An Approach of Secured Ecommerce Transaction Model without Using Electronic Payment Credit or Debit Card System

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Abstract

Nowadays electronic commerce services have risen to become more and more popular on Internet and Web environment. Exchange security on network is very important for e-commerce service and it is always the key factor that affects the success of electronic commerce (e-commerce). E-Commerce or e-business consists of the buying and selling of products or services over computer networks including Internet. The amount of trade conducted electronically has grown with widespread Internet usage. Security of transaction process in E-Commerce is more difficult to implement and there is no privacy of information as the information passes through the internet may be accessed by strangers.

In this paper we proposed an idea for secure e-commerce transaction. In this mechanism buyer buy products from seller website through online without using their electronic Payment credit or debit card details. The payment is done between seller and buyer bank account. The purchased amount is being verified by buyer bank from the buyer and also by the seller bank from the seller. The purchased amount is being transferred from buyer account to seller account after the proper through Email verification of the amount from both the seller and the buyer end. This new idea is more secured compared to existing online payment system as we are making transaction between the seller and buyer bank account without using electronic Payment credit or debit card.

Keywords: E-Commerce Security, Online Fund Transfer, Verification of Amount from seller and buyer through Email.

I. INTRODUCTION

E-commerce is a term for any type of business, or commercial transaction that provides services for buying and selling products or exchange information across the internet. The various applications of E-commerce are online shopping, online banking, group buying, e-tickets etc. An online transaction system is a payment method that authorizes transfer of funds over an electronic fund transfer (EFT).In online transaction consumers buy products from seller with credit or debit cards.[1][2][3] Online transaction in E-commerce is not secure. Credit card details or personal Information passes through the internet may be misused by other.[2][3][5] Fig-1 represents the process of an E-Commerce transaction.
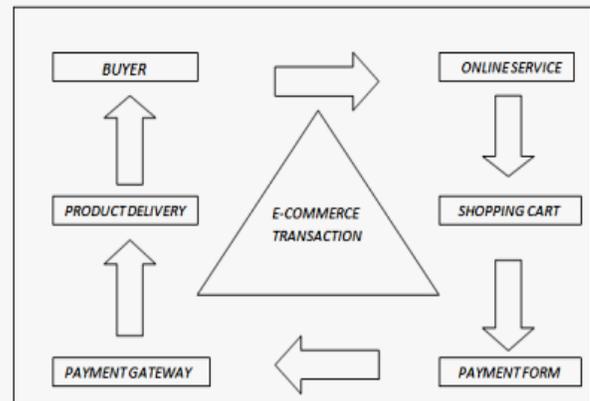

Fig 1: Transaction of E-Commerce

Here, we have proposed idea for purchase product through online. We have developed new transaction process where Buyer buy product through online without using electronic payment credit or debit cards. Buyer and seller directly communicate with their bank for transaction .Here, Buyer send message to their bank for purchasing product from seller and send their bank name, branch name without Account number to seller. Seller forwards all details of buyer to their bank .So Seller bank send request message to buyer bank for transaction. Then buyer bank send SMS and Link mail to buyer mobile and Email-ID for confirmation .If buyer agree for transaction then buyer send confirm message through Email-ID to their bank. After that Buyer bank make payment to seller bank by send SMS and Mail to buyer mobile and Email-id that transaction successful. At last seller bank send confirmation to seller that transaction complete. [4][5] Uses credit or debit card details for transaction are not secured because credit card or debit card details directly connected to bank account. So this proposed idea is more secure process. Here, credit card or debit card no, personnel identification no are not used for transaction and transaction commit after the confirmation of buyer. [5][6] In this paper section II describes entire procedure about transaction, section III describes Result and discussion, section IV draws conclusion.

II. ENTIRE PROCEDURE

We proposed a new idea for secure transaction without using electronic payment credit or debit card. This transaction process is based on online where sellers and buyers bank are communicate with each other for transaction. Buyer and Seller both should have valid email-id and bank Account. It is little more slow process comparing with other transaction, but it will be the best solution for secure transaction across the Internet. The whole process is describing in Fig-2.

Fig 2: Proposed Model of Transaction
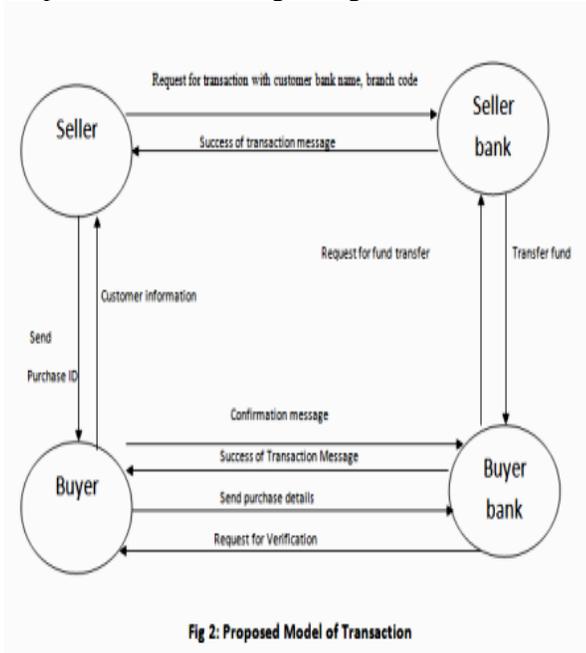
Step-1: Buyer place order for purchase product. Buyer find their products from seller website and select products for purchase .After selecting the product ,Buyer submit all the related information like name ,address, e - mail id ,contact number and selected products to the seller site.

