Reviews on Digital Payment System

S. Ramani

Department of Computer Science, National College, Trichy, India

Corresponding Author: velnet2018@gmail.com

Abstract—this paper digital payments are using in developing countries. As the world has become globalized, it is tough to give the whole perspective of digital payments & how this is really helpful in our day-to-day life. This work will give maximum contribution to the knowledge and understanding the digital payment. It reveals that covered some basic points of digital payments & customer relationship management that goes to little higher level. So that it can give the overview on its structure & how it works. The customer can place orders at home to save their time.   Digital payment systems have a very important role in E-commerce and they are used to complete E-commerce transactions. The purpose of this paper is to introduce current state, the challenges and future expectations of Digital Payment Systems. It depicts that the details of history of the e-commerce, the current situation of e-commerce and the methods of digital payment systems used in e-commerce. The results of the research show that now-a-days online payment systems are popular. All the respondents have experience on digital payments. Debit card (Visa or MasterCard) and Net Bank, PayPal, Payment wall ,Google Wallet, Mobile Money Wallets, Braintree, Stripe are the most popular digital payment systems, not only in countries. The second one is third-party digital payment systems. PayPal is more popular in the country. The two main factors contributing to choosing digital payment system are convenience and the quickness of transaction. Technical problems and vulnerability to cyber-crime are the main pros of digital payment system. Malware attack and financial issue are the main challenges of digital payment. Having a secure, reliable and trustworthy digital payment environment is important.

Keywords— Digital payment system, card types, payment

I. INTRODUCTION

Digital payment system is financial transactions made without the use of paper documents such as cheques. Digital payments include debit card, credit card, smart card, e-wallet, e-cash, electronic cheques etc. digital payment systems have received different acceptance level throughout the world; some methods of electronic payments are highly adopted while others are relatively low.

Digital payment system is a mode of payments over an electronic network such as the internet.   In other words we can say that digital payment is a method in which a person can make Online Payments for his purchase of goods and services without physical transfer of cash and cheques, irrespective of time and location. Digital payment system is the basis of online payments and online payment system development is a higher form of digital payments. It makes electronic payments at any time through the internet directly to manage the e-business environment. In real world we have two distinct types of payment systems: Internet–Based payment system there is four models of Internet-Based payment system, e-cash, Credit Card, Debit Card, Smart Card.   Electronic Transaction-Based payment system there are four models of Internet-Based payment system, Secure

Electronic Transaction, Cyber Cash, Net Bill, First Virtual Holdings.

Cyber security is important because government, military, corporate, financial, and medical organizations collect, process, and store unprecedented amounts of data on computers and other devices. As the volume and sophistication of cyber attacks grow, companies and organizations, especially those that are tasked with safeguarding information relating to national security, health need to take steps to protect their sensitive business and personnel information.

Cyber Security:
Present era is too fast to utilize the time factor to improve the performance factor. It is only potential due the use of Internet. The expression Internet can be definite as the collected works of millions of computer that provide a network of electronic connections between the computers. There are millions of computers connected to the internet. Everyone appreciates the use of Internet but there is another side of the coin that is cyber crime by the use of Internet. The term cyber crime can be defined as an act committed or omitted in violation of a law forbidding or commanding it and for which punishment is imposed upon conviction. Other

terms represent the cyber crime as ―Criminal activity in a straight line related to the use of computer, specially illegal trespass into the computer system or database of another, management or theft of stored or on-line data, or sabotage of equipment and data. The Internet space or cyber space is growing very fast and as the cyber crimes. Some of the kinds of Cyber-criminals are mentioned as below.

Crackers: The individuals are intent on causing loss to assure some antisocial motives or just for fun. Many computer virus creators and distributors fall into this category.

Hackers: an individual's explore others' computer systems for education, out of curiosity, or to compete with their peers. They may be attempting to gain the use of a more powerful computer, gain respect from fellow hackers, build a reputation, or gain acceptance as an expert without formal education.

