

# Cashless Transaction: Methods, Applications and Challenges

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## ABSTRACT

As the demonetization applied by government of India on 8 November 2016 there is a sudden boom in cashless transaction. The People with limited money in their pocket, rushing towards cashless transaction. This paper will spray the light on the basic concept of cashless transaction its security issues. The different method of cashless transaction is also discussed. Its associated advantages and limitations are discussed. Authentication of a user is also a big challenge for cashless transaction. Some of the main methods are given which are being used now a day. Different user authentications method and some future method are also discussed with their pros and cons. At the end conclusion and future scope of the cashless transaction is given. Also the challenges related to the cashless transaction are discussed.

**Keywords:** Cashless, Security, Authentication, Cashless Transaction Methods.

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## INTRODUCTION

By the cashless transaction [1] more transparency, more scalability and accountability will be obtained. As per the Abhay Doshi, Senior V-P and Head Digital Services Platform Business, Flytext "The new move of Demonetization will force the merchant to accept the cashless transaction". As per government of India, every method of fund transfer by means of digital money is termed as 'Prepaid Payment Instruments' for example Credit cards, Debit cards, online banking, E-Wallet etc.

Generally these methods of digital transaction are classified into three types [2].

- Closed
- Semi Closed
- Open

In case of closed types, money cannot be withdrawn. The service provider provides the points in a user account. User can directly use these points to purchase the goods and services. Ola Money is the example of the closed type.

In case of Semi-Closed, also the money cannot be withdrawn. These are also can be used to purchase the goods and services. Issuer and the merchant have a specific contract between them. It includes the E- Wallet issued by different service provider like Paytm and State Bank Buddy.

In case of Open type, money can be withdraw at ATM with the help of cards provide by the service provider. This types are also can be used to purchase the goods and services. It also includes the service of fund transfer at merchant location. For example Visa and Master cards.

## Different modes of cashless transaction in India

### 1. POS(Point of Sale)

Point of sale generally means any location where a sale or transaction may take place such as shopping malls, a market or a city where something likely is going to be brought or sold. POS transaction is one of the easiest methods of cashless transaction [3] through which you can control corruption. In this mechanism three simple steps have to be performed. First swipes, second, password entry, and finally get transaction detail.

## **2. UPI(Unified Payment Interface)**

UPI is a kind of payment system through which we can transfer the money between two different parties. By using UPI a bank account can be initiated to transfer money from any time anywhere with the help of few clicks. The best things of such types of transaction are that you do not need to share your credit details or wallet password.

Every bank has a personal Mobile App through it has become easier to transact. For this some steps need to be taken that are

1. Register mobile number into bank.
2. Download UPI app into smart phone.
3. Generate a unique ID into it.
4. Set UPI pin.

You can transact after following these steps

## **3. E-Wallet**

This term is used for a kind in of electronic device that allows anyone to make electronic transaction. To use this service you just need a computer or a smart phone only. Anyone can also link his bank account with it, with the help of driving license, health cards, and other ID proof. To perform online transaction through E-Wallet anybody has to follow the following steps

1. Download any E-Wallet like SBI Buddy.
2. Use your Mobile number for registration.
3. Connect your Debit/ Credit card or Net banking with it.

By following these steps you can make your wallet in your phone.

## **4. USSD( Unrestricted supplementary Service Data)**

To get benefit from this transaction you do not need any computer or smart phone. A simple featured phone is enough. Hence it is also known as “Quick codes”

### **Let’s talk about how it works?**

When someone sends message to the phone company, the company reverts back with a call or message to give details of what the customer has asked. USSD also be used to refill the balance on user’s SIM card to deliver OTP.

To perform the USSD transaction the following steps should be followed

1. Connect your mobile number with your bank account.
2. Dial \*99# into your phone
3. Dial four numbers before the short name of your bank
4. Select the option of your “Fund Transfer”.
5. Dial MMID of the person to whom the transaction money is transferred (Beneficiary).
6. Dial your amount and MPIN; dial four digit of your account number after a space.
5. UIDAI(Aadhar Enabled Payment System)

Link your Aadhar card with your bank and get benefited for the following safe and secure transaction.

