

## DEVELOPMENT E-TOURISM AS AN EFFORT TO SUPPORT TOURISM CHARM PROGRAMME IN INDONESIA

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**Abstract:** The prospect of developing the tourism aspect is increasingly unstoppable. Tourism is one of the world's markets and a mainstay sector that is growing significantly. To increase the role of tourism, it is necessary to organize and innovate from tourism managers. Adapting to developments in technology, communication, and information is important as a tourism promotion and development strategy. This study aimed to develop an Android-based "GoTRIP" e-tourism which would serve as a need for an effective and efficient promotional tool in supporting and succeeding the title of tourist charm of Indonesia. This study used the R & D method by adopting the Borg & Gall development model (planning, data research and collection, product draft development, limited field trials, revision of results of limited field trials, wider field trials, revision of results of field trials more breadth, and dissemination and implementation). The results showed that the development of e-tourism "GoTRIP" was very feasible in supporting tourism promotion and supporting tourism charm titles in Indonesia. This was evidenced by the results of the feasibility assessment which included usability of 96.4% and 92%, functionality showed 87.5% and 89.30%, and visual communication of 90% and 92%, respectively. Meanwhile, the results of the media trial by taking into account the attractiveness, efficiency, and effectiveness indicators were stated to be very good with a result of 81%. This application is packaged in a practical way so that tourists no longer have difficulty finding tourist objects along with tourism supporting information. Travelers can use the app during the trip hence its accessibility and easy connection. In addition, the development of this application can certainly be a medium for developing sustainable tourism.

**Key words:** e-tourism, promotion strategy, tourist destination, Indonesia

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### INTRODUCTION

Tourism is one of the world's markets and a key sector that significantly keeps growing. It is the fastest growing industry sector in the world (Goliath-Ludic and Yekela, 2021), main factor for economic growth (Garcia et al., 2015; Wahyuningtyas et al., 2020, Wahyuningtyas et al., 2019; Idris et al., 2021) and sectors that can change socio-cultural and environmental (Dayananda and Leelavathi, 2016). The number of international tourist arrivals totals 1.5 billion globally (UNWTO, 2020). Tourism accounts for 10.4% (US\$9.2 trillion) of GDP and 9.9% (313 million) of total employment worldwide (WTTC, 2017). This sector provides a significant contribution to state revenues in the Southeast Asia region, with growth reaching 8.3% above global growth of only 3.6%. (Mafruhah et al., 2020). Meanwhile, in Indonesia, the number of foreign tourist arrivals continued to increase by 12.58%, from 14.04 million in 2017 to 15.81 million in 2018 (BPS, 2018, 2019). Thus, tourism is a potential sector that becomes a source of income (Neto, 2003; Nurhajati, 2018; Wahyuningtyas et al., 2020, Wahyuningtyas et al., 2019), job vacancy (Kim et al., 2016; Martin et al.,

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2008), healthy investment provider (Thompson, 2011), and a source of increasing community income (Du et al., 2016). The prospect of tourism development is increasingly unstoppable by progress and changing times.

To increase the role of tourism, it is necessary to manage, regulate, and organize from the manager of tourist destinations (Buhalis and Law, 2008; Mamycheva et al, 2017; Van & Vanneste, 2015). Organizing tourism management balanced with technological innovation is an important thing in the current era. Tourism managers can easily introduce tourism objects, infrastructure, accessibility, and amenities to consumers.

This can be done effectively and efficiently through social media and the use of information technology systems (Fauzi, 2018; Kusumo et al., 2019). The role of information technology in tourism development, both in the world and in Indonesia, is recognized as the most strategic tool in increasing the effectiveness and efficiency of tourism destination promotion (Berne et al., 2012; Huang et al., 2017; Sigala, 2018; Xiang, 2018; Idris et al., 2021). Today's technology has become a transformational tool in the structure and operations of the tourism industry (Sigala, 2018, Idris et al., 2021) and become a basic need for the tourism industry (Sigala, 2018; Idris et al., 2021).