Pranksters: These individuals perpetrate tricks on others. They generally do not intend any exacting or long-lasting harm.

Career criminals: Individuals earn part or all of their income from crime, although they Malcontents, addicts, and irrational and incompetent people: "These individuals extend from the mentally ill do not of necessity engage in crime as a full-time occupation.

Cyber terrorists: There are many forms of cyber terrorism. Sometimes it's a rather smart hacker breaking into a government website, other times it's just a group of like-minded Internet users who crash a website by flooding it with traffic.

II. RELATED WORK

In this paper [1] indian payments industry is undergoing an ecosystem expansion and transformation and at the same time entry of new banks, acquiring and processing company is likely to bring unique business model nuance to the fore. With a huge number of organization conducting business this way, it has become obvious that the field of e-commerce has a promising future ahead and businesses are going to obtain maximum benefit from it (Abrazhevich, 2003,). Electronic Payments provides greater freedom to individuals in paying their taxes, licenses, fees, fines and purchases at unusual location and at whichever time of the day, 365 days of the year .

In this paper [2] Kaur.k & Dr. Pathak. A, 2015 there are several barriers identified to the adoption of this payment method such as digital literacy, digital usage, fraud, consumers' privacy, application technology, and computer

security. Certain measure should be taken to grant this manufacturing a promise future ahead.

In this paper [3] bamasak approved out study in Saudi Arabia found that there is a bright potential for m-payment. Security of mobile payment transactions and the illegal use of mobile phones to make a payment were found to be of great concerns to the mobile phone users. Security and privacy were the major concerns for the consumers which affect the adoption of digital payment solutions illustrated the adoption of mobile wallet among consumers in Finland as only at the start stages of the Innovation-Decision Process.

In these paper [4] Doing payments via mobile phones has been in use for many years and is now set to explode. Furthermore mobiles are more and more being used by consumers for making payments. "Digital Wallet "has become a part of consumers which are nothing but smart phones which can function as leather wallets Digital wallet offered many benefits while transferring money such as convenience, security and affordability . Growth in technology has opened many modes of payments through which consumers can do transactions which are more convenient, accessible and acceptable, consumers have an inclination towards mobile payment apps usage Contribution various benefits such as flexi payment digital wallet brands are providing extra convenience to consumers. Main factor in adoption of digital wallet is convenience in buying product online without physically going from one location to another location. There has been many studies conducted in history on mobile payment application to find consumer interest and they found consumer has positive inclination for the same.

In this paper [5] factors such as perceived ease of use, clarity and trust affect adoption of digital wallet as payment method. These factors are termed as facilitator and play crucial role in approval of digital payment solution. Procedure of digital wallet among youth in the state of Punjab was found to be connected with societal influence and usefulness, controllability and protection, and need for performance enhancement. Best pricing, complexity, a lack of critical mass, and perceived risks are the barriers to adoption of digital payment systems.

In this paper [6] complete model 'Payment Mode Influencing Consumer Purchase Model' was proposed by Braga and Mazzon. This mold well thought-out factors such as temporal orientation and division, self-control and pain of payment constructs for digital wallet as a new payment mode. Customer perspective of mobile payments and mobile payment technologies are two most important factors of mobile payments research.

In this paper [7] Mallat studied consumer adoption of mobile payments in Finland. In this study found that mobile

payment is dynamic and its implementation depends on lack of other payments methods and certain situational factor.

In this paper [8] Digital wallet payments bring extra convenience to shoppers by offering flexible payment additions and accelerating exchanges. Experienced a complete model of consumer acceptance in the circumstance of mobile payment. It used the unified theory of acceptance and use of technology (UTAUT) model with constructs of safety, trust, social influence, and self-efficacy. The model established the classical role of technology acceptance factor (i.e., perceived to users' attitude), the result also showed that users' attitudes and intention are influenced by perceived security and trust. In the extended model, the moderating effects of demographic on the relations among the variables were found to be significant. Digital wallet offers the consumer the expediency of payment devoid of swiping their debit or credit card. Instant Cash availability and render faultless mobility is also a unique feature of these digital apps, for instance the balance in your Paytm wallet can be very easily transfer to your bank account as and when you want.

