

Cyber Crime and Cashless India Campaign



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Abstract

Information technology and growing addiction to internet among youngsters has given rise to new forms and modes of communication, transactions and online interaction around the world. Things have changed completely as everything starts with 'e' nowadays, such as e-communication, e-transactions, e-governance and e-commerce. Among all the advantages of cyberspace e-commerce is the most important one as it directly affect the economic growth of every nation. Being able to shop and purchase things and avail services while paying also online has come as a boon to our fast pacing society with less time to go outside and do everything manually. But at the same time paying with plastic currency too has its disadvantages that cannot and should not be ignored. Just like every other developed country, Indian government is too pushing our economy into adopting cashless mode of transactions instead of century's long paper currency custom existed in India. There are various prerequisites before any country can go for this plunge. Lack of proper measures will create a welcome space for cybercriminals to exploit the unaware citizens and unprepared government. Sudden shift to cashless economy will give rise to cyber crime incidents in India. In this paper there will be detailed analysis of Advantages and disadvantages of cashless economy and its implications especially on cyber crime in India

Keywords: Cybercrime, cashless economy, digitization, Information Technology, Online payment modes.

Introduction

Cashless Economy means where transactions are done with the help of plastic money such as credit cards and debit cards instead of cash money. This phenomenon is catching a lot of attention due to sudden rise and popularity of information technology worldwide. There are various apprehensions about the success or failure of this notion as it is fully dependent on the cyber security mechanism and advancement of information technology of the particular place adopting cashless economy. The concept of electronic money is no longer a hypothesis but a realisation. Advanced smart card technology and the ability to replace physical cash with an electronic alternative is a reality with mass market utilisation being a matter of time, rather than just supposition.¹ There are number of benefits, disadvantages and techno legal aspects of this phenomenon. Recently in 2016, Indian government after introducing demonetisation appealed to the masses to adopt online payment system instead of cash payment to avoid inconvenience and manage cash crunch. India is a place where almost 98% transactions are done by cash, and expecting such a huge market to shift towards cashless economy overnight is a farfetched dream. But India's not the only country in the world moving towards becoming cashless. This is a global trend; there are many countries which are making great strides in eliminating or minimising the use of paper money. These countries aren't cashless in the true sense of the word but some cash still does the rounds

Aim of the Study

Main objective of this research paper is to illustrate various benefits and drawbacks of adopting cashless economy especially in respect to conditions prevalent in India which is a developing country in terms of technological advancements and internet communication technology as compare to developed nation like U.S and United Kingdom. Another aspect that will be studied is the relation between rising cyber crime and adoption of cashless economy without proper technical and legal framework in place in India.

Review of Literature

There are various aspects of going cashless and David McRee² in his book titled as "The War on Cash: How Governments, Banks, Nonprofits and Academics are Abolishing Cash" has emphasised how governments and banking institutions are pushing for cashless economy for their own benefits rather than of their customers. This book provides simple and effective study of real face of cashless economy. Another important aspect is that developing country like India need to be extra cautious while adopting cashless system as explained by Jayant Parikshit³ in his book titled as "Journey towards Cashless India (Black Money, Demonetisation & Cashless Economy)". This book clarifies all the events and the consequences that have lead to cashless India campaign. Ajit Roy⁴ in his book titled as "India's Readiness for Digital Economy: Cashless Economy" throw light on digital economy and assess related infrastructure scenario of India in relation to cashless economy infrastructure to understand the readiness of Indian economy into going cashless. Kartikeya Tripathi⁵, in his article titled as "India's drive for a cashless economy puts millions at risk of cybercrime" has demonstrated how sudden move towards cashless economy is going to prove harmful as cyber crime will grow at a fast pace with growing use of plastic money. Another important research article by Yogesh K Dwivedi⁵ in his article titled as "India taking a step on the road to cashless economy" explains about all the hurdles that India is facing today in its drive towards cashless economy.

