# Design of E-Commerce Payment System at Tokopedia Online Shopping Site

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#### **Abstract**

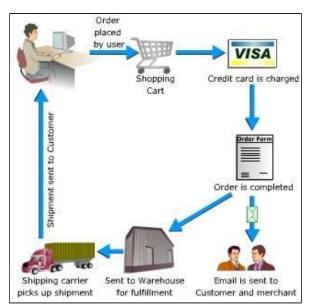
Developments in information technology very rapidly in recent years a positive impact on many aspects of life, including in the business world. One concept that is assessed that the new business is E-Commerce or Commonly called Online Business. There are many sites that do Transactions of Goods or Services through E-Commerce, for example, the Sale and Purchase at online shopping sites in Tokopedia which emphasizes the Transaction Customer to Customer (C2C). C2C is one model of e-commerce in this case consumers sell directly to consumers who want to buy, or may be called as a transaction between the consumer. Activity C2C can be done in many ways over the internet. Auksi is one example of the best known C2C activities. Many people make purchases and sales on eBay and hundreds of auction website. Other examples of C2C activities are classification advertising, personal services, exchange, sale of virtual properties and supporting services. In the online shopping site that emphasizes C2C Transactions Transactions Using Transactions Rekber piggybank so as to secure for consumers. Rekber piggybank principle similar to that occurred in Escrow Payment System, the system Rekber piggybank an agreement between the seller and the buyer or producer and the consumer to use the services of a third person as the place of payment and the payee. Therefore Rekber piggybank exists to support and secure the sale and purchase of Online Transactions on the site piggybank. So that the transaction using the system Rekber piggybank can be used as a system that can promise Consumers and sellers can trust each other.

Keywords: E-Commerce, C2C, Rekber piggybank

## 1. Introduction

E-commerce is business activities involving consumers (consumers), play a central role in the economy, manufactures, service providers and intermediaries by using computer networks, which are traded over the internet [2]. Basically E-commerce is the impact of the development of information and telecommunications technology such as web has the potential to radically. So that it significantly changes the way humans interact with their environment a journey beyond the unknown be unknowable, which in this case is related to trade mechanisms.

Various online trading such as Tokopedia requires a payment system that is easy to use in making payment transactions, for which an electronic commerce (E-Commerce) payment system can be used. The purpose of e-Commerce generally makes it easy for consumers to buy products online. With a good understanding of e-Commerce, it will bring the company to maintain customer loyalty, especially customers. The benefits and advantages of using e-commerce is for media promotion in order to increase sales volume, both for online and conventional sales



Source: Transactions on E-Commerce (2014 : delvmi.wordpress.com) Figure 1. Examples of transactions on E-Commerce

Problems in this method Before the existence of the internet, the perpetrators of economic activities carried out their activities in the traditional way. Starting from trading [5 ,] [7], shopping and even auction activities are carried out by face to face. Like consumers who buy goods in stores or look physically so there is a meeting between traders and buyers. The transaction process, bargaining and the strategy of traders in attracting consumers is also evident. However, thanks to the internet created online trading technology that is integrated with the system commonly called online shop. With payments with E-commerce it can cross geographical boundaries, get new customers through search engines, lower costs, find products faster, eliminate travel time and costs, provide comparison shopping, provide lots of information, facilitate business communication, open all the time.

Regarding Online Business Taxation Provisions from the State Budget, Director General of Taxation Regulation No. PER-32 / PJ / 2010 of 2010 concerning Implementation of Article 25 Income Tax Imposition for Certain Private Business Taxpayers ("Perdirjen Pajak 32/2010"), individual entrepreneurs through internet media (online) must pay income tax according to the rules[11]. Even though they do not have a physical place of business, the obligation to pay income tax is still binding on them.

## 2. Research Method

The current system procedure in the online shopping payment process contained in Tokopedia still runs manually after making payments via bank transfer to one of the account numbers in the name of PT [12-13]. Tokopedia buyers are also required to confirm. Payment Tokopedia alone gives 3 days to confirm payment, starting from the payment made. If within 3 days, the buyer does not confirm payment, your order will be automatically canceled by the Tokopedia system.

The running system can be done by filling out the search box related to what product you are looking for and then a list of products that relate to the keywords you are looking for will appear. If you are sure of the seller's reputation, then proceed with the "BUY" process on the previous page [14]. fill in the payment form and select the payment option then click the letter shaped icon then select payment confirmation then click the order checkbox that has been paid then click confirmation, after that the Payment Confirmation form will appear. Fill in all the data correctly, then click the YES button.