Tulungagung is one of the areas in East Java, Indonesia that has a lot of unique tourism potential to be developed, including beach tourism (Sumarmi et al., 2020), nature (Indrayana et al., 2018), culture, local culinary (Wahyudi, 2019), and others. The Tulungagung government has intensively made improvements in promoting tourism. This improvement is to realize the Tulungagung Enchantment program as a reliable tourist destination not only in the regional scope but also nationally and even internationally. With the development and introduction of the wealth of tourism and cultural potential of Tulungagung properly, it can increase regional income (Monda and Fachruddin, 2019; Nurhajayati, 2016; Sekar, 2019). However, according to the study by (Purwanto et al., 2015), the strategy in tourism development in Tulungagung is not optimal and has not given a significant impact towards the well-being of the neighboring residents as well as the regional revenue. In addition, there has not been a maximum effort in utilizing information technology for promoting the tourism and e-tourism development. Several previous relevant studies only talk about the implementation of tourism policy and the strategy in developing the tourism aspect of Tulungagung, Indonesia (Monda and Fachruddin, 2019). Also, technology-based development in tourism has been done before (Purwanto et al., 2015; Firliana et al., 2016). However, it was only limited to Using GIS for Tourism Information System in Tulungagung, Indonesia. As per the limited number of previous researches as mentioned, the researcher then saw an opportunity to utilize information technology using promotion based on e-tourism to support the development of tourism in Tulungagung.

This development uses a breakthrough in the sense of effortless tourism destination mapping, the facilities, accessibility, and the amenity for tourists alike. This will deliver uncomplicated experience in choosing the right tourism destination as one's preferences, of which belongs to excellent service in tourism development (Anuar et al., 2015; Vengesayi et al., 2009, Dharta et al., 2021; Manhas et al., 2016).

**MATERIALS AND METHODS**

This research employs research and development approach (R and D) by adopting Borg and Gall model. The development model of Borg and Gall has 10 steps (Ramadani et al., 2020). As per the 10 steps, the research only used 8 development steps, because (1) there is no field trial, assuming that the developed product is deemed to be enough and is final, and (2) the final product is no longer revised because it is already feasible. Meanwhile, the research procedure and the modified Borg and Gall development is shown in the Figure 1.

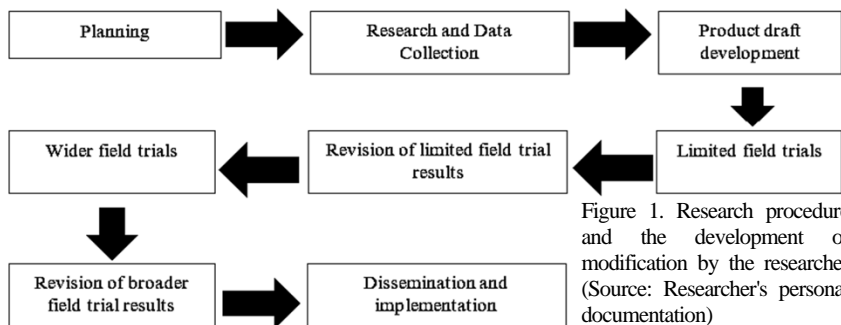


Figure 1. Research procedure and the development of modification by the researcher (Source: Researcher's personal documentation)

Table 1. Analysis Result Criteria of the Expedience of the Instrument Points (Source: Arikunto, 2012)

Percentage (%)	Description
80 – 100	Very Good (No Revision)
66 – 79	Good (Need a few Revision)
56 – 65	Pretty Good (Need Partial Revision)
40 – 55	Not Good (Partial Revision and Reassessment of the Content)
0 – 39	Bad (Overall Revision/Change)

The first phase is planning. The researcher discussed the initial design of the application and did an analysis on the needs through identifying and mapping the potential of tourism spots in Tulungagung, Indonesia. In addition, the researcher also analyzed the content to be developed in the e-tourism application. In the second phase, the researcher researched and collected the data. The primary data are obtained through observation, documentation, and interviews with the Department of Tourism and Culture, the tourist managers, travel agents, tourism communities, the visitors, the locals and others in order to develop the content which will be put into the application. The third phase is developing the product's draft. This is done to implement the previously arranged design in the form of "GoTRIP" e-tourism application. During the development process of the product, the researcher collaborated with the validators to assess the feasibility of the product in development. Meanwhile, the fourth phase is limited field trial. This phase covered limited samples of 10 audience. While the fifth phase is revising the product as per the suggestion and criticism from the audience acquired from the fourth phase. The sixth phase is expanded field trial, with more numbers of samples, where the researcher made the locals as the tourists of destination in Tulungagung, Indonesia to try using the product. The

seventh phase is to revise the previously tried product in an expanded scope. And then, the eighth phase is dissemination and implementation. Whereas the criteria for feasibility assessment for the validation process can be seen in Table 1.