1. Fund transfer.
2. Balance enquiry.
3. Withdraw/ Deposit cash.
4. Interbank transaction.

### **Benefits of cashless transaction**

It is very obvious that everything has its pros and cons. Cashless transaction do has some. Some of them are.

### 1. Control over black money

Black money has become a hazard now a day's cashless transaction become very important to control the black money. Whenever we buy any product, the distributor do not disclose their income to the government and hence escape from given the tax that money do not come under government surveillance hence consider black money. Any properties which are not under government surveillance and the tax have not been paid for that is the black money [4].

### 2. Control over fake note

It is impossible to make fake noted if the cashless transaction is used by every individual in the society because notes becomes useless. In this situation all the transaction will be done online [5].

### 3. No funding to terrorism

Funding to the terrorism is done by the unaccounted money by the black money holders. But cashless transaction will eradicate black money as well as fake currency hence no support to terrorism [6].

### 4. Tax payment

No one can store money with themselves as all the transaction will be done online. So, everybody has to pay tax for what they have [7].

### 5. Illegal political funding

Political donation is the major concern in the country. Majority of the funding in the political party is unaccountable which is not revealed by the party as well as the donor. All that kind of illegal transaction would be stopped if a government follows cashless transaction [8].

### 6. Cost of printing and distribution of currency

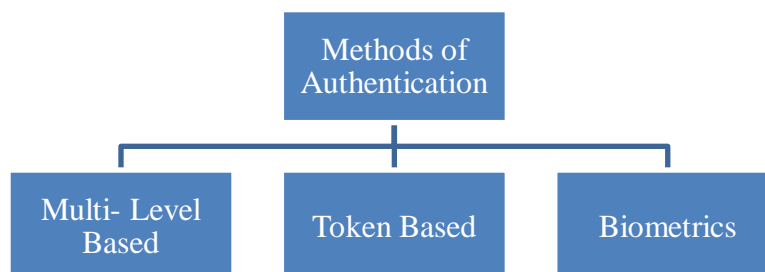
The cost of printing and distribution of currency would be zero for the cashless transaction as no paper notes to print and distribute [9].

## Security

Any financial transaction requires security for its proper functioning. In current financial transactions scenario password is a major component which deals with the issue if security [10].

Generally the authentication in the financial transaction may have three types

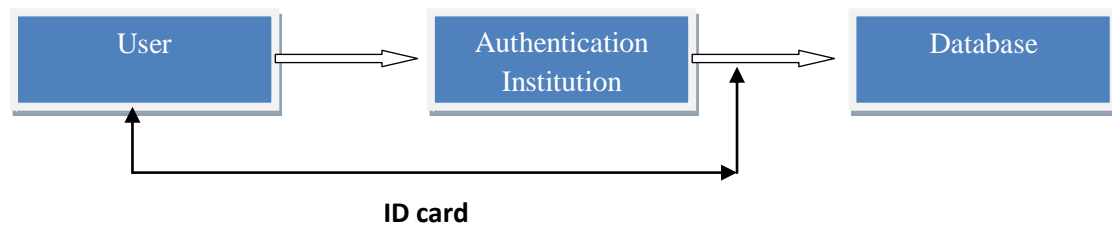
- Multi-Level based Authentication method.
- Token based Authentication method.
- Biometrics Authentication method



**Fig.1 Classification of Authentication Methods**

Multilevel authentication is also used by many agencies. For example in online transaction the user uses its password to login and for fund transfer he has to have another password and an OTP (One Time Password) /SMS on his mobile [11].