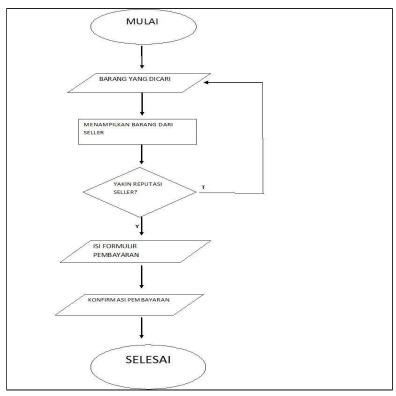


Figure 2. Flowchart of the manual confirmation payment system

The ineffectiveness of the service prolongs the buying and selling process because the buyer must confirm with the time limit given for three days to the company PT.Tokopedia if forgetting to confirm the order will be canceled automatically. In addition, if you have confirmed the buyer must wait for payment to be verified. The formulation of the problem in this study is how to automatically update the verification system at PT. Tokopedia by using the Rekber payment method.

Based on the formulation of the problems that have been identified, the goal to be produced is to create a system that can manage financial data, create a system that is able to control the financial status of the company, create a system that is able to help PT. Tokopedia.

#### Literature Review

Literature review is written material in the form of books, journals that discuss the topics to be studied. Many previous studies were carried out regarding virtual accounts. In an effort to create a virtual account, it is necessary to study literature as one of the application of research methods to be carried out. The following are 6 studies that have been conducted and have a correlation in line with the research that will be discussed in this journal, among others:

- 1. The research conducted by Dian Wirdasari in 2009 was titled "E-Commerce Technology in Business Processes". In this study E-Commerce provides infrastructure for companies to expand internal business processes to the external environment without having to face time and space. The results of this study in the form of expanding the network of business partners and efficiency in other words speed up service to customers and more responsive services and reduce costs associated with paper, such as the cost of postal mail, printing, reports, etc. so as to increase revenue [1].
- The research conducted by Jaidan Jauhari in 2010 was entitled "The Efforts to Develop Small and Medium Enterprises (SMEs) By Using E-Commerce". To improve the

competitiveness of SMEs and to get export opportunities and other business opportunities can be done by utilizing the development of Information and Communication Technology (ICT), especially e-commerce. Not only use the internet as a tool to promote or look for business opportunities, but it must also be balanced with good administrative management through the use of appropriate software. Website development and e-commerce need to be done as a means to promote and market business products, so that it will increase sales volume and increase revenue [9].

- 3. The research conducted by Sandy Kosasi in 2015 was titled "Designing and Utilizing E-Commerce to Expand the Furniture Product Market". This study aims to produce an E-Commerce system for furniture products through database integration and fostering customer relationships so as to facilitate the flow of information and decisions to expand the marketing area and market share. Market expansion analysis method uses market opportunity analysis, and uses the design of a business model, customer interface, market communication and implementation design. The design of E-Commerce uses the Rapid Application Development (RAD) method and for system modeling it uses the Unified Modeling Language (UML). This system specifically eliminates the role of intermediaries, reduces marketing operational costs, flexibility in informing all goods, transparency of goods prices and shipping costs become faster and more controlled [15].
- 4. Research conducted by Gian G Maulana, Rispianda in 2015 this study was entitled "Information System for Tour and Travel Services Based on E-Commerce Website". The stages carried out in the design are analyzing the tour and travel information system with the development of SDLC (System Development Life Cycle), modeling the design with data Flow Diagrams (DFD) and Entity Relationship Diagrams (ERD) and implementing the design of information systems based on electronic commerce websites. The result of this implementation is to provide facilities that are designed in an integrated manner to help companies improve the order process, expand marketing and increase customer loyalty [6].
- 5. The research conducted by Khanna Tiara, Erwana Amarulloh Sunarya, and Muhammad Ichsan in 2016 was entitled "The Use of Blackpanda Accounts to Secure Sale and Purchase Transactions Online at Kaskus Sites". Kaskus uses the E-Business C2C method or Customer to Customer and Kaskus use the Blackpanda Account Method to secure E-Business Transactions. Customer to Customer is a transaction where consumers sell products directly to other consumers, the goal to be produced is that consumers are interested in using Rekber services when shopping online and Consumers have no doubt when shopping online at Kaskus. The benefits of this study so that consumers can better understand what is record and how to use it, in addition so that consumers are interested in shopping at online buying and selling forums at Kaskus using Rekber services and as a promotional media for Kaskus and Blackpanda account services [10].
- 6. Research D. K. Gangeshwer in 2013 the study was titled "E-Commerce or Internet Marketing: A Business Review from Indian Context". that most online advertising campaigns have two main objectives: brand development and direct response. The Advantages is attractive to a significant segment of the demographics for most customer profiles. It can effectively reach the target customer, Faster and less expensive to conduct direct marketing campaigns, Measurable, which means that successes are identifiable and repeatable, Open 24 hours a day, Cost-effective, in the long run. Disadvantages is There is no actual face-to-face contact involved in the Internet communication, for the types of products that rely heavily on building personal relationships between buyers and sellers such as selling of life insurance, and the type of products that requires physical International Journal of u- and e-Service, Science and Technology [4].
- Syed (Shawon) Research M. Rahman, Ph.D. and Robert Lackey in 2013 this research was titled "E-Commerce Systems Security For Small Businesses". Direct Financial Loss: Fines or other legal repercussions could occur due to violations of contracts, laws, or other regulations. Indirect Loss: Loss of Credibility: People will lose trust in business that has

