Tourism Information System at Doka Tawa Tana Tourism Village Maumere

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Abstract. Doka-Tawa-Tana is a cultural and local wisdom-based tourist destination located at Maumere, NTT. Doka-Tawa-Tana creative in packages the form of dance, music, culinary and souvenirs in the form of organic weaving to become a tourist attraction that attracts tourists to visit. In addition to earning income from the sale of woven fabrics purchased by tourists as souvenirs, Doka-Tawa-Tana also gets income from tourist visits. There are no special promotional activities carried out, either through print, electronic or online media. Information about Doka-Tawa-Tana is spread through stories, testimonials, photos and videos uploaded by tourists who have visited through online media such as Facebook, WhatsApp and Youtube. Online-based information systems are needed so that the reservation process can be carried out by tourists directly from anywhere and at any time and tourists can freely and flexibly determine the time of the visit.

Keywords: Tourism Information System, E-Tourism, Reservation System, Tourism Village, Doka-Tawa-Tana.

1 Introduction

Doka-Tawa-Tana is a tourism destination based on culture and local wisdom, located in Bola Maumere District, NTT. Doka-Tawa-Tana is creative in packaging packages in the form of dance, music, culinary and souvenirs in the form of organic woven into a tourist attraction that attracts the tourists to come visit. Every guest who visits will be clothed in traditional woven cloth. In addition, the Reta Lo'u welcoming dance depicts the warriors returning from the war bringing victory. Furthermore, local residents demonstrated the process of making woven fabrics ranging from making yarn from cotton, the coloring process, to the weaving process, as well as serving traditional food and beverage dishes. The arrival of domestic and foreign tourists has become one of the economic driving factors of the local community, especially since 2010 when 140 tourists organized by Floresa Tour-Travel stopped at Doka-Tawa-Tana to feel the hospitality of the community and enjoy the art of music and dance and see firsthand the fabric making process weaving. Besides earning income from selling woven fabrics that tourists buy as souvenirs, Doka-Tawa-Tana also gets income from tourist visits.

There are no specific promotional activities, either through print, electronic or online media. Information about Doka-Tawa-Tana is spread through stories, testimonies, photos and videos uploaded by tourists who have visited through online media such as Facebook, WhatsApp and Youtube. The absence of media (especially online media) that prospective tourists can use to view product information and make unlimited reservations on time and

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place is a barrier to Doka-Tawa-Tana in marketing its products which are not limited to the local level but wider to the national level even global.

The reservation process for the Doka-Tawa-Tana tour package is done through the telephone communication media or WhatsApp either by the tourists themselves or using a travel agency, then the manager arranges the schedule for the reservation made. An online-based information system is needed so that the reservation process can be carried out by tourists directly from anywhere and at any time and tourists can determine the time of visit as freely and flexibly as the online-based hotel reservation process that already exists on the internet.

2 Literature review

Digitalization has become the center of all processes in the tourism industry. The tourism product itself, because it consists of experience, consists of information that is produced and consumed even before the trip itself has begun. Online platforms, such as online travel agents, can enable MSMEs to reach more potential international tourists [1].

Information Communication Technology (ICT) plays a major role in the tourism, travel and hospitality industries. The integration of ICT in the tourism industry is very important for the success of tourism companies. ICT facilitates individuals to access tourism product information from anywhere at any time. Tourism companies can also reach targeted customers around the world in one click on the button after the advent of mobile computers, web technology, etc. [2].

E-Tourism consists of three main components [3], namely 1) data collection, standardization; 2) consolidation, management and implementation; 3) marketing. Based on this, the next [4] describes three main levels in the preparation of the E-Tourism system, namely: 1) the parts of the data collection, which are the basis for standardizing and consolidating data. In this section there are elements such as hotels, recreation areas, and important events that can be accessed by consumers. Therefore, data collection and application of standardization and consolidation are the main objectives in the first stage; 2) management and follow-up in this case include the design of a system that will be prepared based on the standardization and consolidation sections at the first level; 3) the application or application of the system that occurs in the framework of marketing. The third level is basically the level of delivery and dissemination of information to tourists.