## RESULT AND DISCUSSION

E-tourism application “GoTRIP” is an application containing information of tourist’s destination in Tulungagung Regency. The purpose of developing this application is to provide information for people in general about different variety in tourism spots in Tulungagung Regency. This application also shows 8 districts in Tulungagung Regency with its famous tourist’s destinations: Besuki District, Sendang District, Kalidawir District, Pucanglaban District, Sumbergempol District, Tanggung Gunung District, Boyolangu District and Pagerwojo District. Every single district shown in the application holds information on the tourist destination, district gallery, travel routes, (from Blitar, Kediri, and Trenggalek), the public facility (health and security services), and tourism accommodation (Gas station, hostel, and restaurants).

### Steps in Developing the e-tourism application

The first phase is the planning. This includes the planning of the product and the analysis for the needs e.h the mapping of the potential list of the tourist destinations as well as its contents. Then, the next step is developing the said product. In this planning step, the team chooses the application used to develop the application: Adobe Animate 2019. The decision to choose this application is because of its interface in graphic, raster, text, audio, video, etc. The next step is to design the early part and the development of the application. Further, the second phase is the research and data collection. The research and the data collection contain the continuation of the planning process. In this step, the research will collect the data of famous tourist destinations across 8 districts in Tulungagung: Besuki, Sendang, Kalidawir, Pucanglaban, Sumbergempol, Tanggung Gunung, Boyolangu, and Pagerwojo districts. In addition, the team also identified the public facilities surrounding the areas of the tourist destination, for example the health and security services, travel routes, tourism accommodation (Gas station, hostel, and restaurants). Still in the same phase, the team also interviewed related government agency, travel agents, tourism communities, the visitors and the locals to complete the observation report. When all of the data are collected, then the next step is to analyze to develop the product.

The third phase is developing the product’s draft. This includes building the storyboard based on the previous analysis. The entire data were put into the macromedia flash-based “GoTRIP” tourism application. Next, the researcher did some processes o further polish the application and collaborated with expert validators who are product expert (media) and content expert. The validators functions to assess the feasibility of the product for the audience to test. Meanwhile, the team of validator of the product (media) on the development of this product is Ulfatun Nafi’ah, M. Pd and Herlina Ike Oktavian, M.Pd, while the content validators are Nailul Insani, M.Si and Ulfi Andriyana, M.Pd. After going through and passing the validation phase, the application is read for a trial to the audience (the tourists).

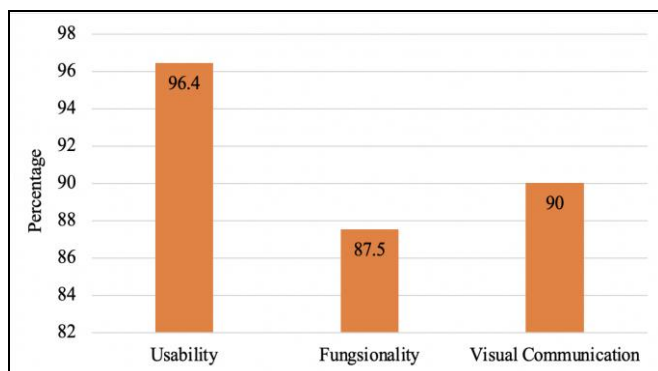


Figure 2. The Result of Media Expert Validation 1 (Source: Research results)

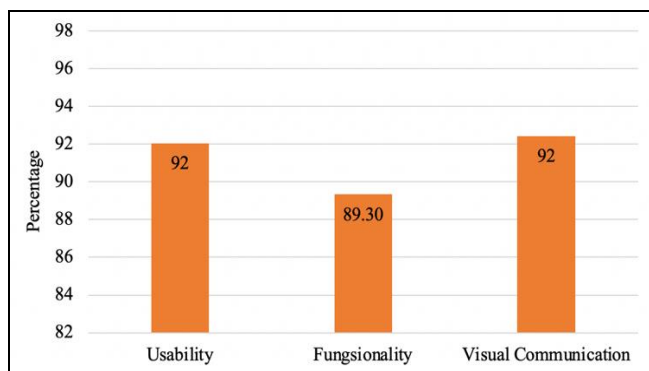


Figure 3. The Result of Media Expert Validation 2 (Source: Research results)

