SYSTEM DESIGN SINGLE VENDOR MARKETPLACE

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Abstract

Single Vendor Marketplace is a web-based application or mobile-based application where there is only one seller who provides products. Seller sales transactions only involve sellers and buyers directly without any third parties or intermediaries. The advantage of this system is that you can manage your profits directly yourself. Some also call this application a stand-alone website. The revised Borg and Gall research and development method allows the system design of this information system to be completed well. This design process has several stages. The Borg and Gall development model has a series of steps or stages consisting of information gathering, planning stage, initial product design development stage, field trial stage, main product revision stage, field test stage, operational product revision, field testing stage, product revision stage final, and also the socialization and implementation stages. A structured system design is needed at this stage where in general the design consists of system design, database design, interface design, and prototype product design. It is hoped that this marketplace application with a single vendor system can improve the quality of management thereby increasing business profits.

Keywords: single vendor, web-based, mobile-based, stand-alone, marketplace

INTRODUCTION

Technology is developing so fast and entering all fields. One of the technological developments has entered into sales transactions, namely the online marketplace (Nasution et al., 2022). A marketplace is a platform provided for sellers to gather and be able to sell goods or services to customers even without physically meeting them. In Indonesia itself, several marketplace platforms are becoming a trend, each with its advantages and disadvantages (Wulandari et al., 2020).

Some marketplaces are developed by start-up companies, some are started by small companies. Most of the existing marketplaces are founded by start-up companies because some companies need large funds at the beginning (Achmad et al., 2022).
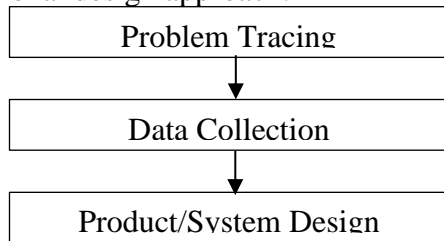
Meanwhile, the opportunity for small companies to develop their business in the marketplace is through a single vendor. (Himmah et al., 2019). This is because it does not require large costs at the start. A single vendor marketplace is where there is only one seller on the marketplace platform. This means that the seller and system manager in the marketplace are the same person or company (Saptri, Selfi, Berliana & Nasrida, 2023). Apart from being an opportunity because it is rarely implemented, this concept also has the advantage that financial management can be managed by the company itself.

METHOD

Research and development according to Borg and Gall is research and development is a powerful strategy for improving practice

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(Okpatrioka, 2023). It is a process used to develop and validate products. The method used is the revised Borg and Gall. The steps consist of problem tracing, data collection, and product design (Komara et al., 2022). Product design is the system and database design of a single vendor marketplace using a traditional design approach.

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┌─────────────────────────────┐
│      Problem Tracing        │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│      Data Collection        │
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┌─────────────────────────────┐
│    Product/System Design    │
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Figure 1. Methodology Step

Based on Figure 1, the first stage is problem tracing. This stage is carried out using a literature study method which is searched through trusted sources, for example in journals, books, or existing marketplace systems or platforms. In this research, data collection was carried out using 2 types of data, namely primary data and secondary data.

Primary data is data that in the study is directly taken from the main or first source. Meanwhile, secondary data is data collected from agencies or places related to research, for example existing marketplace companies (Yuliani & Banjarnaho, 2021). Meanwhile, the data analysis method used is a qualitative descriptive data analysis method.

This analytical method is useful in developing a theory made from data obtained in the field. At this stage, researchers explored several existing platforms, for example, Shopee and KAI, then collected in-depth data starting from observation to compiling a single vendor marketplace data requirements report.

## RESULTS AND DISCUSSION

Results

An example of a single vendor application is KAI ACCES. The products sold are train tickets issued by KAI. An example of a multi-vendor application is SHOPEE. In this application, Shopee does not own the products that are sold, but those who sell are other people or companies.

A single vendor usually displays fewer products and only displays certain company segments so that the company receives all the selling price profits. A single vendor will be more useful if the product being sold still building their name or brand. Observing the implementation of these 2 types of marketplace can be concluded.

