



Ecommerce Design Based Multi Vendor Case Study PT. Mutiara Katalog Indonesia

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ARTICLE INFO

Article history:
Received: 07/01 / 2020
Revised: 09/01 / 2020
Accepted: 01/02/2020

Keywords:

Sales, multi-vendor, shopping, Ecommerce

ABSTRACT

In the beginning, PT. Mutiara Katalog Indonesia. In selling goods is still the traditional way. To achieve sales targets to consumers is still very difficult, recording sales data is also still using manual methods that use paper and books. Traditional data collection errors often occur so that this results in losses for the company. At present Ecommerce as a medium that can provide convenience for traders, in addition to wider product distribution and to achieve a more targeted sales approach. For Ecommerce transactions can be done with electronic media in an automatic way. With a descriptive method that applies data retrieval by interviewing also seeing firsthand the conditions in the field and study of literature, a problem is found to develop and find possible solutions, namely, how to improve operational performance and expand market share for this store. Application of eCommerce technology as a more effective and efficient way. This can also save data processing time and tend to be more accurate and faster in making reports to the owner. The preparation of the application includes the development stages which include requirements analysis, making data flow diagrams with UML Modeling as well as WEB-based programming languages namely PHP, Ajax, Jquery, Json and Mysql. For testing the system using the Black Box and Alpha methods.

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1. Introduction

The need to control every aspect of information systems has marambah business systems including the use of information systems in business activity sales, better known by the term e-Commerce, this business venture has provided a variety of opportunities for commercial transactions. All businesses easily establish a business relationship with other business and has a direct relationship with consumers.[1]

PT. Katalog Mutiara Indonesia is a company engaged in trading of various products such as electronics, gadgets, fashion products, accessories, perfume, clothing and many others, established since approximately 9 years.

In the process of the sale of PT. Pearl. KI. Still using media that is simple and does not take advantage of computer technology to the maximum, the implementation of promotional effort with flyers or banners are also used to introduce the product.

In ways that make promotional products that do become less effective, in practice a lot of obstacles on the media so the promoted product does not reach the sales objectives and the results become widely known by the public.[2]

While many vendors (sales) want to enter products and work in this company but have difficulty in administration manual recording, it is also very efektifive because the sales target is less extensive that vendors who wish to cooperate in the sale of the product is very difficult to achieve sales targets. Such constraints caused the lack of the proper application of information technology.





Monitoring and Controlling the current sales desperately needs a modern information technology system ie sales by building e-commerce based *multi-vendor*, Making it easier for the manager or owner (owner) to take the necessary decisions on future product sales. [3]

Development of e-Commerce websites based multi vendor can help sell services directly to customers and can help generate income to invite various vendors to sell their services on the site. Shopping in the e-Commerce-based multi-vendor also can make it easier and also help the customer (Customer) to be able to access many profiles of many companies at once.

2. Method

a. Definition of E-commerce

Definition According to Jony Wong (2010: 33) understanding of electronic commerce is the buying, selling and marketing goods and services through electronic systems. Such as radio, television and computer networks or the Internet.

So the notion E-commerce is the process of buying and selling transactions conducted via the Internet where the website is used as a container to carry out the process.[4] Based karakteristiknya Types of E-commerce can be divided into several, namely:

1) Business to Business (B2B), Business to Business has the following characteristics:

Focused on providing products from one business to another business. Trading partners who already know each other and have already established a relationship that lasted long enough between them. Data exchange is done repeatedly and periodically with the data format that has been agreed upon, exchange and transmit data do not have to wait. Using peer-to-peer model, in which the processing intelligence can be distributed across both businesses.

2) Business to Consumer (B2C) has the following characteristics:

Open to the public, publicly accessible information and free service that used to be used by many people, with web-based. Service on request. Manufacturer if the consumer requests must be ready to respond. Client-server approach is often used.

3) consumer to Consumer (C2C) has the following characteristics:

In a C2C consumers can sell their goods directly to other consumers, or can be referred to those who sell products and services to each other.

Example:. Advertise their services or product on the internet and sell their knowledge and expertise. Such as eBay.com site as the auction company.

4) Customer to Business (B2C)

Customer to Business is a business model in which consumers (individuals) create value, and the company taking this value.