In this paper [9] as per Ministry of Finance Report (December 2016) on Digital payment, financial inclusion is one of the foremost challenge facing India. 53% of India population had access to formal financial service. In this circumstance digital payment can act as accelerator to financial inclusion. Rising availability of mobile phone, availability of data network infrastructure rollout of 4G network and large merchant eco system are the important enablers of digital payment in India. It is additional support by the coordinated efforts of manufacturing, regulator and government.

III. METHODOLOGY

3.1 Digital Payment System

It is a way of payment which is made through digital modes. In digital payment, payer and payee both use digital modes to throw and take delivery of money. It is also called electronic payment. No hard cash is involved in the digital payment. All the transaction in digital payments is complete online. It is an instant and suitable way to make payments. If we talk about cash payment, you have to first withdraw cash from your account. Then you use this cash to pay at shop. Retailer goes to the bank to deposit the cash which he got from you. This Method is time-consuming for you and also for the retailer. But in digital payments, the money transfers from your account to the retailer's account immediately. This procedure is automatic and neither you nor the shopkeeper is required to visit the bank. It's save you from long queues of ATMs and banks.

3.2 Different Types of Digital Payments:

Commonly used cards to recently launched UPI, digital payment system have many types of payment. Some modes

intended for tech-savvies and some for less-technical person. Below are the different modes of digital payments.

➢ UPI or unified payment interface
➢ AEPS is an Aadhaar based digital payment mode
➢ Rupay debit card
➢ Credit cards
➢ Debit cards
➢ Prepaid cards
➢ E-Wallets
➢ Smart Card

3.3 Digital Payment Requirement

For any digital payment system to succeed

Anonymity: Identify of the customer should be protected.
Acceptability: Payment infrastructure need to be widely accepted
Convertibility: Digital money should be convertibility it any type of fund
Efficiency: Cost per transaction should be near to zero.
Integration: should be crated support existing system.
Security Should flow financial transaction over open network.
Reliability: Should avoid single point of failure.
Usability: Payment should be simple as in the real word.
Scalability: Infrastructure should not sever down if new consumer and merchant join

3.4 Effective Digital Payment System

Customer and browser:
A customer interact with the online commerce system through a web browser typically a consumer first accessing a shopping mall and then uses the hyperlink from the mall to access the merchant home page.

Shopping mall:
It is where most customer first visit for shipping free there will be several shopping malls and it may pay to enlist with one or more well known mall.

Merchant systems:
It consists of the home page and interconnected software to manage the business.

Banking network:
It consist of more than a few component there is bank that process the online financial operation for the given merchant the bank maintain the account for the merchant approve and process the payment the merchant bank also preserve a link with the customer bank for verifying the trans actions.

3.5 Issues and challenges of digital payment system
Lack of Usability
Digital payment system requires large amount of information from end users or make transactions more difficult by using complex elaborated websites interfaces.

Lack of Security-
Digital payment systems for the internet are an easy target for stealing money and personal information. Consumers have to present credit card and payment account details and other personal information online.

Issues with e-Cash
The major problem of e-cash is that it is not universally accepted because it is necessary that the marketable establishment accept it as payment method.

Lack of Trust
Digital payment has a long history of fraud, misuse and low reliability as well as it is new system without recognized positive reputation. Potential consumers often mention this risk as the key reason why they do not trust a payment services and therefore do not make internet purchases.

Lack of Awareness
Making digital payment is not an easy task. Even educated people also face troubles in making digital payments. Sometimes there is a technical problem in server consumers tried to do online payments but they fails to do.

Highly Expensive and Time Consuming
Digital payment system are highly expensive because it includes set up cost, machine cost, management cost etc and this mode of payment will take more time than the physical mode of payment.

