

DIGITAL TRANSFORMATION IN TOURISM SECTOR: SUPPORT ENHANCEMENT ENTREPRENEUR CAREER

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ABSTRACT

This study supports Tourism 4.0 to become a global paradigm and contribute to technological change in tourism. The purpose of this study is to develop a mobile application to support tourism industry by integrating the tourism sector and its relationship in stimulating a new entrepreneur career. Mix method methodology was used in this study, extreme programming as a software development and focus group discussion to get expert judgment. The finding of study is The Smart West Sumatera Tourism (The SWS-Tourism) application. The SWS-Tourism is mobile application that support the development of tourism digitization that offers interesting tourist destinations in West Sumatera. Where this application makes it easier for tourists to get information about Minangkabau culture, historical sites, and tourism attractions through their mobile phones, besides providing tourist facilities to communicate and book tour guides for trips to West Sumatra and through these application tourists can also order souvenirs and traditional foods directly to entrepreneurs of small business. The testing result used Black-Box method of the SWS-Tourism is obtained that all the process work well and the expert agree that the SWS-Tourism support to enhancement entrepreneurs of traditional souvenirs and traditional foods, tour guides in West Sumatra.

Key words: Digital Transformation, Tourism, Entrepreneur, Career, the SWS-Tourism

INTRODUCTION

The digital tourism and entrepreneur in Industrial Revolution 4.0 has become a favorite topic for researched. Era IR 4.0 resulted in the emergence of digital transformation, this contributes significantly to change the current business model, which in running a business needs to adjust to changing technological developments in order to continue to survive (Oktavenus, 2019), which also resulted in changes in consumer behavior (customer behavior), today consumers are very like something that is mobile. Where the role of social media such as Facebook, Instagram, WhatsApp greatly contribute to the development of entrepreneurship in society and contribute significantly in achieving innovation and creativity among entrepreneurs (Calvin et al., 2018).

Digital transformation also affects the tourism sector, which is the cause of the birth of tourism 4.0. Tourism 4.0 as new paradigm, appearing with the quest to unlock the innovation potential in the whole tourism sector (Starc Peceny et al., 2020). The use of digital transformation in the world of tourism is very influential supported by 5 digital marketing applications, namely websites, online advertising, social media, web forums, and mobile applications, by applying digital marketing tourism will grow professionally and globally (Warmayana, 2018). The impact of digital transformation can be seen in (1) the travel and guide category is the most popular one in the queries that have been performed in Google Play (Fuentetaja et al., 2014), (2) changes in the decision-making process traveled to the millennial generation, 85% of tourists in the world recognizes that the comments, upload pictures and videos on social media platforms affect plans traveled (Imam, 2018).

There were several studies related to mobile application development to support tourism 4.0, according to Dzikri the use of the internet as a medium to find Batam tourism destination information combined by using an Android-based mobile application to made a geographic information system application for tourism destinations in Batam (Dzikri & Ramadani, 2018). Another study finding a significant relationship between presence of smartphone applications and touristic experience and also significantly affected overall tourist satisfaction (Lee et al., 2014).

So many countries in the world including Indonesia seeks to adapt to tourism 4.0. Indonesian government was increasing the tourism industry, one of which initiated the policy of the Ministry of Tourism in Indonesia Pesona Generation (GENPI) as the millennial communities promote tourism in Indonesia and policies to develop tourism destination concept of "kekinian" through the digital approach (Imam, 2018; Helianny, 2019). Indonesia is a very rich country with tourist destinations, one of them is destination to province of West Sumatra. West Sumatra is one of the tourist destinations for domestic tourists and foreign tourist, because it has many interesting tourist attractions ranging from cultural, nature, as well as food tours.

Currently tourism promotion in West Sumatra has used travel bloggers (Syahputra et al., 2017) and websites but is only limited to tourist destination information. While tourists also need information about culture, transportation, souvenir centers, etc. So that more studies need to be conducted on the application of technology that supports tourism 4.0 and entrepreneurship.