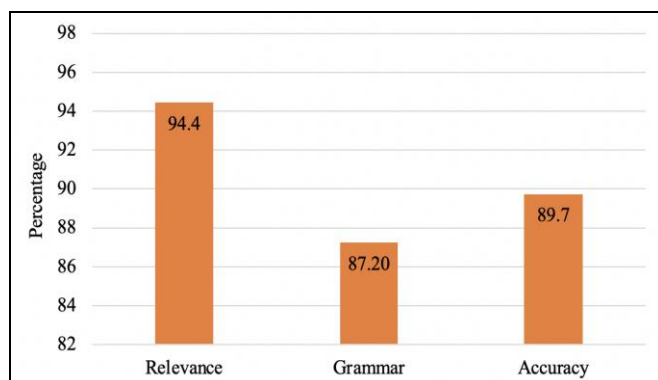


Figure 4. The Result of Material Expert Validation 1 (Source: Research results)

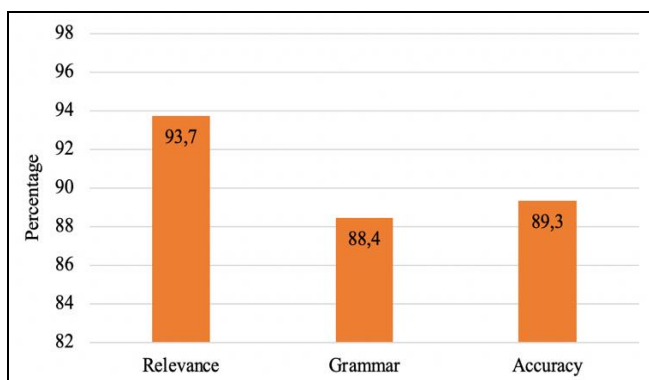


Figure 5. The Result of Material Expert Validation 2 (Source: Research results)

Based on both of the product expert validators, it is shown that the media being developed, in this case, e-tourism macromedia flash-based application named “GoTRIP” is deemed to be feasible. This includes the usability rate of 96.4% and 92%, the percentage of the functionality of 87.5% and 89.30%, as well as 90% and 92% for the visual communication aspects (Figure 2 and Figure 3). Those three indicators are important to be included in the media feasibility because they contain the tutorials for the users in using the product, and functions to view the user’s satisfaction in using the media being presented (Dumas and Redish, 1999). Usability, functionality, as well as visual communication are very important to achieve the previously set target through effectiveness, efficiency, and to achieve user satisfaction in using the product (Rahadi, 2014). The results for the content are also not far off from the product validation (media). The assessment from content validator also shows that “GoTRIP” e-tourism application is deemed to be very good and feasible. This covers the relevance percentage of 94.4% and 93.7%, the language aspect of 87.2% and 88.4%, as well as 89.7% and 89.3% for the accuracy of the application (Figure 4 and Figure 5).

The fourth phase is limited field trial. This trial is done by using the limited samples of 10 audience as the trial respondents. Besides being the trial subjects, they are also the product’s validators. By questionnaires shared to them, the researcher acqyured the result of their assessment for its feasibility, as well as any suggestion or criticism for the product. The aspects assessed in the field trials and result can be seen in Table 2.

Table 2. Result of Field Trial (Source: Research results)

Product Attraction Aspect	Product Efficiency Aspect	Product Effectiveness Aspect
$P = (507/608) \times 100\%$ $P = 0.833 \times 100$ $P = 83.3\%$	$P = (494/608) \times 100\%$ $P = 0.8125 \times 100$ $P = 81.25\%$	$P = (352/456) \times 100\%$ $P = 0.772 \times 100$ $P = 77.2\%$

Meanwhile, if the overall assessment is from the quantitative field trial data, then they can be described with the following:  $P = (1353/1672) \times 100\%$ ;  $P = 0.81 \times 100$ ;  $P = 81\%$

According to the data above, it can be concluded that the trial result of “GoTRIP” e-tourism application, by considering the attractiveness, efficiency, and effectivity as the indicators, is deemed to be very good and therefore feasible.

The first phase is revising the product after the limited field trial. The aspects that need revision are acquired from the advice and suggestion of the audience during field trial. One example of such suggestion is to enlarge the font used in the application to make it easier to read. The researcher then did the revision according to the suggestion and ultimately validated the product once again. The validation result declares that the product is very good and feasible, and so the “GoTRIP” e-tourism application is ready for dissemination After the revision process and the product is deemed to be feasible, then the product will undergo a further trial. The sixth phase is expanded trial.