Development of information systems as a medium for tourism promotion has been carried out, as has been done by [5] developing an E-Tourism application as a supporter of tourism promotion on the island of Lombok using the method of developing the System Development Life Cycle (SDLC). The system built can assist tourists in finding information about hotels, culinary, souvenir centers, and hospitals on the island of Lombok. [6] conducted an analysis and design of a web-based tourism information system as a promotional media in Tebo Regency using the Prototype method. According to [7] the use of the prototype method has facilitated the process of building, planning and carrying out quality control early on. The depiction in the form of a mock up can provide a preliminary description to the user about the E-Tourism that will be built, so that E-Tourism can be adjusted to the user since the beginning of the work, before entering into the design and writing code.

The development of information systems as the most common reservation media is carried out on hotel reservation systems and travel agents. [8], [9], and [10] developed a hotel

reservation system using the SDLC method, while [11], [12], and [13] developed a hotel reservation system using a prototype method. The reservation information system at a travel agent (travel agent) was developed by [14], [15] and [16] using the SDLC method.

Based on the description above shows the research on the development of a tour package information system as a media for promotions and reservations made specifically for a particular tourist destination such as a tourist village using web engineering methods has never been done before.

3 Research method

The method used refers to the web engineering method proposed by [17] and carried out by [18] with the following stages of system development:

a. Analysis

Stage 1 - Analysis, this first step deals with setting strategic goals for web development and analyzing how websites can achieve these strategic goals. This analysis is divided into 6 tasks, namely:

1) Technology Analysis, identify all technological components and equipment needed to build and support this site.
2) Information Analysis, identification of information needed by users, both static (web pages) or dynamic (based on requests to the database server).
3) Analysis of skills, identifying diverse skills needed to complete the project
4) User Analysis, identify all users of the site in question. This is a much more complex process than with the development of traditional information systems as user reach, and the technology used by users, can vary greatly.
5) Cost Analysis, estimated cost for developing a site is calculated, or an estimate of what can be achieved with a predetermined budget.
6) Risk Analysis, an analysis of the main risks associated with developing this site.

b. Design

After the analysis phase is completed, the system design is based on the destination documents generated from the first stage, including information design that illustrates the web structure, data structure and functions of each feature as well as graphic design which includes layout, colors, images and animations.

c. Generation

This stage includes the construction of web sites based on design documents. All resources for site development, such as hardware and software will be selected during this step. The coding step looks at the generation of all software linked to the site and installs it on the relevant Web server. Websites must be tested against as many environments and combinations of these technologies as possible in order to maximize potential audiences.

d. Implementation

At the Implementation stage, the site must be listed in the main search engine and also carried out maintenance or system maintenance. There is an ongoing process for Web developers to adopt the new technology available.

Repeat the whole process can then be done to implement new features and add website functionality. Stage Four shows how the website development methodology must be iterative and used nonlinearly.

4 Results and Discussion

Based on the stages carried out in accordance with the web development method used obtained the following results:

a. Phase 1, setting strategic objectives for developing a web-based information system that is available information and promotional media that allows Doka-Tawa-Tana to introduce their activities and products and make it easier for tourists to book tour packages directly without being limited by time and place, and flexible in determining the time of visit . From the analysis conducted obtained the following results:

1) The required technology components (minimum requirements) are MariaDB, php 7 database servers, and recommended operating systems based on Linux or Unix.
2) Identification of information needed by website users, namely tour packages, products and prices, and the availability of features for prospective tourists to make travel package reservations.
3) The skills needed for system development consist of Systems Analysts who are tasked with working on the analysis and design stages, Programmers tasked with making program (coding) following web server installation, and Operators who then operate the system on an ongoing basis.
4) System users are divided into customers, administrators and general visitors.
5) Of the four stages in web development, the biggest cost is needed at the Generation or system development stage, therefore an open source based system is chosen to minimize the costs needed to make the system.
6) The main risk associated with developing the system lies in the availability of human resources at Doka-Tawa-Tana who will manage the system in a sustainable manner.

b. Phase 2, at the Design stage, system design is carried out which includes the creation of a site map and Use Case Diagrams.

