Expanding Promotion and Marketing of Village Products Through Smart Village System

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Abstract
Several villages in South Sumatra do not yet have a way to develop and advance their economy by selling local products that they make themselves, one of which is Burai Village. These products consist of agricultural products, handicrafts, special foods and typical clothing from the village. So far, the products they make are only sold and bought by people close to the village, both people from within the village and from outside the village. That way the income of village product sellers is not that big because the products they sell don’t have a place to promote their products so that they can be known by many people and can be disseminated. To promote these village products, the author will make a Village Product catalog on the Sistem Desa Pintar (SIDESPIN) website, using the Web Engineering method and the Laravel framework to make it easier to develop the village product catalog features. With this research a village product catalog will be produced on the SIDESPIN website such as e-commerce which will be used to promote the village’s products so that they can be known more widely.

Keywords: Laravel, SIDESPIN, Web Engineering

1. Introduction
The village is a small area inhabited by a small number of people. A village has a way to make the village develop and progress, one of which is developing the village economy, by marketing the potential that exists in the village. One village that has marketable potential is Burai Village. Burai Village is a village located in Tanjung Batu sub-district, Ogan Ilir Regency, South Sumatra Province. Burai village has 1,716 residents. One of the livelihoods of the residents of Burai Village is selling village products such as agricultural products, handicrafts such as Purun Crafts, special food, and typical clothing from the village or what is called Songket. Products are purchased only by people who are close and who are familiar with the seller.

The Smart Village System is a system specifically to help focus development in areas, especially the 3T (Foremost, Outermst and Deepest) village areas (Azhiman et al., 2022). SIDESPIN itself was founded in 2021 through a university program to create a group of students called Student Innovators who aim to create various startups, or a
system engaged in each field with the ultimate the goal of impacting sociopreneurs. The Smart Village system is based on the fact that users are the main aspect that must be observed in designing digital products.

Products made by residents of Burai Village, do not yet have a place to sell and promote these products and therefore, there are not many sales and production of these products. Given these problems, a village product sales feature will be developed on the Sistem Desa Pintar (SIDESPIN) website which can later be used as a promotional site and also a place for buying and selling village products using the Web Engineering method, which is a very good method to use in a website-based application development, and also uses the Laravel framework in developing this feature which uses the MVC (model-view-controller) architectural pattern and has the Eloquent ORM (Object Relational Mapping) feature which can help simplify the development of this feature.

Eloquent ORM is an approach that translates data from a database into an Object-Oriented Programming (OOP) language. This method is valuable for expediting development, making it easier to define connections between the database and object-oriented code in the source code, and offering a straightforward syntax that obviates the need for developers to manually craft SQL queries (Alhaq & Suja, n.d.).

This feature is also known as e-Commerce. E-Commerce is a platform where buying and selling take place using the internet (Suryanto & Surya Negara, 2019). It is also a communication network that automates business relationships and workflows (Taher, 2021). E-Commerce emerged during the COVID-19 pandemic, which forced customers to use the internet and made it a daily habit in their lives (Abiad et al., 2020). The benefits that business owners or sellers can experience by using e-Commerce features include the expansion of marketing channels and increased production (Lumintang et al., 2020).

There are three main categories of e-commerce based on participant nature, namely Business-to-Consumer (B2C), Business-to-Business (B2B), and Consumer-to-Consumer (C2C) (Ayu & Lahmi, 2020). In this research, the e-commerce category used is Consumer-to-Consumer (C2C) E-commerce, which means that the feature for selling village products on the Smart Village System (SIDESPIN) website acts as an intermediary between sellers and buyers.

2. Research Method

Data collection methods in this study using Observation and Interview Techniques were chosen to gather comprehensive and in-depth information from both direct observations and participants' perspectives.
In this method observation the researcher and the SIDESPIN Team visited the village that would be recorded to be included in the Sistem Desa Pintar (SIDESPIN) website as well as village product sellers in the village. By using the observation technique, the data entered is real and there is no fake data.

In this method interview the researcher and the SIDESPIN team interviewed the village head about how village product sellers sell their products. Then the village head and village product sellers informed them that with the Covid-19 outbreak, marketing had decreased.

The Web Engineering method has several stages, which consist of communication, planning, modeling, construction, and deployment. The Web Engineering method provides ideas regarding how the system functions and can be developed for both developers and users (Taufiq, 2013). Web Engineering is an application that uses a systematic, disciplined, and measurable approach to development, operation and maintenance web-based applications (web-based applications) (Mulyanto & Setiawan, 2020). Web Engineering has advantages which lie in the principle of requirements that other ordinary web development does not have, besides that web engineering also has principles that are often known as Web Application Development (WAD), while the processes carried out by WAD are related to the techniques used (Mustakim et al., 2016). In this study the stages carried out by the author using the Web Engineering method. (Wakil & N. A. Jawawi, 2017) mentioning that Web Engineering is considered the most suitable method for web application development:

System Development Method can be explained as follows:

a) Communication

The first stage is communication. Before starting technical work, it is necessary to communicate and collaborate with customers (and/or other stakeholders), in this study the intended customer is the SIDESPIN Team. Communication is carried out with the intention of understanding the objectives of working on software projects that are being and will be developed, as well as gathering what requirements are needed so that they can help interpret software features and their functions (Puspita et al., 2019). (Mustakim et al., 2016) stated that there is a business analysis carried out during communication, the purpose of business analysis is to define what will be contained in the web application, for example web users to be built, potential changes in the business environment, integration between the web that will be built with the company's business
situation, as well as the company's database. At this stage the researcher will communicate with the SIDESPIN Team about the village product features that will be made.