Evolution of Electronic Payment Method

Birth of online payment method dates back to the year 1870 When Western Union first introduced electronic fund transfer (ETF).⁶ Then, in 1918, the Federal Reserve of America⁷ began transferring money via telegraph and shortly within the next few years advent of charge cards and credit accounts started the journey of plastic money in America. In 1950 Diner's Club International became the first independent credit company, followed by American Express in 1958 and then a year later American Express introduced the first card made of plastic.⁸ With the advancement and popularity of Information technology, banks and consumers became more reliant on computers to conduct transactions which further impacted the growth of online payment system in developed countries. Popularity of electronic transfers grew at such huge rate that in 1972 the Automated Clearing House (ACH) was developed to process large volumes of transactions in batches for ACH payments.⁹

At present almost all the developed countries are fast converting into cashless economy considering all the benefits and economic impact it has on the financial wellbeing of a nation. Sweden is the first country to go cashless as only 11 percent transactions are done by cash in Sweden.¹⁰ Other countries that are moving towards cashless are Denmark, Belgium, Canada and UK. This research paper will discuss all important aspects of cashless economy from India's perspective and its impact on rising cyber crime which has become the fastest

growing security concern for every nation around the globe.

Rising Cyber Crime and Cashless Economy

Cyber crime is already on the rise in India. Communications and IT minister Ravi Shankar Prasad has furnished the detail of rising cyber crime data in India. As per his report there were more than 8000 Indian websites¹¹ hacked the first three months of 2016 which is very alarming. There was total 41,319 cyber crime incidents occurred in 2013 which rose up to 49,455 in 2015. In 2016 there were 14,343 incidents occurred till March which indicates the seriousness of this issue. These incidents include fishing malicious code, website intrusion, denial of service attacks, scanning, etc. These reports are just tip of an iceberg because majority of attacks go undetected due to lack of awareness among the masses. India is a heaven for cyber criminals because they have all the right environment and vulnerabilities to exploit. Major reasons for cyber attacks are insecure cyber network connections, too many internet connections without safety regulations, lack of legal and technical infrastructure and lack of awareness among people regarding handling online complications. India has abundance of these issues that make it very vulnerable and perfect place for cyber criminals to exploit the vulnerabilities. Now if government pushes the economy to go cashless overnight that is going to be golden opportunity for hackers because as already discussed India is facing many challenges as it is regarding cyber security issues. Without proper technical, legal and social preparations cashless India campaign might prove disastrous.

Advantages of Cashless Economy

Information technology has brought numerous benefits for the society. There are things that were practically unimaginable that we are able to do today with the help of technological advancements. Cashless transaction or online payment is one of the benefits reaped by the society with the help of IT and internet.

More tax for the Government

When transactions are done online, it reduces the instances of tax avoidance because it is financial institutions based economy where transaction trails are left. More tax means more finance for public services.

Curb Black Money

It will curb generation of black money as well as reduce real estate prices because of curbs on black money as most of black money is invested in Real estate prices which inflates the prices of Real estate markets and making it easier for poor people to afford their dream home.

Less Burdens on RBI

In Financial year 2015, RBI¹² spent Rs 27 billion on just the activity of currency issuance and management. This could be avoided if we become cashless society and that money can be invested in more productive areas.

Encourage Advancement of Digital Infrastructure

It will pave way for universal availability of banking services to all as no physical infrastructure is

needed other than digital.¹³ It will call for competition as private banks and financial institutions need to update their infrastructure to provide latest services to their customers at fast speed and secure network to be accessed by everyone.

More Transparency

There will be greater efficiency in welfare programmes as money is wired directly into the accounts of recipients thus making the entire process transparent which will bring more benefits to the poor and underdeveloped areas of our society. When payments are easily traced and collected, corruption will automatically drop, so people will no longer have to pay to collect what is rightfully theirs which will in turn bring prosperity and growth.