Multi-vendors have many sellers who sell their products through a shared store, thus providing the opportunity for high-profit margins. Additionally in the system, more transaction traffic, many discount offers, and more scalable than a single platform, but will involve higher development and maintenance costs.

Choosing whether to use a single or multiple vendors depends on the scale of the business, which is why a single vendor is more suitable for small companies starting from scratch. Meanwhile, multi-vendor is more suitable for start-up companies because funds are provided at the start.

Discussion
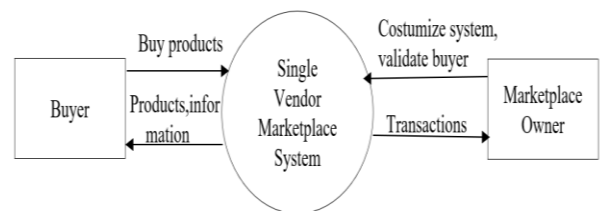
Figure 2. Context Diagram level 0

Figure 2 describes the relationship between the system and the people who communicate with the system. In this context diagram level 0, there are 2 actors, namely the buyer and the system owner. Buyers communicate with the system by carrying out input activities. The input is to purchase a product which consists of opening the system, registering the system, searching for the product in the system, selecting the product, and making a product payment transaction.

The second communication is output. Buyers get output from the system in the form of products and information. This output consists of information on products sold from specifications to prices, information on purchasing procedures, and purchase transaction information.

Then the second actor related to the system is the owner or can also be called the manager/company. In this case, it is written as owner. The first communication between the owner and the system is input in the form of customizing the system and validation. This input activity consists of customizing system pages, validating buyers, checking payments, checking purchase status, and sending purchased products. The second communication is a transaction. This transaction consists of buyer information and purchase transaction information.

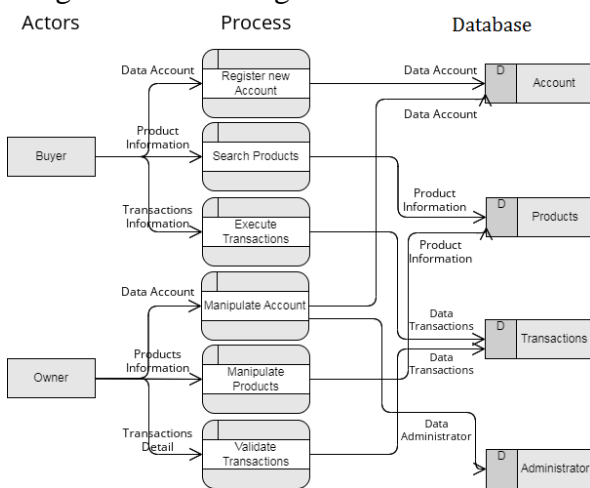The second design stage is system design in Data Flow Diagram Level 1. The image is shown in Figure 3.

Figure 3. **DFD Level 1**

Figure 3 shows the level 1 DFD design of the system. First, buyers can register buyers which will be saved into the account database. number two, buyers can search for products, where in this case the database accessed is the product database which contains product information. Number 3, buyers who have chosen a product then carry out a transaction by selecting the amount, payment method, and delivery place. This process will refer to the transaction database.

Next is the owner. The owner can enter the system to manipulate the account. Here the owner can view the buyer's account information, and change or even delete the account. not only the buyer's account but also the account that will be made administrator. The administrator account is the account that has the highest authority in the system, such as the owner who can carry out many processes.

Buyer account manipulation will be saved and pull data from the account database, while administrator account manipulation will be saved and pull data from the administrator database. number 3, the owner validates the transaction by checking purchase details, payment details, and other information regarding the transaction carried out by the buyer. This data will be stored in the transactions database.

CONCLUSION

The conclusion from this single-vendor system design research was that the development of a single-vendor marketplace system design can be developed using software development stages consisting of several stages of the Borg and Gall model. These stages were needs analysis, data collection, and then designing design drawings which consist of system design using a structured approach. In this design, it was developed by creating DFD level 0 and DFD level 1. In this design, it can be seen that the purchase transaction process can be carried out using a single vendor model. This development will be even more optimal if it continues to develop prototypes and test the products.

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