b) Planning

At this stage the researcher plans how the features will be made and what technologies are used in developing this feature. At this stage the researcher creates a Use Case for Village Product Features. Use Case Diagrams aim to visualize interactions between one or more users of the system which are illustrated in the form of actor relationships and their activities in the system, Use Case Diagrams also describe the system from the point of view of system users by considering the existing functionality (Rahmanto, 2021). In this study, researchers have created a Use Case Diagram for Village Product Features, as shown in the image below.

![Use Case Diagram for Produk Desa](image)

Source: Research Result (2023)

Figure 1. Use Case Diagram for Produk Desa

c) Modelling

The next stage is modeling. This modeling stage aims to explain what is really needed or needed in the application to be run and the solutions offered so that it is expected to be able to answer what is implied from the results of analysis and data collection (Puspita et al., 2019). At the modeling stage, researchers usually make a design in the form of a database table structure and a page interface display design (Susanto & Asmira, 2017). After communicating with the SIDESPIN Team and planning
how this feature will be made, at this stage the researcher will analyze the needs from
the development of features previously obtained through communication with the
SIDESPIN team starting from the backend to displaying village product feature pages.
After analyzing, we get several databases as follows.

Table 1. Table Database Produk Desa

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Data Type</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>id</td>
<td>id</td>
<td>Primary Key</td>
</tr>
<tr>
<td>2</td>
<td>village_id</td>
<td>int</td>
<td>Foreign Key</td>
</tr>
<tr>
<td>3</td>
<td>cproduct_id</td>
<td>int</td>
<td>Foreign Key</td>
</tr>
<tr>
<td>4</td>
<td>name</td>
<td>varchar</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>slug</td>
<td>varchar</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>desc</td>
<td>text</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>stock</td>
<td>int</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>price</td>
<td>int</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>seller</td>
<td>varchar</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>phone</td>
<td>varchar</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Result (2023)

There is a Village Foreign Key Database which is used to define where the
product originates from, as well as the Category (cproduct) which is used to sort the
category of the product.

d) Construction

Construction is the stage where researchers will develop village product sales
features (Sopiah & Puji Agustina, 2022). Starting from creating a database then relations,
controllers (CRUD), and finally creating page views for village product sales features
both on the dashboard (admin) and user pages (frontend).

SIDESPIN website users who open the Village Product Sales feature will be
given several pages, namely, the first is the Products List page, which on this page will
display the categories provided by the SIDESPIN team and several village products that
have been included on the website. Second, on the Product Details page, on this page
the user is given further information about the product that has been selected, such as
the origin of the product, the name of the seller, and a description of the product. Third,
the Basket page. This page will display which products have been selected. Fourth, the
Checkout page or proof of payment, on this page the user will be given a bank account
number to continue making payments.

e) Deployment

Deployment is the stage where researchers complete research on village product
feature development on the SIDESPIN website. At this stage the researcher will publish
the results of the research on the development of village product sales features in the Sistem Desa Pintar. The function of the Deployment stage is to present what has been made before, in this case the village product features on the SIDESPIN Website to customers who will later evaluate the results of what has been presented, then customers will provide feedback based on the evaluation and experience they have received (Puspita et al., 2019). According to Mustakim et al., (2016) at this stage it is necessary to provide input to the development team and if necessary modifications will be made to the web application.

3. Results and Analysis

After obtaining the methods and requirements, an e-commerce application was developed.

The Village Products display will display all village products that have been entered into the sidespin website and there are categories that will be used later to display village products that have that category.

Source: Research Result (2023)

Figure 2. Village Product Page Display

Then, to display one of the Village products, it will display the product name, price, stock, and description of the Village Product, and if you want to order the product, the user must log in first and if there is no account yet, the user must register first.

After the user orders the product, it will be moved to the Cart page and if the product ordered is correct, the user can continue the ordering process by clicking the Checkout button. After clicking the checkout button, you will be transferred to the checkout page, and this page will display the bank account and also the amount that
must be transferred. For payments, SIDESPIN still use the transfer method, considering the short research time.

4. Conclusion

Burai Village is one of the villages located in South Sumatra. The residents of Burai Village earn a living by selling handmade crafts they produce, known as "Kerajinan Purun" (Purun Crafts). With the presence of this feature, it is hoped that the sales of village products in Burai will improve and increase. By using this feature, village products that were previously only known to the local community can now be recognized by a wider audience, especially in Indonesia. This village product sales feature was created using the Web Engineering method, which has easy-to-understand stages, particularly in the development of web-based applications. This feature was developed using Laravel as its framework and MySQL for its database. It was designed in a simple manner to ensure that users, administrators, and sellers can easily use this feature. With this feature in place, it is hoped that the sales of village products will increase and expand the marketing reach for these village products.

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Author Contributions

Muhammad Raihan's contribution is developing the Village Product feature and collecting village product data; Edi Surya Negara assisted in writing the research.

Conflicts of Interest

The author declares no conflict of interest.

References