Time Saving

There will be efficiency gains as transaction costs across the economy should also come down. Countries where cashless economy is on the forefront, their citizen don't have to carry large currency notes with them. One card simply pays for every transaction such as travelling by public transport, shopping, outing or payment of home utility bills. It also cut down the risks associated with carrying cash around such as robbing or losing cash etc.

Discourage Fake Currency

Fake currency has a huge negative impact on economy, by going cashless, that can be avoided. Other problem that could be solved through going cashless would be getting rid of Soiled, tobacco stained notes full of germs are a norm in India. There are many such incidents in our life where we knowingly or unknowingly give and take germs in the form of rupee notes which exchange thousands of germ laden hands daily. This could be avoided if we move towards Cashless economy.

User Friendly and Convenience

Using plastic currency will reduce costs of operating ATMs, speed up the work load and satisfaction of customers, with no delays and queues, no interactions with bank staff required.

Increase in GDP

A Moody's report highlighted the impact of electronic transactions to 0.8% increase in GDP for emerging markets like India. A research study¹⁴ has examined the fundamental relationship between the adoption of electronic retail payment and overall economic growth across 27 European countries from the period 1995–2009. They discovered that migration to an effective electronic retail payment would stimulate the overall economic growth, consumption, and trade.

Disadvantages of Digital Economy

There is no doubt about the convenience and benefits of cashless economy but it is advisable to be aware of the risks associated with it.¹⁵ Digital economy has following flaws that need to be checked before going for it.

Online Crime or Cyber Crime

Biggest concern of digital economy is rising cyber crime. A hacker can within seconds take control of the whole economy. If such a scenario takes place,

it would be a great security issue to each and everyone

Lack of Awareness

Technology is not everyone's cup of tea. Making people aware and also making them use the new technology with all safety rules is definitely a challenging task especially in India where literacy rate is not so good.¹⁶ People who are above 50 years are not tech savvy. Educating them of digital transactions is again a big task for any government.

Overhauling of Banking Institutions

Before introducing complete cashless transaction system in any country, there are some prerequisite conditions that need to be fulfilled. Bank employees has to be trained to process and undertake the new changes in banking system and their work will become complicated and voluminous. Developing countries especially India that does not have adequate internet connections in all places has to undergo lot of changes technically to ensure smooth working of cashless mechanism. And if Cashless Economy is going to be introduced, free Internet centres for such transactions has to be made available in each and every area, all over the country

Other Risks

There are other many challenges associated with online payment like Losing your credit cards or being the victim of digital hackers which in turn leads to denied payment, card theft, card skimming, identity theft, account takeover, fraudulent transactions and data breaches etc that has to be taken care of through appropriate regulatory authorities.¹⁷ Not only that each of those incidents leads to countless hours of dealing with financial institutions and law enforcement to try to gain access back to accounts, redress fraudulent activity and reclaim one's own identity for which government need to employ trained personnel.

Financial Crisis

In times of financial crisis or natural disasters when national security grids fail or hacked by criminals then it is difficult to operate cards but cash in hand can help the citizens to obtain important supplies for their survival.

Privacy Issues

Card payment enables the government to monitor purchases, spending habits and businesses of its citizens. Under this new system, the government will have a total control of our transaction and therefore exposing the privacy of individuals.

Handling Issues

Proper handling of a mobile phone or payment card is an additional challenge for the government as users must be able to remember details as personal identification number (PIN) and passwords to properly operate card transactions. Elderly or illiterate people might find it complicated and this could lead to compromise privacy and divulge their personal codes in search of assistance.

Prerequisites for a Cashless Society

To turn an age old dependence on physical cash transactions into cashless society is a just a dream without proper preparation in this regard. There are few prerequisites like technical infrastructure, awareness, social acceptance and comprehensive

legal measures in place for a successful transition to cashless economy. Countries like Sweden and Belgium etc has already adopted a full-fledged cashless economy mode but they have completely different social and technical atmosphere than India which is a major challenges.¹⁸ Following is the list of some preconditions that are must for any country to adopt and enforce cashless economy successfully.