Step-2: ***Submission Buyer bank details to seller***. Seller creates a Unique PURCHASE ID and sends it to the Buyer Mobile number by SMS or in e-mail id. Buyer send details about his/her name of transaction bank, branch code to the seller. Then seller forwards those buyer details to their own bank .Also seller send request to their bank for conduct the transaction between buyer and seller. PURCHASE ID: This is a unique ID for each transaction. PURCHASE ID is created when buyer buy product from seller. PURCHASE ID contains five parts. PURCHASE ID format is given below.

Date. dd/mm/yy	Time. hh:mm:ss	Item id.	Model no.	Serial no.

Example: 20/12/14.07:30:05.mob.N6363.1110231

Step3: Submission of information to buyer bank and searching for buyer account no. Buyer sends information to their own bank with purchase details of products with PURCHASE ID from his/her mobile number by SMS or from e-mail id. Buyer bank find out the buyer Account number by matching mobile number or mail id as e-mail id and mobile number are unique for each customer. In this stage buyer inform their own bank that they want to buy product before the transaction process start

Step4: **Submission of information to buyer bank by seller bank and request for fund transfer.** Seller bank send purchase details such as unique PURCHASE ID, seller account number, bank name, branch code, product details, and buyer details to buyer bank and send request to make payment for products.

Step5: ***Verification*** **purchase details by buyer bank.** Buyer bank verifies purchase details with the PURCHASE ID supplied by both buyer and seller. Then buyer bank send SMS with PURCHASE ID and unique 6 digit code to buyer mobile and also in email id of buyer for confirmation. Unique 6 digit code is the unique security code which created by buyer bank against PURCHASE ID. Example: Unique code: 176913

Step6: **Buyer confirmation to their own bank.** Buyer send confirm message to buyer bank from his/her mobile number or e-mail id by verifying PURCHASE ID and unique 6 digit code to make payment to seller.

Step7: **Fund transfer between seller bank and buyer bank** If buyer bank confirmed by buyer for transaction. Then Buyer bank transfer total amount from buyer account to seller account.

Step 8: **Confirmation for completion of transaction to buyer.** Buyer bank sends messages to buyer mobile and to e-mail id that transaction successful.

Step9: **Confirmation for completion of transaction to seller .**Seller bank send message to seller mobile and e-mail id that transaction successful. Fig-3 represents the entire transaction process.
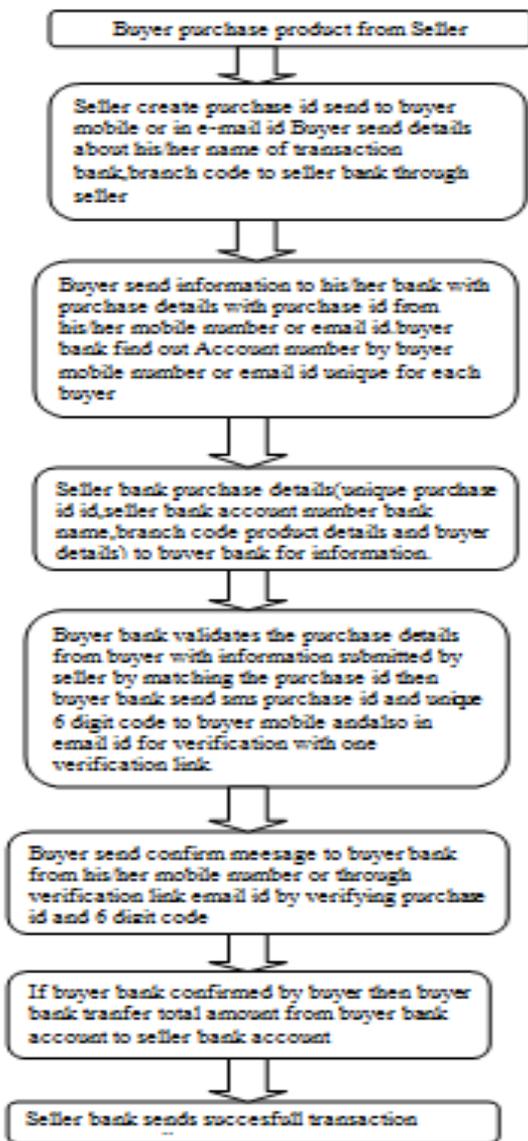
Fig 3: Entire Transaction Process between   Buyer and Seller We have also expressed entire transaction's activity by using a Sequence Diagram. Sequence Diagram is the diagram which represents the sequence or order of activities to complete the entire transaction.