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security issues, even if security issues don't cause loss or damage, loss in productivity: the availability of e-commerce systems could result in loss of productivity because employees will not be able to work during downtime. integrity and availability (CIA) are the main goals of network security. Different types of security are needed to accomplish the goals of the CIA and provide a well-rounded protection system [19].

- 8. Research D. Harrison McKnight and Norman L. Chervany. In 2002 this research entitled "What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology" would make it easier to compare and communicate results, and would be especially valuable if the types of trust were related to one other. The typology should be interdisciplinary because many e-commerce disciplines research. This paper justifies a parsimonious interdisciplinary typology and reliance trust constructs to consumer actions e-commerce, defining both conceptual-level and operational-level trust constructs. Conceptual-level constructs of disposition to trust (primarily from psychology), institution-based trust (from sociology), and trusting beliefs and trusting intentions (primarily from social psychology) [3].
- 9. Research in Irwin Brown and Ruwanga Jayakody in 2008 this study entitled "B2C e-Commerce Success: a Test and Validation of a Revised Conceptual Model" The overall purpose of the study was to re-examine the relationships between key dimensions of B2C e- commerce success in the established established theories, and to develop a revised model, and empirically validate and test the model using data gathered from a sample of online consumers in South Africa [8].
- 10. Shaun Pather, Dan Remenyi and Andre de la Harpe's research in 2006 this study entitled "Evaluating e-Commerce Success A Case Study" The following provides some indication that the current setup of the IS function is performing at a satisfactory level: There is a very small error rate recorded on the product database, the payment gateway, and checkout process works smoothly, there are a number of payment options, all of which works well. This is due also in part to strong relationships with relevant 3rd parties, The web-site was voted as the best of a 1000 sites by the public. This is an indication that it is meeting the needs of its clientele [16].

After reviewing the eleven existing literature reviews, there have been many studies on E-Commers payments using Rekber to improve the payment method. Because Online Business on the kaskus site the payment media applied is still transferring directly to online sellers therefore the authors conduct research Blackpanda to improve the facilities of online business companies in finance. Therefore the author discusses the matter of "Designing an E-Commerce Payment System at Tokopedia Online Shopping Sites" in order to improve the previous payment method to make it easier for buyers to make payment transactions on online businesses.

## 3. Result and Discussion

To overcome these various problems, it is necessary to have a system that is effective and efficient in making payments. From the formulation of the problem, it produces 2 problem solving :

Automatic verification system updates at PT. Tokopedia, it is expected that the payment system will be done automatically by using Rekber Piggybank Tokopedia Balance, Mandiri ClickPay, Mandiri E-Cash, BCA KlikPay, and Credit Card so as to facilitate identification of incoming payments, Buyers do not need to confirm again after make payments and don't need to worry about forgetting to confirm then the items purchased are canceled automatically again [17]. the buyer also doesn't need to wait for the payment confirmation time to be verified by the company PT. Tokopedia. In solving problems using mind mapping:



Source: Transaction Via Rekber Piggybank (2014: <a href="www.kaskus.co.id">www.kaskus.co.id</a>)
Figure 3. Piggybank's Record Logo

## 3.1 Mind Mapping methods

Mind mapping is a way of developing thinking activities in all directions, capturing various thoughts in various angles. Mind mapping develops divergent thinking and creative thinking. Mind mapping that we often call concept maps is a great tool of organizational thinking which is also the easiest way to put information into the brain and retrieve that information when needed

In terms of time, mind mapping can also make efficient use of time in learning information. This is mainly because this method can present a comprehensive picture of a thing, in a shorter time. In other words, Mind mapping is able to cut learning time by changing linear recording patterns that take time to be effective records that can be directly understood by individuals.