For example, the Internet can be used as a means of negotiation, when consumers provide useful ideas for the development of new products, then this individual is creating value for companies that adopt its input. such as, Priceline.com is a site that allows customer sell goods to the company.

b. Benefits of E-commerce

1) Increase market exposure (market share), on-line transactions for people all over the world dapatm Memesan and buy the product through computer media and is not limited to the distance and time.

2) Reduce operating costs (operating cost) transactions and operations made in dalam komputer so the cost of such a showroom, excessive salary burden need not occur.

3) Expanding the range of (global reach) can be accessed by everyone using a computer intermediary media.

4) Improve customer loyalty, providing complete information and accessed at any time so purchases can be made any time and customers can choose the product that is desired.

5) Improving supply management E-commerce transactions that provide efficient results on the company's operating costs, so less use of employees and the number of stocks available.

c. Benefits of E-commerce Solutions To Customers (Customer)

For customer can do shopping transactions 24 hours a day. Customers also have many choices of goods to be purchased and can do price comparisons with other companies. Another advantage is the customer does not need to queue up to get the goods.





d. Marketplace

Market place is a container transactions for sellers and buyers, sellers herein may be the Company's vendors and individuals, as an internet-based online media (web based). Buyers can search for the desired vendor, so it can perform price comparisons of certain products as desired. As for the vendor / seller can find companies that require their products / services. Marketplace is a model of the E-Business related to vendor and buyer (seller and buyer).[5]

a. writing papers

In this study is qualitative. This paper uses secondary data, where N is derived from the data collection process journals, internet, documentation and statistical data of the company.

Stages of research include the identification of objects, namely analyzing ongoing information flow. This activity didaplatlah understanding of the problems of management of sales data that are running.

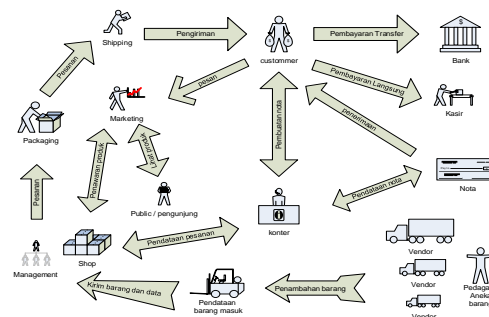


Fig 1. Illustration of sale system is running.

Illustration in Figure 1. Displaying the system is running is going on. In this process, if consumers find goods they want and order goods the next step towards the payment transaction or a bank cashier, while the goods supplied by the vendor kept small, medium, or large. Besides the vendors of the Company (Company) are also suppliers of the individual (individual) as traders of goods to the store management.

3. System development

To use Method Systems Development at FAST (Framework for the Application Systems Thinking), which includes the Scope Definition, Problem Analysis, Requirements Analysis, Design Logical and Physical Design.

a. Scope Definition.

Initial design stage begins from here that is defining the scope of multi-vendor information system Ecommerce determined.

b. Problem Analysis.

These stages Problem analysis for defining the scope of the development of information systems sales.

c. Requirement Analysis.

This stage includes the effort to get the data and analyzed user needs and the needs of the sales system.

d. Logical Design.

Making the design is based on the model proposed as a diagram for an object-oriented design methods, Implementing the use of UML (unified modeling language) and the use of software Microsoft Visio to create a model diagram.

e. Physical Design.

At this stage, translating the logical design into the physical form in which there are application system design activities and design user interface design detail.

The method of application of the above then continued with the testing stages. Stages blackbox testing testing testing is considered more appropriate for this study. This test method perform functional test processes on the need for software development approach in its implementation makes the set as an input condition that is also a functional test data and the output of the system to find the fault. Errors that





investigated seen in several categories and functions are missing, including the form of input and output errors are also errors in the structure of the external database. Making the design is based on the model proposed as a diagram for an object-oriented design methods, Implementing the use of UML (unified modeling language) and the use of software Microsoft Visio to create a model diagram.[1]

Later in the process of designing this system the authors use the programming language PHP (ver.7) that runs on the server-side. To support the dynamic needs of the system that is user friendly and quick data search process that is focused on data search sub-category, category and product, then applied support system using Ajax and JQuery methods as part of a system that works on Client-side. For web application servers using Apache Web Server software and MySQLi.