The purpose of this study is to further maximize the use of digital media by designing a mobile application of The Smart West Sumatera Tourism (The SWS-Tourism) that provide facilities in the form of tourist destination location features, Minangkabau culture features, historical sites features, tour guide booking features, and online souvenirs and traditional food buying features.

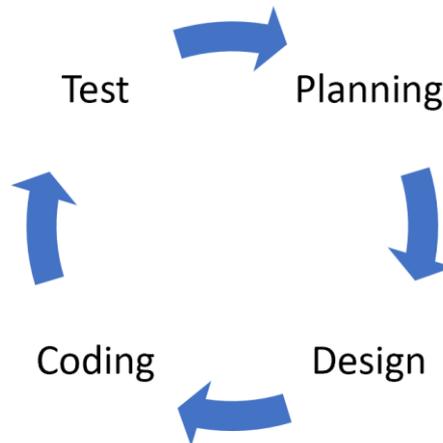
So the mobile application that was designed to provide facilities for tourists and also provide benefits to the local community, especially tour guide and entrepreneurs of small business.

The focuses of this research are on (i) designing a mobile application of The SWS-Tourism (ii) acceptance testing of SWS-Tourism Application was conducted by questionnaire (iii) The SWS-Tourism application support to enhancement entrepreneurs of traditional souvenirs and traditional foods, tour guides in West Sumatra was conducted by expert judgment in focus group discussion.

METHODOLOGY

In this study, mobile application was designed by using the development approach of Extreme Programming (XP), and application development requires several supporting applications or software requirements to build android applications (Rahmayun et al., 2014). Extreme Programming differs from other software development methodologies as it focuses more on adaptability and responsiveness to the changing customer requirements (Yadav et al., 2019). Extreme Programming (XP) is one of the many methodologies in software engineering and is also part of the agile software development methodology, and a software engineering process that tends to use the object-oriented approach (Oktaviani & Hutrianto, 2016; Supriyatna, 2018a).

Figure 1: Extreme Programming (XP)



The procedure of the development approach of extreme programming consisted of four phase, there were planning, design, coding, test (Supriyatna, 2018; Rafidan, 2019).

Planning - This first phase was analyzes need assessment of the system to find out the features needed by admin, tourist, tour guide, and entrepreneur of small business.

Design - This second phase was describing the design of mobile applications using unified modeling language (UML). The Unified Modeling Language (UML) is a visual modeling language dominant in object-oriented software development (Siau, 2010). Because of the obvious usage and tool support of UML modeling techniques, it plays an important role in the design and implementation phases in the construction of software systems (Alhumaidan, 2012).

Coding - The third phase was made source code program based on design system used software Java Development Kit (JDK) and Eclipse (Rahmayun et al., 2014). Java was chosen because it has a unique way of working compared to other programming languages, namely the java programming language works using interpreter and compiler in the process of making the program, java interpreter is known as bytecode programming that is by working to change the class package in java with the extension “.java” to “.class”, this is known as bytecode class, I.e. class produced so that the program can be run on all types of devices and platforms so that the java program is written once enough but is able to work in different types of environments (Rahmayun et al., 2014). Eclipse IDE (Integrated Development Environment) for developing software and can be run on all platforms (independent platform). Eclipse is currently one of the favorite IDEs because it is free and open-source, which means anyone can see the programming code of this software. In addition, the advantage of Eclipse that makes it popular is its ability to be developed by users with a component called a plug-in (Lengkong et al., 2015).