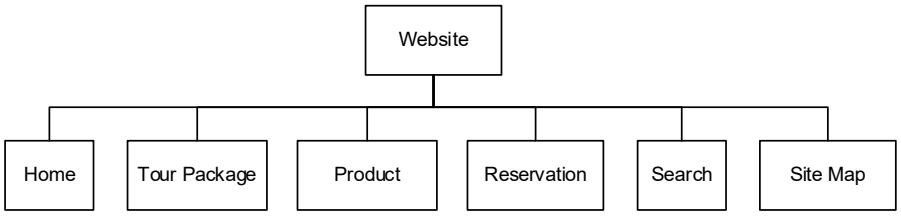

Fig. 1. Site Map.

Site Map as shown in **Figure 1** shows that on the website there is a main menu consisting of Home, Daily Life, Product, Reservation, Search and Site Map.
Use Case Diagrams as shown in **Figure 2** shows actors system is divided into three, namely customers, administrators and visitors. customers are given access to view news, information

and make reservations. Administrators have the right to manage (input and delete) daily life, product and reservation data, while visitors can only view data.

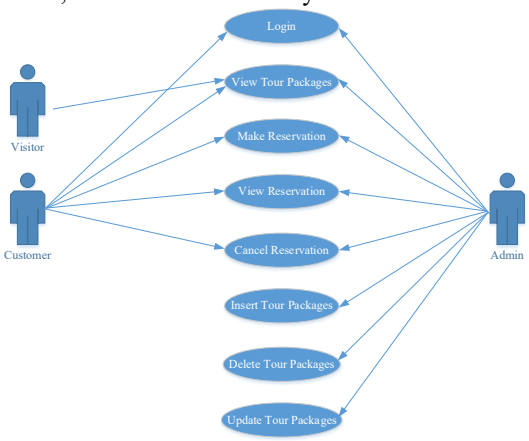

Fig. 2. Use Case Diagram.

c. Phase 3, this stage includes the construction of a web site based on the results of system design by writing source code for the program to build the system using HTML and CSS as interface design and PHP as the programming language that forms the logic of system processing and Maria DB as a database systems.

After creating a database that will be used by the system, the next step is a making an interface to the systems that been made using some tools such as HTML, CSS which are packaged in a Bootstrap's Framework. The Model of Interface structure that has been built, based on the CodeIgniter Framework which arranged in the form of MVC (Model, View and Controller). All the system interface that being shown, are arranged in 2 control files namely home.php and menu.php. The Model section in the MVC concept describes the control of database processing. This model also represents the data structure of the application which can be a database or other data. This model contains functions and classes to retrieve data, update data and delete data on the website. This model also deals with SQL query commands. The implementation of this model in the proposed web system is in the form of a PHP class function in mpaket.php that has been modified by the script according to the proposed system requirements. Below are a few lines of script from the registration and tour packages ordering system

```
function get_kategori(){
   $hasil=$this->db->query("select * from kategori_paket");
   return $hasil;
}
function get_wisata(){
   $hasil=$this->db->query("select * from wisata order by
idwisata desc limit 3");
   return $hasil;
}
function get_paket($offset,$limit){
   $hasil=$this->db->query("select * from paket order by
idpaket DESC limit $offset,$limit");
```

```
   return $hasil;
}
function
SimpanPaket($nama_paket,$kategori,$deskripsi,$hrg_dewasa,$h
rg_anak,$gambar){
   $hasil=$this->db->query("INSERT                    INTO
paket(nama_paket,hrg_dewasa,hrg_anak,deskripsi,kategori_id,
gambar)                                            VALUES
('$nama_paket','$hrg_dewasa','$hrg_anak','$deskripsi','$kat
egori','$gambar')");
   return $hasil;
}
function tampil_paket(){
   $hasil=$this->db->query("select * from paket");
   return $hasil;
}
function berita(){
   $hasil=$this->db->query("select  *  from  berita  order  by
tglpost DESC limit 8");
   return $hasil;
}
function getpaket($kode){
   $hasil=$this->db->query("select   *   from   paket   where
idpaket='$kode'");
   return $hasil;
}
```