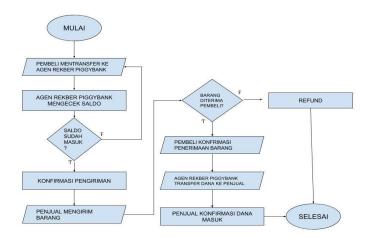
The Mind Mapping method produces the following, namely the explanation of the payment system using Piggybank Accounts is similar to the principle that occurs in the Escrow Payment system, in the piggybank rekber system there is an agreement between the seller and the buyer to use third party services as a place to pay and receive payments. The aim of Piggybank Rekber third service in online business that guarantees the security of each of your transactions from people who are not responsible, working with every online store ready to serve the buyers by offering an easy payment method[18]. The lack of Piggybank's account is that it takes a long time because Rekber as a third party in Online Transactions must pay extra fees to pay services to Rekber service providers even though the amount is insignificant. The excess of Piggybank Rekber is a high level of security. Fraud is almost difficult to do if the payment transaction is done using a joint account service. Users at Piggybank are financial heads, sellers, buyers, and third parties. The five points of mind mapping are taken based on the actual facts that occurred at the Tokopedia University of PT from the research conducted by researchers.



Figure 4. Mindmap Rekber Piggybank

## 3.2 Application Design Flowchart

Flowchart is a graphical representation of the steps and sequence of procedures of a program. Program flowchart in problem solving is a more detailed description of how each step of the program or actual procedure will be carried out. This flowchart shows each step of the program or procedure in the right order when it occurs. The following is the flowchart of the Piggybank Rekber payment using ATM at PT. Tokopedia as follows:



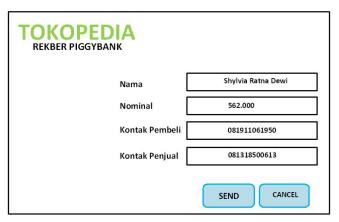
Picture 5. Piggybank's Record Payment System Flowchart

From the picture above it can be explained that the Buyer and the seller agree to buy and sell activities, then to avoid unwanted events, the buyer or seller suggests using the rekber service so that the transaction is safe, after that the Rekber agent is chosen (eg Piggybank) the buyer contacts the rekber agent then inform the required information, after which the buyer transfers to the PiggyBank Rekber agent account [20]. then from Rekber Piggybank agent, he told the seller the nominal that had been transferred by the buyer. After the funds have been received by Piggybank Account Agent, the Rekber Agent informs the seller that the goods are immediately sent to the buyer. After the item is received by the buyer, the buyer confirms to the rekber agent that the item has been received, and the disbursement of the funds is carried out. Return and Refund Process: If the item does not match or is canceled, then Piggybank Accounts will contact the seller for confirmation [21]. If both parties have agreed, the buyer must return the item and after the seller has received the item back and is suitable, then Piggybank Account will refund the buyer's fund.

## 3.3 Prototype

The system development process often uses a prototype (prototyping) approach. This method is very well used to solve the problem of misunderstanding between users and analysts that arise due to the user is not able to clearly define their needs ([Mulyanto 2009]). Prototype is a simple software modeling process that allows users to have a basic picture of the program and perform initial testing. Prototype provides facilities for developers and users to interact with each other during the manufacturing process, so developers can easily model the software that will be created. This Piggybank Record prototype is an illustration when making Piggybank Accounts payment transactions:

1. The buyer fills out the form to make a transaction



Prototype 1. Display form of self data to make transactions

2. The buyer gets an SMS from Rekber to transfer to the account agent in accordance with the nominal plus the fee and the Buyer then informs the Rekber Agent that the transfer has been made, and the Rekber Agent has confirmed it