Testing - The fourth phase was used *Black-Box testing* and acceptance testing used questionnaire with Likert Scale. Software testing phase is one of a critical element in determining the quality of a software (Jaya, 2018). The Black-Box Test is conducted to find errors in several categories, namely: (1) Missing or incorrect functions; (2) Interface or interface design errors; (3) Errors in data structures or external database access; (4) Performance errors; and (5) Initialization and termination errors (Febiharsa et al., 2018). To get optimal results, it is important to perform a thorough test on the application system interface by using black-box testing with the aim of knowing whether the functions in the application have run according to their objectives and of evaluating the application suitability for the user's needs (Cholifah et al., 2018).

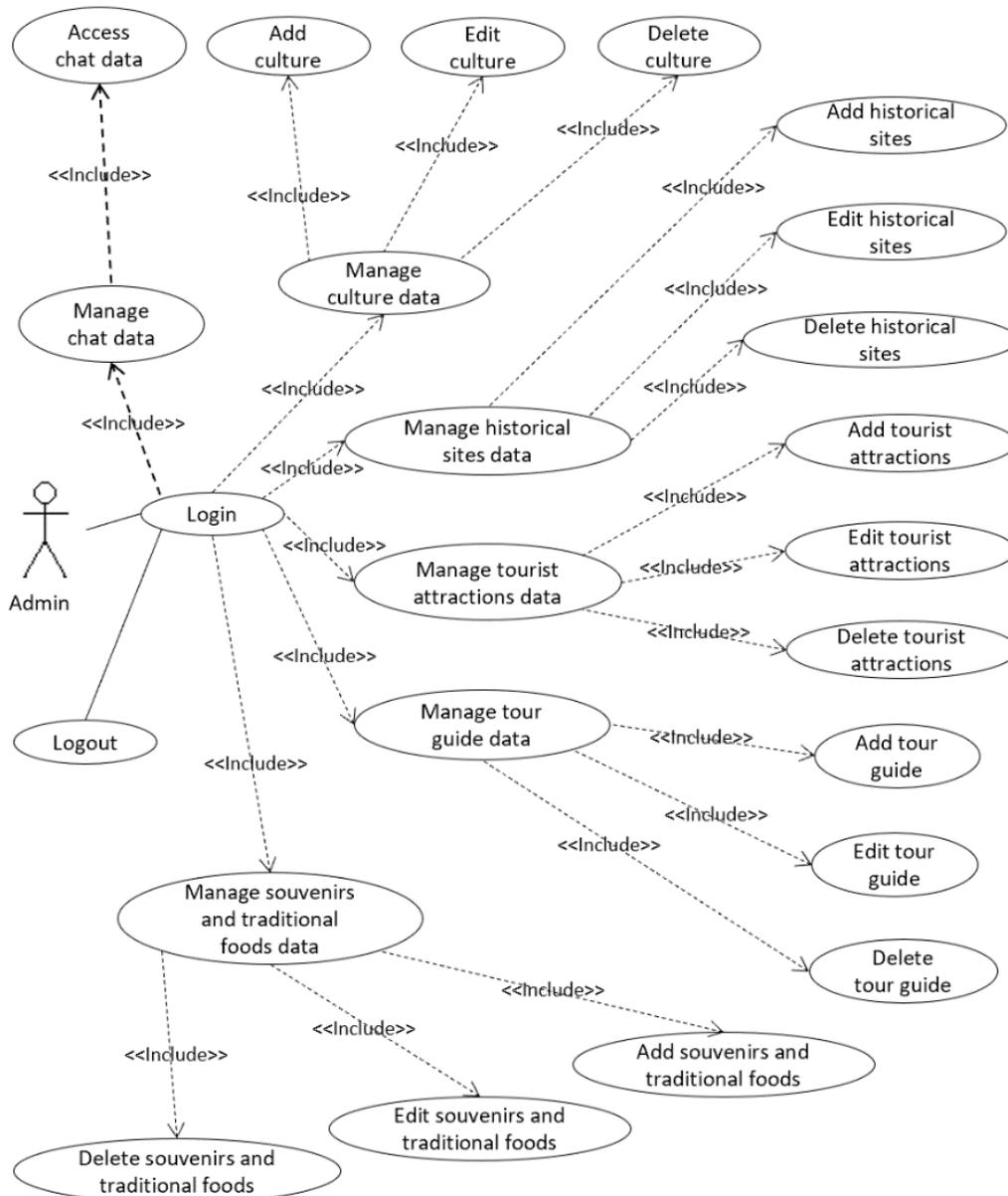
RESULT AND DISCUSSION

Planning - Need assessment of this mobile application was important phase to find out the features needed by admin, tourist, tour guides, and entrepreneurs of small business. This mobile application was designed to facilitate the tourist information about tourist destinations in West Sumatra, facilitate communication with the tour guide and facilitate the purchase of traditional souvenirs from entrepreneurs of small businesses in the tourism industry.

Design - The application design uses unified modeling language (UML), which consists of:

- The first design was Use Case for admin, admin has full access to manage data (add, delete, edit) related to Minangkabau culture, historical sites, tourist attractions, tour guide data, souvenirs and traditional foods data.
