E-Cash: Need of the Hour

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Abstract: In E-commerce, Electronic payment is one of the most important activity which occurs in the global scenario. E-cash system plays a vital role which provides the convenient way of making the payments electronically via network devices by using the various modes of electronic payment system. The main objective of this paper is to elaborate the concept of an electronic payment system with its salient features. This paper is based on conceptual study. It stress upon the more reliability, fairness, authenticity. E-cash system provides the reasonable level of security. This method is more advantageous as compared to the traditional paper currency.

Keywords- Features, E-cash concept, Encrypted Signature, Modes, Internet banking

INTRODUCTION

Internet plays a vital role in our day to day transactions, through which it enhance the demand of more applications and services which are helpful for utilizing the infrastructure. In case of online transactions, E-cash is one of the services that attract attention of people for ease of doing business worldwide. Through this, the paper currency which is previously used in traditional times has not become vitally important in the world of e-commerce.

Second alternative for online payment scheme is using of credit cards, with the help of this , all the transactions are recorded in the individual current accounts. On the other hand, schemes which are token-based i.e. E-cash do not involve recorded transactions because token system do all the straightforward verification by the merchant.

REVIEW OF LITERATURE

Schoenmakers B (2017) , the study stressed upon the cryptographic techniques of an electronic cash system. It focuses on the security aspects and the performance related issues. Token based system as much reliable than the online cash system .

Shukla A.et.al. (2016), the study conceptualized that E-cash system is higher form of electronic payment system. It provides the various modes of online payments such as smart card, credit cards, e-wallet system etc. It helps to avoid the fraudulent transactions. With the help of technology system, It provides the reasonable level of security.

Chang C.C.et.al. (2016), the study recommended that E- cash system must adopt the elliptic curve cryptosystem (ECC) in India so that it prevents from the limitation of double spending and provides the benefit of anonymity.

Jahan I.et.al.(2015), the study conceptualized that E-cash system works parallel with the progress of Internet system. E- cash has the limitation of the double spending system , in order to avoid this, bank must use the tamper- resistant device so that anonymous electronic payment system has been improved .

Anand S.R.et.al. (2015), the study stressed about the concept of transferability in E-cash system. In the Traditional system, the money passes in the multiple hands which caused deterioration of the money. Due to this new emerging concept, E-cash system brings anonymity, fairness and transferability concept.

Srivastava L.et.al. (2014), the study traced that banks can be considered as the lead user of electronic cash system based technology. In the present scenario, bank was the first one to adopt the concept of innovation by accepting the fifth generation of the computer. E- cash will automatically become the successor of the traditional cash system.

Nge T.N.(2013), the study traced that E-cash system addresses the security flaws in the fair electronic payment system based on Encryption data which provides the security and allows message recovery. In order to provide the authenticity, it acts as an effective protocol.

Dias J. (2000), the study conceptualized the role of E-cash in the present scenario and its impact on the welfare and the monetary policy. It lays down the two model in respect of the customer i.e. consumption and leisure where leisure approaches the transaction cost.

METHODOLOGY

This is a conceptual study about *"E-Cash: Need of the Hour''*.

OBJECTIVES OF STUDY

- To elaborate the concept of E-cash system with its salient features.
- To evaluate the pros and cons of E-cash system.
- To describe the various modes of online payment system.
- To aware about the security flaws system.

CONCEPT OF E-CASH

Digital cash is a system of purchasing cash credits in relatively small amounts, storing the credits in your computer, and then spending them when making electronic purchases over the Internet. Most merchants accepting digital cash so far, however, use it as an alternative to other forms of payment for somewhat higher price purchases. There are several commercial approaches to digital cash on the Web.

IMPLEMENTATION OF E-CASH

E-cash can be implemented in **two** ways i.e.

- **Through World Wide Web-** In this, bank plays as a party where the cash is stored. The bank provides the issuance facility to the customer. Whenever customer requires money to make payment, he can directly deal with bank and online transactions take place.
- **Through Offline system -** In this, customer prefers token based system or using of smart cards also for making payment.

CLASSIFICATION OF E-CASH

E-cash can be classified in **two** ways i.e.

- **Traceable E- cash** - Such type of cash is easily identifiable in nature.
- **Untraceable E-cash-** Such type of E-cash is of anonymous in nature and not easily identifiable by anyone.

PARTIES INVOLVED IN E-CASH

In **E-cash system,** It involves at least **three** parties:-

1. **Consumer** – The person who wants to buy something or wants to engage in the online buying transactions, he need to open an account with bank where the money is kept for online payment. Seller who deals with the customer, he has also opened an account with the various banks so that the transactions take place efficiently and effectively. The bank who handles both the accounts. Issue of currency is held with the bank.

2. **Issuer** - When consumer decides to buy then, the money flow from customer's account to merchant's account through the online banking system or token based system. All the transactions kept secretly with the parties by using encryption key.

3. **Merchant-** When money transfers to the merchant account, the merchant send the confirmation mail to the bank and he issuer verifies all the transactions according to the information kept in the customer's account and then, send the verification mail to both the parties and confirmed it . Bank debit the allow money from the customer's account and when the verification mail is received by the merchant then the merchant sends goods or provides the services to the customer.

WHY E-CASH IS MORE RELIABLE THAN TRADITIONAL SYSTEM?

It is easier than the traditional system because in previously one, there are chances of loss of cash and in case of large payment, this method is not reliable. It reduces the double spending transactions also.