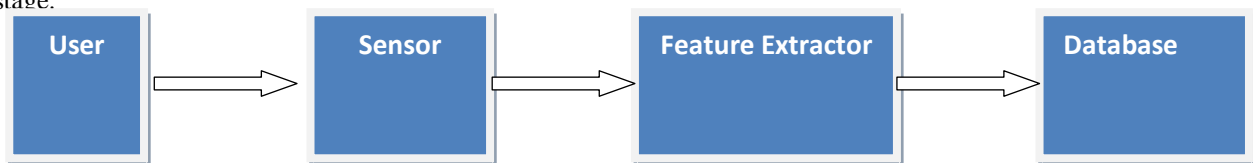
Tokenization authentication is also a very important method which can be applied for the Cashless transaction. It depends upon the knowledge of the person. The person memorise the password and other tokens [12].



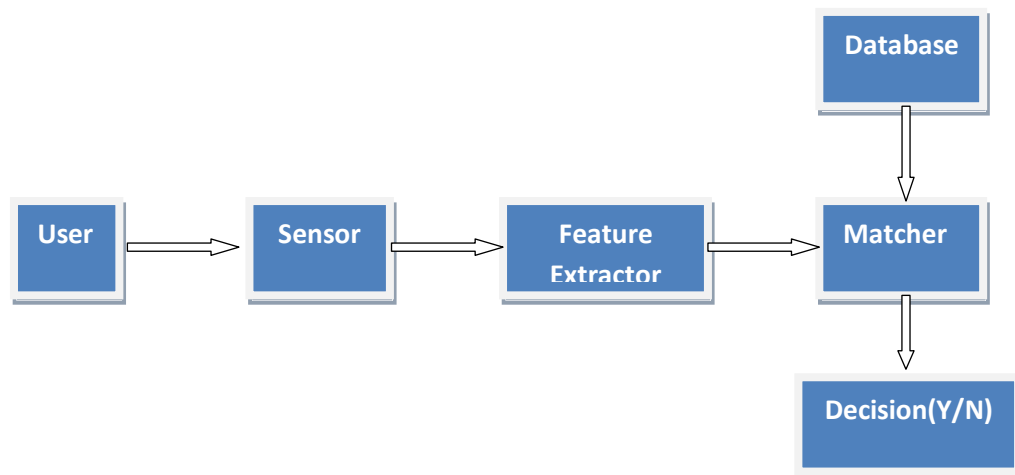
**Fig. 2 Enrolment Process of Token Based Authentication Method**

Biometrics authentication System is not so popular in India for cashless transaction. It requires human features for example Retina, Vein, Finger print, Voice scan, etc but this method are more secure than multilevel and tokenization method as it is very hard to steal the biological features of a person [13].

In the enrolment process for an individual, using a biometric to be identified or verified, a copy of the individual's signature has to be stored in a database at the enrolment stage. Figure presents the block-diagram of the enrolment stage.



**Fig. 3 Enrolment Process of Biometrics Authentication Method**



**Fig.4 Identification Process of Biometrics Authentication Method**

### CHALLENGES OF CASHLESS TRANSACTION

As per TRAI the total telephone subscriber (in million) are 1058.85 still it is not in the range of all the people. The existing telephone infrastructure is not covering all the area [14].

Insufficient infrastructure is also a major barricade for cashless transaction. For a Large country like India, there are only 2.3 lakh ATMs and 14 lakh POS terminals are very low. Countries such as Brazil, Australia, France and the UK have POS terminals three or four times that of India. Also the customer awareness drive is virtually missing. The regulatory framework for card payment is sound. [15]. The current business model of card payment is also under pressure

Illiteracy is one of the major issue in the path of cashless transaction, as per UNESCO report India currently has the largest population of illiterate adults in the world with 287 million [16]. India's illiterate population largest in the world says UNESCO report.

Hacking is one of the issues for cashless transaction as per the Economic time 3.2 million debit cards information were compromised of the major banks such as SBI, HDFC, YES and AXIS [17].

## **CONCLUSION**

As the demonetization applied by government of India, Government trying to aware its people for cashless transaction by various kinds of advertisement method but still a large number of people are awaiting for the introduction of cashless transaction. This paper is a study of cashless transaction its different methods, advantages and challenges. This paper will help to understand the basic of the cashless transaction.

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