- The second design was Use Case for user (tourist), tourist can access detail information about Minangkabau culture, historical sites, tourist attractions, tour guide, souvenirs and traditional foods. Another feature was that tourists can order tour guides if they want to travel and can buy Minangkabau souvenirs and traditional food.
- The Third design was Use Case for tour guide tour guide has registered, tour guide can access the culture, historical sites, tourist attractions, edit profile and can view a list of incoming messages from the tourist as well as start a chat.
- The fourth design was Use Case for entrepreneur of small business, entrepreneur has registered, can access the culture, historical sites, tourist attractions, edit profile, manage data souvenirs and traditional food product, and can view a list of incoming messages from the tourist and start a chat.

Figure 2: Use Case Diagram Admin



Design user interface, the following is the picture of main menu, culture, historical sites, tourist attractions, tour guides, souvenirs and traditional foods of this mobile application.

Figure 3 shown main menu of SWS-Tourism, there are some items, Minangkabau culture, tourist attractions, historical sites, tour guide, souvenirs and traditional foods. Figure 4 shown that tourist can access detail information and video about culture in West Sumatra, such as wedding ceremony, the traditional clotting, the traditional dance, etc.

Figure 3: Main menu of SWS-Tourism

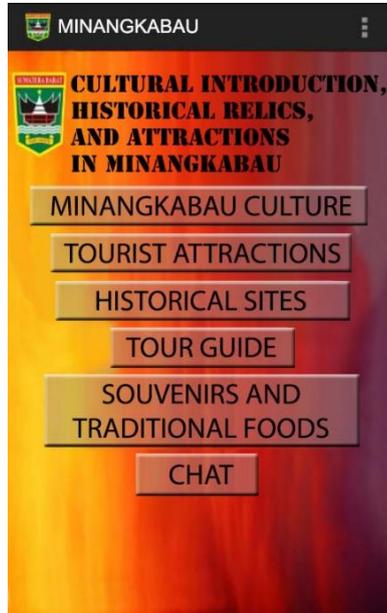


Figure 4: One of culture in West Sumatera

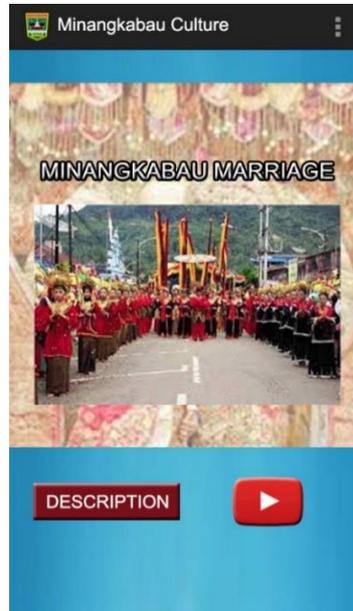


Figure 5 shown that tourist can access detail information of historical sites in West Sumatra, such as historic spots is "Fort de Kock". Figure 6 shown that tourist can access detail information of many interesting tourist attractions in West Sumatra, such as Mandeh Islands is one of iconic for amazing nature tourism.