3.6 Solutions in electronic payment systems
 Encryption
Online shopping is very responsive to notion that e-commerce is unselfconfident, mainly when it comes to digital payments. Most digital payment systems use an encryption system to add security to the transmission of personal and payment details. There is a variety of encryption method in use to prevent from frauds of online payments.

 Digital Signatures
The party complex in digital payments, transactions should use digital signatures in order to ensure authentication of transactions.

Firewalls
An integrated collection of security method designed to prevent illegal electronic access to a networked computer system to protect private network and individuals machine from the danger of the greater internet, a firewall can be employ to filter incoming or outgoing traffic based on a predefined set of rules called firewalls policies. There are 3 policy actions of firewalls:-
Accepted: Permitted through the firewall.
Dropped: Not allowed through with no indication of failure.

Rejected: Not allowed through accompanied by an attempt to inform the sources that the packet was reject.

Request more identification in case of doubts
While customers value their privacy and require fast web site ordering facilities, it is main to gather sufficient customer identity details during the ordering process. The customer's name, all card number and expiry date is not enough. Merchant must call them for confirmation through phone or request a photo ID to be faxed if they have any doubts.

Call the all type card issuing bank to verify the validity of credit card-
If online merchants have any doubts about an order and need to verify the details of the order, they can call the issue bank and ask to confirm the general account details. The issue bank phone number is based on the first 4 or 6 digits of all type card number known as the Bank Identification Number (BIN).

Table1. Performance Analysis using card type

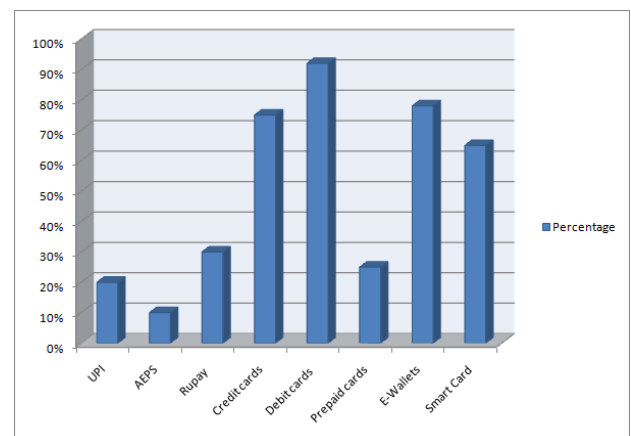| S.No	Card Type	Percentage
1	UPI	20%
2	AEPS	10%
3	Rupay	30%
4	Credit cards	90%
5	Debit cards	92%
6	Prepaid cards	25%
7	E-Wallets	78%
8	Smart Card	65%

Figure1. Performance Analysis using Card type

3.7 Advantages of Digital Payments
 ➢ Easy and convenient
 ➢ Pay or send money from anywhere
 ➢ Discounts from taxes

- ➤ Written record
- ➤ Less Risk

IV. CONCLUSION

Digital payment refers to the mode of payment which does not include physical cash or cheques. It includes UPI, AEPS, Rupay, Credit cards, Debit cards, prepaid cards, E-Wallets, Smart Card etc. E-commerce is the main link in the development of online use of payment methods that are analyzed in this work. The risk in the online payments is theft of payments data, personal data and fraudulent rejection for the customer side. Therefore, the use of electronic signatures is widely increased in the online payment for the security purpose. We must use that technology for a moment to guarantee a reasonable minimum level of security on the network. With respect to the payments methods it is analyzed that, it is impossible to say that any one of them are perfect, although each one of them has their own opinion either supporting or opposing. If the client wants to maintain privacy, then they have to choose those payment methods which guarantee higher levels of privacy such as debit, credit card. If the priority is security, then they should use E-Wallets. Both consumers and service providers can get benefit from e-payment systems which lead to increase national competitiveness in the long run.

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