4. Results and Discussion

a. Identification Actor

The actor is someone who can interact in the environment so that the system can use the information presented to their needs.

Actor identification obtained from the stages of data collection, documentation, interview and observation. Based on the type of actors and activities undertaken then the actor can be grouped into several actors. Then the type of actor who has been identified in the multi-vendor system eCommece information is grouped into five types of actors:

- 1) Main Business Performer / Primary Business Actor (PBA) is a stakeholder who benefit measurably from the system.
- 2) Actors Key system / Primary System Actor (PSA) is a stakeholder directly related to the passage of the system to trigger the system.
- 3) Actors Server External / External Server Actor (ESA) is to serve the needs of stakeholders who use use-case.
- 4) Actors Recipients External / External reciving Actor (ERA) is a stakeholder that is not the main actors, which serves the needs of the use of the system.

Based on the analysis stage can be seen that the actors involved in e-commerce management information system is the Consumer, Admin, Corporate Treasurer, Chairman of the Company, the Vendor. Here below is the explanation regarding the identification of the actor.

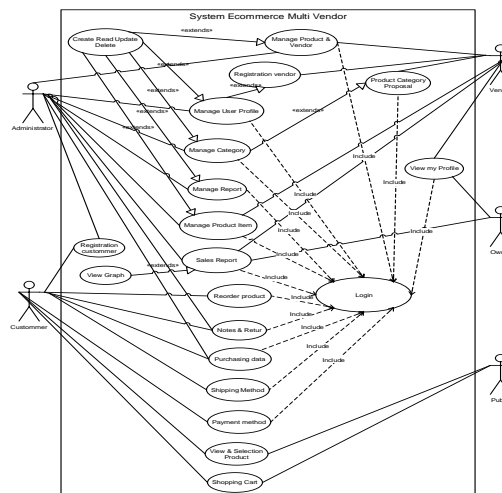


Fig 2. Use Case Diagram Ecommerce models.

Based on Figure 2. Use Case proposed are a form of system to regulate sales transaction-based data collection are many suppliers of goods (eCommerce multi-vendor). In the system consisting of 5 (five) Actor, who was instrumental in conducting eCommerce transactions:

- 1) Administrator comprising Sales Manager, Financial Manager, Production Manager, IT Manager and staff.





- 2) Vendor (Company) which is a member enrolled in the surveillance system administrator as a supplier of goods. Vendors in this case can be more than one and the number could very much if it is accepted as a member of the vendor by the administrator. Vendors also can include individual traders (individuals) if qualified to be the supplier of the goods.
- 3) The owner (Owner) As a business owner who can see the condition of the last report of sales per month.
- 4) Customer, is a very important element in this system, because the input data from customer is a sales transaction that will be able to move the system in the course of this multivendor eCommerce business.
- 5) Public, which is an element or part of the external system can only view and can be shopping (shopping) in limited measures, what if someone from the public online to shop, he has to register (Registration) to make payments as a registered Customer.

There are eight (8) Use Case main, Product Data, Data customer, Order Data, Data Vendor, Data Kategori data and sales reports, user data (the user). There is one (1) Include ie login, 7 (seven) extend that process to Add, Update, Delete User Data (User system) and Create, Edit Data Sales Data entry of goods from a vendor, Create, Edit Data Customer, Create, Edit , Print pdf file / print.

b. Class Diagram

Class diagram describing the logic of the relationship between object classes and class. of objects that are equipped with the object's properties in the system, which also restricts relationships between objects, this section provides the operating functions of a class. There are three main parts, namely the class diagram attributes, name and operation.