Figure 5: One of historical sites in West Sumatera

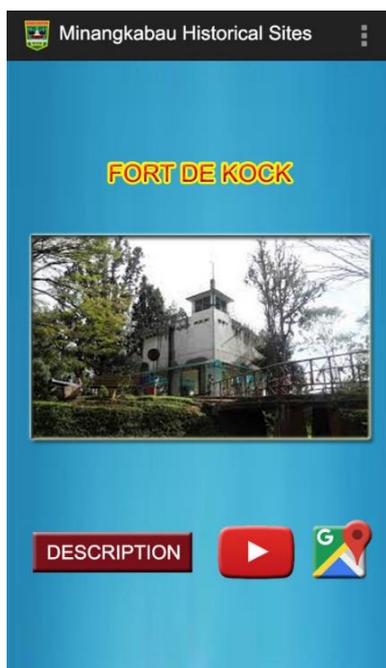


Figure 6: One of interesting tourist attractions in West Sumatera

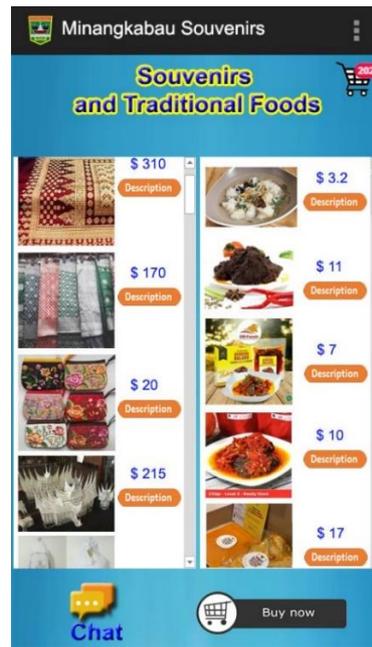


Figure 7 shown that tourist can access detail information about profile, contact person of tour guide. Figure 8 shown that tourist can access detail information of souvenirs and traditional foods, price of product.

Figure 7: Display of tour guide



Figure 8: Display of souvenirs and traditional foods



Coding - In this phase, we making source code of SWS-Tourism. To made mobile application used software Java Development Kit (JDK) and Eclipse. Implementation begins with step JDK software installation, use Eclipse android application to create a new project (see Figure 9).

Figure 9: Sample of source code project

```
import android.os.Bundle;

public class halamann2 extends Activity {
    Button budaya,sejarah,wisata,tentang;

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.halamann2);

        budaya=(Button) findViewById(new R.id().budaya);
        budaya.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View arg0) {
                Intent perpindahan = new Intent(arg0.getContext(),pbudaya.class);
                startActivity(perpindahan);
            }
        });
    }
}
```

Test - The testing of this mobile application was done by using examination of *Black-Box testing*. *Black-Box testing* Black-Box testing is a testing method that focuses on software. The testing result of SWS-Tourism is obtained that all the process work well.

Acceptance Testing was conducted by questionnaire, with Likert Scale calculation. Number of respondents 30 respondents using google form. The indicator variable used to get information about application content and application performance of SWS-Tourism.