Technical Infrastructure

Technical infrastructure includes efficient banking systems, impeccable digital infrastructure, uninterrupted internet connectivity, prevalence of robust digital payment interface and proper penetration of Point of Sale (PoS) terminals are some of the issues that need to be established before pushing any economy into cashless.¹⁹ Other than that Increasing smart phone penetration to rural areas, boosting internet connectivity in every public and private places and building a secure, strong payments infrastructure is a pre requisite to transition into a cashless economy.

Universal Accessibility

There is main pre condition that every individual irrespective of their age and occupation must have access to banking facilities and should hold a bank account with debit/credit card and online banking facilities as well as fully aware of its application and implication for digital payment.

Mass Awareness

Ensuring financial and digital infrastructure alone is not sufficient to transition to a cashless economy if citizens are not aware of how to use the online services. The citizens should also be made aware of the financial and digital instruments available and how to transact using them in safe and secure way.

Cyber Security Measures

Since digital infrastructure is highly vulnerable to cyber-attacks, cyber frauds, phishing and identity theft it is impertinent for any country to employ effective and holistic cyber security measures to establish secure and resilient payment interfaces.²⁰ This includes enhanced defences against attacks, data protection, addressing privacy concerns, robust surveillance to pre-empt attacks and institutionalised cyber security architecture.

Changing Habits and Attitude

The most difficult challenge is to make people adopt e-payments in an incremental fashion and spread awareness to initiate behavioural change in habits and attitude. Government can instil that confidence in citizens for using online payment modes by announcing different schemes as well as employing awareness campaigns in colleges and offices etc.

Rural Approach

Major portion of Indian population resides in rural areas which lacks in major technical facilities and awareness about latest technology. While urban centres mostly enjoy high speed internet connectivity, semi urban and rural areas are deprived of basic stable net connection. Therefore, even though India has more than 200 million smartphones, it is still far away to introduce online payment system in rural

areas. Even with regard to presence of ATM's, PoS terminals and bank branches there exists a significant urban-rural divide and bridging this gap is a must to enable a cashless economy.

Indian Scenario

Although there is no doubt that cashless economy will boost economic growth and all round prosperity but India is a country with 1.34 billion people out of which only 371 million are connected through online network system as of June 2016.²¹ Experts believe that numbers are going to get double over few years but online social activities are different from online payment system. It is bit complicated and confusing especially for illiterate people who form a vast percentage in India. There are few road blocks that need to be addressed before going in for the leap.

Number Mobile Users

Mobile phones have become necessity today but not every Indian citizen is having mobile phones, let alone net connections. The latest figures from the Indian telecom regulator (TRAI)²² show that, as of 31st July 2016, India had a teledensity of 89%. These numbers show the connections but how many of these use internet is still not confirmed as not everyone is aware of utilising online services. Other issue is that customers use multiple SIM cards so that add to the confusion as to the actual data regarding internet connected citizens in India. So to make people use online payment method there should be enough population who uses online services and know how to use it properly which is not the case in our country.

Availability of Reliable Connectivity

In order to successfully launch cashless economy government need to speed up the establishment of online infrastructure, WiFi connectivity and swift internet connections everywhere including rural areas.²³ This will built customer confidence to use online payments for future purposes and encourage everyone including aged and illiterate population to learn and take up online payment mode. Right now the internet connectivity is a major issue that needs to be taken care of otherwise unsatisfied customer discourages future prospects of this campaign as experts are saying that government is trying to push our economy in a cashless mode where connectivity doesn't exist. So there was a huge amount of pressure on the government in this respect. Internet connections should be fast, smooth and hacker proof otherwise there is no future.