The Controller section in the MVC concept functions to control between the Model and View sections. Below are a few lines of script to control from the registration and tour packages ordering system

```
 function pesan_paket(){
        $x['paket']=$this->mberita->paket_footer();
        $x['berita']=$this->mberita->berita_footer();
        $x['photo']=$this->mberita->get_photo();
        $kode=$this->uri->segment(3);
        $x['pkt']=$this->mpaket->getpaket($kode);
        $x['byr']=$this->mpaket->get_metode_pembayaran();
        $this->load->view('front/v_order',$x);
    }
    function order(){
        $x['paket']=$this->mberita->paket_footer();
        $x['berita']=$this->mberita->berita_footer();
        $x['photo']=$this->mberita->get_photo();
        error_reporting(0);
        $no_order=$this->mpaket->get_no_order();
        $nama=strip_tags(str_replace("'",   "",$this->input-
>post('nama')));
        $jekel=strip_tags(str_replace("'",  "",$this->input-
>post('jenkel')));
```

```
        $alamat=strip_tags(str_replace("'",        "",$this-
>input->post('alamat')));
        $notelp=strip_tags(str_replace("'",        "",$this-
>input->post('notelp')));
        $email=strip_tags(str_replace("'",  "",$this->input-
>post('email')));
        $paket=strip_tags(str_replace("'",  "",$this->input-
>post('paket')));
```

The webpage in the **Fig. 3.** below is a form that is used to register and order the tour package in website of Doka Tawa Tana.

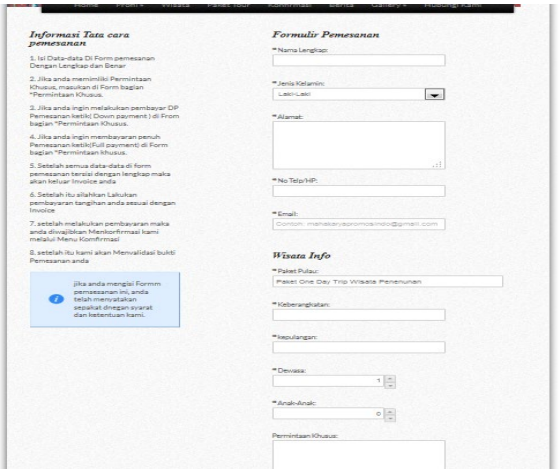

Fig. 3. Form registration and tour package ordering system

In Phase 3, testing is also carried out, both testing the system while still offline and already online. From the testing conducted based on the use case diagram, the results are obtained that each system user can access system features in accordance with the specified access rights restrictions.

Testing of the implementation of the system web based, showed that in the **Fig. 4.** below

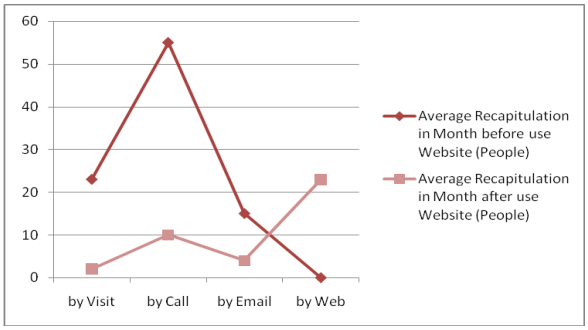

Fig. 4. Estimation Time of Recapitulation Process on access the website

That, the number of people who is coming directly to Doka-Tawa-Tana that occurred in a month, which was around 91.4%, while the number of callers who asked for information and

reservation about Doka Tana also decreased 75%, then those who communicated and sent files via Social Media also decreased by 54%.

d. Stage 4, due to device limitations and management resources, the implementation of the system uses server hosting. In Phase 4, a maintenance process is also carried out which is an ongoing process for web development that adopts new technology that is available and adapted to the addition of user requirements for system facilities.

5 Conclusion

There are similarities between the web development methods used with traditional information systems development methods, namely there are stages of goal setting, defining needs, analysis, design, system development (coding) and implementation.

With a web-based information system can help Doka-Tawa-Tana in promoting its activities and products that are not limited to the local level, but wider to the national and even global level, as well as making it easier for tourists to book travel packages directly without being limited by time and place , and flexible in determining the time of visit.

The System Information was improving the demand from the tourism to know more about Doka-Tawa-Tana and also to do a reservation on tour package in there. The increase in the overall service process with an average increase of 80%, it is hoped that the promotion in Doka-Tawa-Tana will be better and faster.

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