Prototype 2. Display the buyer sms menu after filling out the transaction form

3. The seller gets an SMS from the Rekber Agent that the balance has entered and instructed to immediately send the item to the buyer then the Seller confirms that the item has been sent to the Rekber Agent

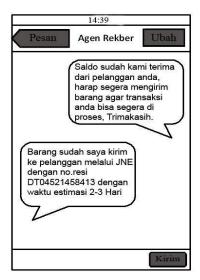


Figure 4. Display seller's sms menu that the balance has been received and delivery of goods to the buyer and Display the sms menu seller informing the item has been sent

5. The Rekber Agent informs the buyer that the item has been sent and the Buyer confirms to the Rekber Agent that the item has been received

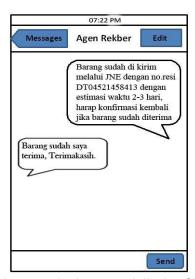


Figure 5. Display SMS Rekber Agent to the buyer and display SMS goods have been received by the buyer

6. The Rekber agent informs that the item has been received by the buyer and the seller sends the account number to be processed immediately



Figure 6. Display of SMS disbursement of funds

#### 7. Next view

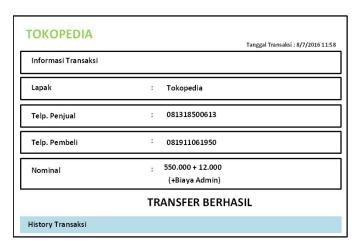
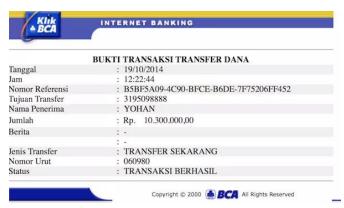


Figure 7. Data display on the web when finished using Piggybank Account

## 4. Implementation

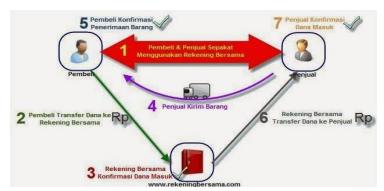
Procedures for conducting Piggybank Account Transactions:

A. Buyers and sellers agree to buy and sell activities, then to avoid unwanted events, the buyer or seller suggests using the rekber service so that the transaction is safe, after that the Rekber agent is chosen (eg Piggybank) The buyer contacts the rekber agent then tells the information needed , after that the buyer transfers to the PiggyBank Rekber agent account. then from the agent Piggybank told the seller the nominal that had been transferred by the buyer then posted and texted confirmation to (example) 021 9996 2829/0817 689 2829 for the money that had been transferred.



Source: Internet banking transfer (2014: www.kaskus.co.id)
Figure 6. Display of buyers transferring to Piggybank's agent account

B. After the funds have been received by Piggybank Account Agent, the Rekber Agent informs the seller that the goods are immediately sent to the buyer. After the item is received by the buyer, the buyer confirms to the rekber agent that the item has been received, and the disbursement of the funds is carried out (no later than 1 day or 1x24 hours after the buyer confirms the goods are received well). following the plot:



Source: How to transact through Rekber (2014 : azizazza.blogspot.com) Figure 7. Piggybank Account Payment Flow

C.Return and Refund Processes. If the item does not match or cancel, then the Piggybank Rekber will contact the sales for confirmation. If both parties have agreed, the buyer must return the item and after the seller has received the item back and is suitable, then Piggybank Account will refund the buyer's fund.



Source: The toKopedia return process (2016: blog.tokopedia.com) Figure 8. Return and refund process for Tokopedia

#### 5. Conclusion

This it can be concluded, this study uses the mind mapping method. Using an online payment system is more efficient, safe, convenient and fast compared to manual payments that were applied to PT. Tokopedia before. Development of payment systems using Piggybank Rekber makes it easy for students to make payments. Piggybank Rekber payment system is very efficient for buyers because of the Piggybank Rekber system at PT. Tokopedia. Of course it can provide comfort and trust to consumers and sellers and avoid online fraud cases. So that consumers are more interested in using Rekber services than not at all. With the Piggybank Account System, it certainly has an influence on sellers and buyers at PT. Tokopedia because Piggybank's account provides comfort and security during online transactions. For online buying and selling transactions it is better to use rekber services because the transaction is safe and controlled. for the issue of Rekber service fees, there is no need to question it, because Rekber service providers offer their services at a tariff affordable.

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