So, the E-cash system provides so many benefits as these are given below –

1. **Security**: This plays an important role in the online cash system. The bank or issuer provides the security to both the parties and all the information related with both the parties are stored in the form of encrypted data. Such type of data is in coded form so that unauthorized person do not get the information. This E-cash system provides the security.

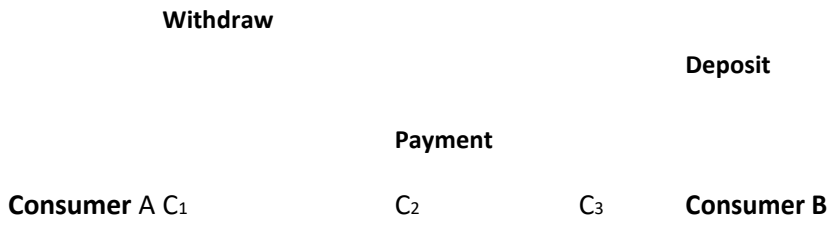
2. **Integrity**: All the parties are connected to each other, the Bank act as a mediator between the customer and merchant, every information flows from customer to merchant.

3. **Privacy:** According to anonymous E-cash system , this provides the protection to the customers from being monitored for the purpose of financial surveillance. Consumers should be aware that the more anonymity offered the less security achieved by the E-cash.

4. **Portability:** E- cash is in portable in nature that means it easily transferrable via the World Wide Web or portable devices. The network connection must be strong.

5. **Transferability :** Like in the paper currency or coins , the cash is easily transferrable similarly in case of E-cash , the money is easily transfer from one party to another party with reference to the bank . But

, the most advantageous feature of this system , if there is any double spending then , it can be easily traced which is not identifiable in the traditional system.



6. Divisibility: Through E-cash , It has the ability to divide large values into small value denomination rupees. This is a reliable feature of E-cash.

ADVANTAGES OF E-CASH

- **Convenient way** – E-cash is more convenience as compare to the traditional cash system in carrying a huge amount of money. It provides the opportunity to involve in the e-commerce business transactions either on-line or off-line.
- **Storing Capacity-** E-cash can be stored in a computer easily via Internet networks for the online payments. They do not need any third party verification.
- **Ability to buy**- E-cash provides the environment to the consumers to buy small item over the Internet, which is cumbersome while using credit cards.
- **Expansion of Business-** With the help of E-cash, It provides an opportunity to the merchant to sell their goods or provides the services at various websites across the world wide without the barrier of different currencies.
- **Reduction in Cost-** It is cheaper than the traditional system. It reduces the transaction costs in online buying and selling of the activities and increases the managerial efficiency level of banks.

DISADVANTAGES OF E-CASH

- **Counterfeit Activity**- All parties which are involved in the E-cash transactions are duly affected by counterfeit activity. There is a loss of liability in E-cash on damage smart card or crashed computer.
- **Processing charges** – While doing transactions via network devices, it enhances the additional fees such as processing charges. It may take a several time to complete the online transactions. Bank imposed such kind of charges on both the parties i.e. merchant and as well as customer.
- **Lack of Knowledge -** With the innovation technologies, those people who does not have any knowledge how to operate the computer, they are not able to serve online transactions.
- **Money- monitoring**
- **Hacking problems**

MODES OF E-CASH SYSTEM

1. Credit Card: This form is reliable as much in case of e-commerce transactions. It is simple to use in making online payment. It has CVN (Card Verification Number) at the back of the credit card; it acts as a security measure. When the customer has to make payment to the seller, he must go to online webpage of the seller and make payment easily by entering the credit card details i.e. Name of the holder, Expiry date, CVN and Amount which is to be transferred.

2. Debit Card: This is the second method of Electronic payment system. Whenever customer has to make payment within the specified limit of money which is kept in the Bank account, then, he use the debit card instead of credit card. This lays down the financial limits of payment and all the billing details passes from bank to the customer.

3. Smart Card: It is a plastic card embedded with a microprocessor which possesses customer's personal information. The money which is stored in the smart card, it reduces the usage cost by customer. The money reloaded firstly from smart card account to bank account.

4. E-Wallet: It allows the customer to store multiple credit cards, debit card and bank account numbers in a secure environment. This allows the payments faster easily, only customer registers all the details in the E-wallet profile.

5. Net banking: It is also a popular method of making e-commerce payments. This method is similar to the debit card system but this is more useful because user does not need to possess any card for online buying. He just goes to the bank and applies for the net banking facility. Through this, user at home done all the transactions via online networking system without entering any card details.

6. Mobile Payment: To make payment, customer just download the software or installed the applications and create a profile by providing all the relevant information's related with the bank account and customer personal details. He can easily make payment through mobile payment system and customer saves the screenshots regarding the billing system.

7. Amazon Pay: This is also an application where quick buying of goods and services takes place. Customers have to open an Amazon account credentials to log in and pay to the merchants by using their websites and apps.

8. Bank transfers: Through E-Commerce, at the request of the customer Banks transfer the money to the customer account by using the IBAN number.

9. Crypto currencies: Crypto currencies are rapidly gaining interest as a payment method for online transactions, particularly among young, moneyed professionals with IT expertise.

CONCLUSION

In a nutshell, it can be concluded that Virtual Cash Payment system plays a vital role in all spheres of life. This paper is based on secured transaction for mobile payment system which comes under the domain of mobile commerce. The analysis results show the system is highly robust and secure ensuring anonymity, privacy and non-repudiation offline payment system over wireless adhoc network. The work highlighted the feasibility of E-Cash system.

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