Table 1: List questions of questioner

No	Questions	Penilaian				
		5	4	3	2	1
1	Tourist get new knowledge of the use SWS-Tourism	18	11	1		
2	Content presents clear information	15	15			
3	Content presenting complete information about tourism in West Sumatra	12	17	1		
4	Content of The SWS-Tourism ware made according to the needs of tourist	20	10			
5	The truth of the substance of the content	19	11			
6	Design layout of structured content	12	18			
7	The SWS-Tourism facilitate tourist to travel in West Sumatra	11	19			
8	The SWS-Tourism help tour guides to get costumers	12	18			
9	The SWS-Tourism were help souvenir's entrepreneurs to promote their product	11	19			
10	The SWS-Tourism were help entrepreneurs of traditional foods to promote their product	17	13			
11	The SWS-tourism design is interesting	18	12			
12	The SWS-Tourism design is fun	15	15			
13	The SWS-Tourism navigator is easy to understand	22	8			
14	The word, Illustrations and icons used are suitable in each screen display	19	11			
15	The overall SWS-Tourism can functions perfectly	21	9			

(5) Strongly Agree (4) Agree (3) Neutral (2) Disagree (1) Strongly disagree

Based on the data (see Table. 1), 91.3 % of respondent agree that they get new knowledge of the use SWS-Tourism, 90% of respondent agree that Content presents clear information, 87.3% of respondent agree that Content presenting complete information about tourism in West Sumatra, 93.3% of respondent agree that content of SWS-Tourism according to the needs of tourist, 92.6 % of respondent agree that truth of the substance of the content, 88% of respondent agree that design Layout of structured content, 87.3% of respondent agree that SWS-Tourism facilitate tourist to travel in West Sumatra, 88% of respondent agree that SWS-Tourism help tour guides to get costumers, 87.3% of respondent agree that SWS-Tourism were help souvenir's entrepreneurs to promote their product, 91.3% of respondent agree that SWS-Tourism were help entrepreneurs of traditional foods to promote their product, 92% of respondent agree that SWS-tourism design is interesting, 90% of respondent agree that SWS-Tourism design is fun, 94.6 % of respondent agree that SWS-Tourism navigator is easy to understand, 92.6 % of respondent agree that the word, Illustrations and icons used are suitable in each screen display, 94 % of respondent agree that the overall SWS-Tourism can functions perfectly. Generally, 90.67 % the respondent agree that SWS-Tourism have good application content and good performance.

Based on interviews with 2 experts in technology sector and 1 economist, it can be concluded that usage of SWS-Tourism will provide convenience to tour guides, entrepreneur of traditional souvenirs and entrepreneur of traditional foods to get costumers and it make easier to communicate with costumers. SWS-Tourism were help entrepreneur of traditional souvenirs and entrepreneur of traditional foods entrepreneurs to promote their product. It was according with opinion of Slamet, that usage of technology as a digital entrepreneur development strategies have an important role in the expansion of the market (Slamet et al., 2016).

The facilities provided by SWS-Tourism, the experts agree that it can stimulate new entrepreneurs, because it can facilitate millennial generation as an active generation in using technology to become entrepreneurs especially in the tourism industry sector. It was according to Achmad, that internet era which provided opportunities for the development of entrepreneurial ethos, especially for the younger generation (Achmad et al., 2016), Entrepreneurship is becoming a popular career option among younger generations, not least among university students (Meoli et al., 2019), career as entrepreneur has had great benefits in economic development (Fuentetaja et al., 2014; Asante & Affum-Osei, 2019).

This work represents the first step in a broader research line that revolves around the development and use of mobile tourism apps. The SWS-Tourism mobile application is expected to provide new input for local governments in supporting tourism 4.0, especially in West Sumatra, though tourism stakeholders have already implemented the technologies of the fourth industrial revolution that are suitable for designing tourism services.

CONCLUSION

The conclusion of this research is that The SWS-Tourism application has been successfully developed using extreme programming as a software development methodology and this application can run well. Acceptance testing of SWS-Tourism Application that has been done, the respondent agrees that this application has good content and good performance. The expert agrees that The SWS-Tourism can facilitate tourists when visiting West Sumatra, and it can help tourist guides, souvenirs and traditional food entrepreneurs to get costumers, so this application support to enhancement entrepreneurs. The SWS-Tourism can be used as another alternative media in the tourism industry sector especially in West Sumatera and as a new input for local governments in supporting tourism 4.0.

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