Fig 4 represents the communication between different objects for transaction and the sequence of activities.
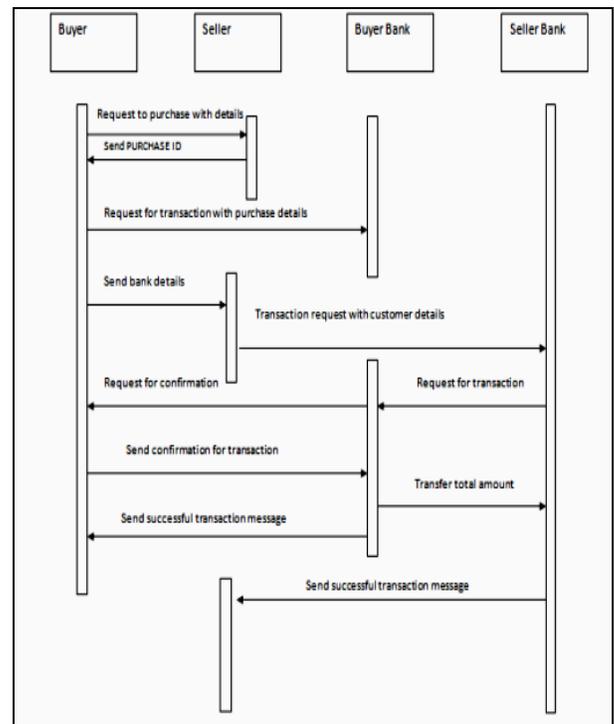

Fig 4: Sequence Diagram for the Transaction Process

III.   RESULT & DISCUSSION

1. Mr.Himanshu makes order for purchase Tablet phone from Samsung company website.Mr.Himanshu select Samsung Tab3 and submit this information to SAMSUNG Company Name: Mr.Himanshu Address: Meerut, UP, India Mobile number: xxxxxxxx15 E-mail id:himanshugl6@gmai.com

2. Purchase ID created by SAMSUNG send it to his mobile no. Himanshu submits order to SAMSUNG Company with following details Name: Mr.Himanshu Bank name: HDFC Branch code: HDFC107 SAMSUNG Company forwards this information to his bank AXIS.

3. Mr.Himanshu sends following information to his bank HDFC from his mobile (Mobile No: 9956784390) or from his email id (E-mail Id:himanshugl6@gmail.com). Product Name: SAMSUNG Tab3 Product Serial No: 1110251 Product Cost: 13000 PURCHASE ID: 20/12/14.07:30:05.mob.NC2.1110251 Then HDFC bank finds out account number (xxxx234) of Himanshu by matching his mobile no: 9956784390 of by matching his email id (himanshugl6@gmail.com) from bank's database.

4. SAMSUNG Company's bank AXIS sends request to Himanshu bank HDFC for transaction with following details SAMSUNG Account number: xxxx579 Product Name: SAMSUNG Tab3 Product Serial No: 1110251 Product Cost: 13000 PURCHASE ID: 20/12/14.07:30:05.mob.NC2.1110251

5. After verification of information by matching the purchase id submitted by Himanshu and SAMSUNG'S bank AXIS, HDFC bank send SMS and Mail to Himanshu mobile no: 9956784390 and email-id with Purchase ID and 6 digit secure codes for confirmation. Example: Message from HDFC Secure code: 235179 PURCHASE ID: x.x.x.x.1110251

6. Himanshu confirms to his bank HDFC by sending message with 6 digit code: 235179 SMS from his mobile no: 9956784390 and Link mail.Message from Himanshu. Secure code: 235179 PURCHASE ID: x.x.x.x.1110251

7. After receiving the confirmation message from Himanshu HDFC bank transfer Rs.13000 from Himanshu account no: xxxx234 to SAMSUNG bank's account no: xxxx579.

8. Then HDFC bank send successful completion message to the mobile of Mr. Himanshu.

9. Then AXIS send message to SAMSUNG with successful completion of transaction message.

In this way the entire E-commerce transaction process is done in between the seller and buyer bank account without the use of electronic payment credit or debit cards.

IV.   CONCLUSION

In this paper we implement new idea of E-commerce transaction between buyer and seller without using electronic payment credit or debit cards. Buyer purchase product from seller website through online. Whole transaction between buyer and seller is done through their bank with their valid account no without using credit card or debit card details. The benefit of this proposed idea is to make secure E-commerce transaction between buyer and seller as any credit or debit card details are not being used in this transaction process. credit or debit card details are not secure for transaction because bank account details are associated with credit or debit card transaction. Thus enhance the security. Buyer account number is not been disclosed to others and the verification of fund transfer is done by buyer bank by sending the secured code to the buyer mobile and link mail. Thus the security is increased as the buyer doesn't have to share any information regarding his account and the secure code is only being known to customer. As we have only focused into security concern so we have used several numbers of verifications thus the process take more time rather than existing E-commerce transactions. In future we want to implement a faster one.

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