However, this trial cannot be performed due to Tulungagung areas being included in Covid-19 red zone, and resulted in a failure to do the dissemination and implementation processes. However, when the Covid-19 pandemic is over, the team plans to continue the last phase of this research.

**Product Description**

E-tourism “GoTRIP” application is developed to support the tourism industry of Tulungagung, Indonesia. The features of application can be seen in Table 3.

Table 3. Features in E-Tourism “Gotrip” Application (Source: Research results)

No	Feature	Description
1	Home	Home is the welcoming menu when the user accesses the e-tourism “GoTRIP” application for the first time. This is an introduction menu showing the application name tools of “Tulungagung E-Tourism”, whereas next, there will be “start” tools to enter the main menu of the application (Figure 6).
2	Main Menu	This menu contains the entire tools of the application, such as the map of Tulungagung, supporting pictures, the district menu, the map legend, zoom in & zoom out of the map, the compass direction (right, left, up, and down of the map), the backsound of the application, tutorials on how to show and hide the menu bar, etc (Figure 7).
3	District Menu	This menu contains the tourist destination in each district of Tulungagung Regency. The tools in this menu are the list of the destination, each with a brief description, a complete description, etc (Figure 8).
4	Tourist Destination Menu	Tourist destination menu contains the description of each tourist destination in Tulungagung Regency. Meanwhile, the tools used in this menu are the description of each district, the tourist attraction description, gallery showing the view of the attraction, travel routes, public facility, and the tourism accommodation (Figure 9).
5	Gallery Menu	The gallery menu holds the description of each tourist destination in every district with the tools of the district map, the description, the tourism accommodation, the public facility, travel routes, and the district’s gallery (Figure 10).
6	Travel Route Menu	This menu contains the tools of travel routes description from Trenggalek Regency, Blitar Regency, and Kediri Regency routes (Figure 11).
7	Public Facility Menu	This menu holds the tools on the list of public facility including the health and security services in the surrounding areas of the tourist spots. This will make it easy for the tourists to look for the public facility in the tourist destination areas (Figure 12).
8	Tourism Accommodation Menu	The accommodation menu contains information and explanations on the location of gas station, hostel, and restaurants in the tourist destination areas. This menu will help the tourists in finding the accommodation in the neighboring areas of the tourist spots (Figure 13)
9	Profile Menu	This menu contains details on the application developer (Figure 14).



Figure 6. Home (Source: Research results)



Figure 7. Main Menu (Source: Research results)



Figure 8. District Menu (Source: Research results)

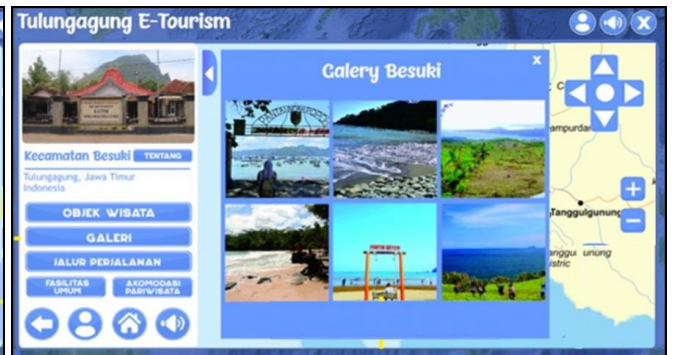


Figure 9. Tourist Destination Menu (Source: Research results)



Figure 10. Gallery Menu (Source: Research results)

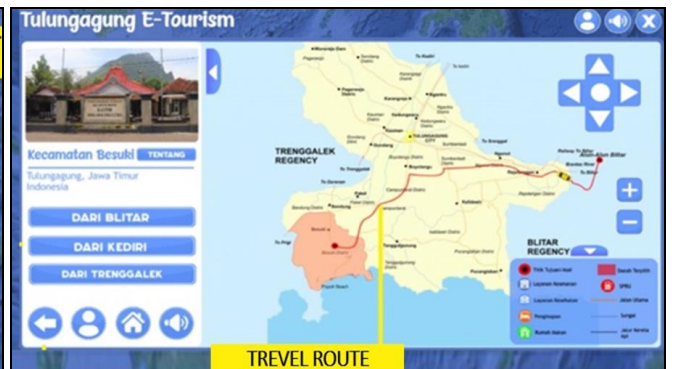


Figure 11. Travel Route Menu (Source: Research results)