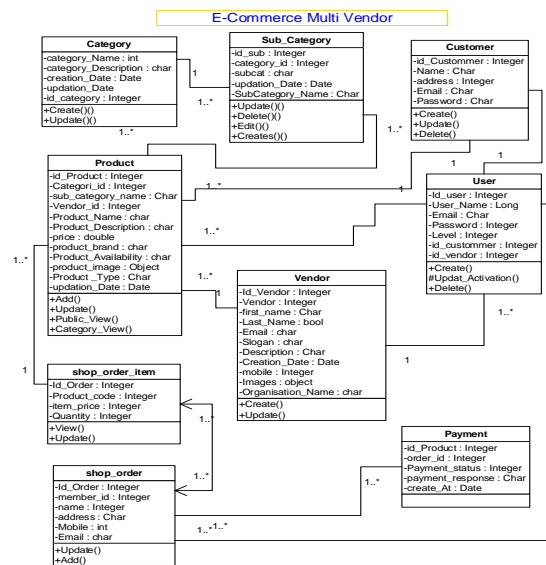


Fig 3. Class Diagram System.

In Figure 3. Shows a proposed class diagram, here there are several classes, including:

- 1) 9 (nine) object class and also some of the main attributes, including the following: Category, Sub_category, Product, Vendor, shop_order_item, shop_order, payment and user.
- 2) There are ten (10) multiplicity whose function linking between objects.
- 3) Class object of this proposed more shows on the performance of the operations performed in each class.

c. Entity Relationship Diagram (ERD)

Entity Relationship Diagram (ERD) is a diagram showing the corresponding entity relationship in a system. Entity is the process of collecting data to generate information that has a function as a supporter of the system. Entities involved and the relationships that appear here later will be used in designing the necessary database needs.



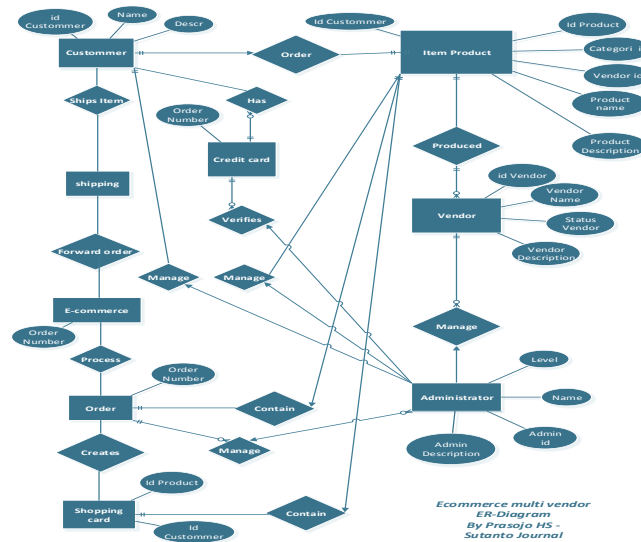


Fig 4. Entity relationship diagrams.

Figure 4. more detail by disclosing relationships between entities that relate to each other and form a unitary system. Entity relationship towards another entity has a relationship cardinalitas different and seemingly restrictions that can be done in the relationship formed between the entity. Attributes depicted is part of the main attributes that tend to have higher with cardinalitas relationship.[4]

d. Ecommerce System Views Multi Vendor in Deploys.

Display E-commerce multi vendor in show the major steps which process has an important role in this transaction. Views are divided into two main parts, the part of the interface that is intended for public visitors (customer) as a visitor or buyer of the product, then the second part is dedicated to the Administrator, Vendor and Owner as media owners of this site.

- 1) Display the visitor interface.

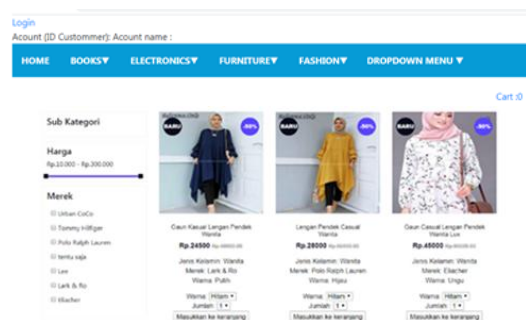


Fig 5. Display the main menu eCommerce Multi Vendor.

In Figure 5, the main menu looks to give a choice of several Kategori and sub Kategori that can be selected by customer and public. In this view looks menu with some Kategori from several vendors listed. The image also explains the appearance of products which are automatically displayed with the filter by price range (price), brand (brand) color (Color Product), type (Gender) specific. Filter product adapts subkategori selected and adapted to display the type of product. The shopping cart in preparing for the addition of data from Customer or public visitors.



