increase regional income, and create superior competitiveness values, as shown in Table 3 below.

Table 3. McFarlan Application Portfolio

Strategic	High Potential
Morotai Tourism Village Information System (SIDEWITA)	<ul style="list-style-type: none"> • Tourism Office Asset Management Information System • Regional Tourism Information System (SIPARDA) • Ecotourism and Mangrove Management System (SIMANGROVE)
Key Operational	Support
Financial Management Information System <ul style="list-style-type: none"> • Employee Attendance Management Information System • Information and Documentation Management Officer (PPID) • LPSE 	<ul style="list-style-type: none"> • Employment Information System • National Legal Documentation and Information Network • One Data • Bank Data • List of Information System Services • Satisfaction Survey

Table 3 shows that the analysis results based on the McFarlan Portfolio can identify several applications developed and used in government management. Nevertheless, the development of SIDEWITA needs to be carried out to increase competitiveness. SIDEWITA is designed by paying attention to the following principles: first, to be a forum for interaction between system users as tourists and prospective tourists (connecting people); second, to be a forum for exchange between system users as a community (connecting community); third, to become a forum for interaction between system users as stakeholders (connecting stakeholders).

SIDEWITA users as tourists can take advantage of the write article feature to contribute through travel content while in Morotai and take advantage of photo and video features to enrich travel documentation in Morotai. However, operators for travel stories and experiences are responsible for validating and confirming the content of articles and videos uploaded before being published on the SIDEWITA website. In addition, system users as tourists can also review products and services obtained in tourist destinations, tourism events, hotels, homestays, resorts, car rentals, and speedboat rentals. However, tourists must fill out a form that explains travel information such as visiting solo with friends, with couples, with family, then choosing the date, month, and year of visiting, and providing a statement that the information provided is by actual conditions and is not engineered for specific purposes.

SIDEWITA users, as administrators and community members, can contribute through local community content related to tourist activities or other supporting content. System users, as administrators and community members, can also take advantage of photo and video features to enrich content related to routine community activities in attracting tourists to the island of Morotai. The difference between a user of the system as a traveler and a user of the system as a member or administrator of the community is the process of reviewing attractions, accommodations, amenities, and *vacation rentals*. Users of the system as members or administrators of the community only choose the language to provide reviews. Meanwhile, the content of the uploaded articles and videos will be validated or confirmed by the *operator for the community page* before publication.

SIDEWITA users as stakeholders with backgrounds as entrepreneurs in the tourism business and other supporting formal organizations can upload information on destinations, events, and tourism businesses such as hotels, homestays, resorts, and vacation rentals (car and speedboat) based on the operational business area. The uploaded data will be validated or confirmed by the operator for tourism organizations and businesses before being displayed on the website. This shows that stakeholders can market products and services related to attractions, accommodations, amenities, and vacation rentals on Morotai Island. Thus, SIDEWITA is designed to increase the participation of stakeholders, especially Micro, Small, and Medium Enterprises (MSMEs) in Morotai Island Regency, North Maluku Province, Indonesia.

4. CONCLUSION

Based on the existing conditions of tourism on Morotai Island, the development of information technology and internet communication networks plays a vital role in encouraging the digital literacy of the Morotai community and stakeholders to synergize to realize the development goals of Morotai Island. The internal analysis results show that the value chain of SIDEWITA can be classified based on primary activities and supporting activities such as the *Tokuwela* and *Babari* to connect people, all groups, and all stakeholders. The design of the SIDEWITA web application is classified as a Strategic application that can encourage the development of the village economy, increase regional income, and create superior competitiveness value.

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