Figure 12. Public Facility Menu (Source: Research results)



Figure 13. Tourism Accommodation Menu (Source: Research results)



Figure 14. Profile Menu (Source: Research results)

The development of “GoTRIP” application essentially supports the need for efficiency of the industry 4.0 era. The development of this application suits the needs of millennials who grow up closely with technology. There are six main principles in 4.0 industrial revolution: interoperability, the ability to become realtime, virtualization, always available for service, modular features, and decentralization (Prasetyo and Sutopo, 2018). This era is mainly oriented on easy communication that can be done whenever and wherever by using the internet (Kurniawan, 2020).

Technology, communication, and information hold an important roles in influencing tourism. The example is smartphones that have changed the way tourists access information on tourist destination (Buhalis and Law, 2008; Kiralova and Pavlicecka, 2015). The advanced technology also increases the tourists’ experiences in acquiring tourism related information (Wang et al., 2014). These roles including flight reservations, hotel reservations (Gretzel et al., 2015) as well as transactions (Idris et al., 2021). The impact of technology towards tourism industry has become a hot topic with the appearance of e-tourism. E-tourism enables the tourists to expand the limit of their cognitive capability of booking the travels, details, destinations, and increase the quality of their decision with visual data based recommendations (Jung et al., 2015). The tourists’ consideration in choosing their destinations start from the necessary budget for their travel, the time spent during their travel, the types of their tourism spots, the facility, the public service, the transportations, etc. The easy features of these aspects will help the tourists in choosing their tourist destination.

The development of technology in 4.0 industrial revolution should be adopted in promoting tourism. This is because the majority of the tourists want to spend their time traveling efficiently. The marketing or promotion system can increase the number of the tourists, especially with a good system that suits the needs of those who want to go to their destination, ultimately making them go for a travel often (Soteriades, 2012; Purnomo, 2020, Soteriades, 2012).

One of accessible applications with various features are “GoTRIP” e-tourism. This application uses the advanced technology in tourism industry to provide a range of different services (Soteriades, 2012; Idris et al., 2021; Sigala, 2018). This application is interestingly packed and simple, so the tourists will not be having any difficulties with the manual system. By e-tourism, the market will expand and can be accessible with virtual marketing.

Currently, android-based information system has become an integral need for people, not counting the internet that make it all easier for the tourists (Buhalis and Law, 2008; D’Silva, and D’Silva, 2008; Kiralova and Pavlicecka, 2015; Himawan, 2015, Huang et al., 2017; Idris et al., 2021; Li et al., 2017). They no longer have to wait because the information has been saved in the android and can be accessed quickly (Rusdina et al., 2016).

In addition, the tourists can also use the internet, smartphones, and other products of technology during their travel while accessing the application because of its accessibility and easy-to-connect features. Therefore, technology, information, and communication have successfully changed the global tourism domain and also hold an important role in expanding the market of tourism industry (Jovanović and Njeguš, 2008).

## CONCLUSION

The results demonstrate that the “GoTRIP” e-tourism application is very feasible to use in tourism promotion and to support the tourism in Indonesia. This is proven by the media testing results including the usability of 96.4 % and 92%, the functionality of 87.5% and 89.35%, as well as 90% and 92.4% for the visual communication aspect.

Meanwhile, the assessment for content validator (the content) showed that the “GoTRIP” macromedia flash-based application is deemed feasible. This comes from the relevance percentage of 94.4% and 93.7%, the language used with 87.2% and 88.4%, and the accuracy 89.7% and 89.3%. As for the overall assessment, including the attractiveness, efficiency and the effectivity from the field trial showed the percentage of 81%. This e-tourism application can provide tourism related information in Tulugagung regency. The “GoTRIP” application contains information on the Tourism Destination, District Gallery, Travel Routes (Blitar, Kediri, and Trenggalek), the Public Facility (Health and Security services), and Tourism Accommodation (Gas station, Hostel, and Restaurants).

This application is very attractive and efficient, so the tourists will no longer have a difficulty with using the old manual system. The tourists can also receive tourism related information in detail and uncomplicated as well as in a quick way. They can use the application during their travel because of the easy accessibility and connection. The development of this product would be the further development in tourism media.

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