Gerobak saya
Troli Saya (3)

Produk	Harga	Kuantitas	Subtotal
Gaun Kasual Lengan Pendek Wanita—	24500	<input type="text" value="1"/>	Rp 147000.00
Lengan Pendek Casual Wanita—	28000	<input type="text" value="1"/>	Rp 168000.00
Gaun Casual Lengan Pendek Wanita Luxe—	45000	<input type="text" value="1"/>	Rp 360000.00
			Total Rp 675000,00

Fig 6. Display shopping cart (shopping cart).

6. A display on the image of shopping carts are summed after customer try to make a purchase, the purchase of this testing customer can make transactions before registration. In the next step of the process of public payment (Customer) must go through the registration and login process.



Fig 7. login.

Figure 7. Display login, customer after an account owner can then continue shopping to the payment.



Fig 8. Display process payment method.

Figure 8. Display test online or offline payment process, here customer can select a preferred payment method.

Rincian Pengiriman Pelanggan

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Lanjutkan ke pembayaran

Lanjutkan Belanja

Fig 9. Display stuffing shipping destination details.

Figure 9. Display the final test data collection process to spot and address clearly targets the delivery of goods paid by customer.



Fig 10. conclusions Display the purchase of goods.

Visible in the Fig 10. The results of the process of shopping carts. In this step the shopping cart data began to be kept in the database. From a series of these steps then customer can immediately complete the payment method in want it is online or offline.

In the next process which is also an important part of this system is the process of the Administration (Admin / setting data).

2) Display the Administrator, Vendor and Owner.

Administrator section that includes vendor and Owner also admin as managers. In the transaction data collection for further regulation can be given to a vendor if necessary, for example, occur as sales and order goods from customer who need the goods with certain specifications and demand vendors to report sales of her products.



Fig 11. Dashboard Display.

Views on Figure 11. Shows the business (Admin, Vendor, Owner) if it successfully into space data administration through registration and login. Every business has the capacity and authority are different for these settings.

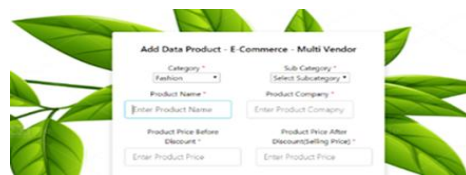


Fig 12. The addition of the product by the Vendor.

In Figure 12, look to see the addition product from a Vendor (Company) registered. In this process can be set for a further adjustment capability in the use of administrative data, this setting can only be done by the developer that the author himself.

3) A reporting view for the Owner and the Vendor.

Reports from the sales transactions reported through the form of charts and if desired can be in the form of table data. Preparation of the report includes sales report the number of products sold and report each month of the total product within a certain time (per year).



Fig 13. Reports product sales.



Reports on the image 13. Shows the three products tested by developers as the product sold are shown in graphical form. In this test some products are still empty because they have not sold.

5. Conclusion

Based on the application that the author made and test results, it can take the conclusion that the system of multi-vendor eCommerce can facilitate transactions for customer and can provide a lot of products from various vendors. The payment process for customer become more easily because the system of payment through online and offline. Increase the number of online sales that can provide income for the Owner and the Vendor.

It easy for vendors to join (registration) and determined the type of product by category and subcategory own that can be done automatically. Avoiding mistakes memorandum charging sales transactions because it uses an integrated system based on the transaction entrian customer and data product from a vendor, the system becomes more efficient and effective.

The calculation of the sales transaction can be calculated automatically and avoid miscalculations as the data collection system using multi-vendor eCommerce has been tested and programmed with precise and accurate.

To provide convenience for Customer to find the product they want, because it uses ajax method application in its implementation.

Generate reports sales of goods more efficient and easy to understand it so that it supports in the decision-making for the Owner and the Vendor as the main actors of this business.

Troubleshooting ordering goods from customer, this condition is caused by a pre-programmed with the readiness of the system can accurately record the information needs of Customer and forwarded to the vendor concerned.

In a system that was developed and tested by the method of Black Box testing feasible and acquired 100% of the test results Alpha test also gives a 81% strongly agreed while the remaining 19% agree. Then it can be concluded from the test results that the application is fit for use and can be applied to the system sales of the Company well.

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