Point of Sale (PoS) Machines

According to a study a person spends less with physical cash whereas he or she tends to spend more with credit and debit cards. That's why most people avoid using cards. India had 358433.7million transactions, as of February 2017 through credit and debit cards.²⁴ It means people are reluctant to use credit cards now making people or encouraging them to use online payment system over physical cash is very challenging task since it's about human psychology.

Another issue is availability of point of sale (PoS) machines like ATMs etc. Demonetization had shed a great light on this issue as people had to suffer a lot due to that, but there were only 1,461,672 point of sales machines in India, as of August 2016, according to the RBI.²⁵ A 2015 Ernst and Young report said that India has the dubious honour of having one of the lowest POS terminal penetration, with only 693 machines per million. Brazil had 32,995 terminals per million people and China and Russia had around 4000 terminals per million people. Even if we make people use credit cards and pursue them to use them still we are short of PoS machines to provide online payment services to every Indian citizen.

Payment and Mobile Network Capacity in India

Stable and 24/7 internet connectivity is must for online payment system which is very exceptional situation in India. Many times people have faced low connectivity, breakdown of servers or overloading of various sites etc in India. With the increase in online payment methods and over loading of online payment sites there are very much chances of breakdown of servers and failed transactions that could bring in lot of problems for common man who does not understand the whole phenomenon let alone how to handle it. Government need to power up the network capacity to adjust the work load of such a populated nation like India. The major question is if you don't have cash, and there is insufficient connectivity, how will you be able to buy anything, use public transportation etc?

Lengthy Process

For small purchases cash is convenient like if you have to buy a two rupees candy, and you have to use your credit card for that which will take a lot time where with physical cash it's not an issue. Same is the case while going through toll booth or parking tickets etc. For example when you use a card, you need to place it in a PoS machine, get a user to input a PIN, and if there is connectivity, wait for the merchant to get a confirmation before you can leave. For digital transactions, you need to get a user to scan a merchant QR code, authenticate with a PIN.²⁷ Or, you need the merchant to send a payment link to a customer, for the customer to receive it, open a page, type in details and complete a transaction.²⁸ Then wait for the merchant to receive a confirmation of the transaction before you can leave. All this time taken discourage the online payment mode especially in smaller amount transactions

Security Issues

The difference between getting robbed on street or anywhere and getting hacked online is very crucial. person getting robbed on street might lose what he or she has in his/her pocket but online hacking pose a greater risks ranging from identity theft, personal details misused, online frauds and financial lose etc. Major reasons that encourage hacking includes weak links, low online security infrastructure and lack of knowledge among end users. There has been consistent rise in cyber crime incidents in India due to its weak cyber security infrastructure. There have been reports of many major banking institutions like HDFC and Axis Bank

hacked in 2016.²⁹ In such a scenario without proper defence mechanism in place the move to make India a cashless country increases security risks for all citizens, with each account/wallet company becoming a single point of failure.

Privacy Issues

In cashless economy each and every transaction is tracked and documented online. This is great for governance, with taxation, but there is no protection for citizens, as to who owns that data, whom they can share it with, and how it will be utilised. Moreover India doesn't have a privacy and data protection law to protect the innocent citizen giving away valuable personal information to the government without any surety and security. Cash offers that relative privacy and anonymity, that the Government of India is trying to deny its citizens. The only cashless currency that affords anonymity is bitcoin but that is also a risk for national security as black marketers, drug dealers and terrorist outfits may misuse this payment method to hide their illegal deals.

Language Barrier

There is vast majority of Indian citizens who do not know how to write or read English language. Since most of online payment is done in English language, language barrier is going to be a great challenge in India. Although there are few companies who have understood this problem like Paytm who has recently updated their application with some features enabled in Indian languages and there is Mobikwik and PhonePe that works in English, Hindi and Tamil.³⁰ However, most mobile handsets don't have an Indian language interface, as don't most applications and services. Apart from Snapdeal, no e-commerce company tried going the Indian language way which is very shocking considering the move to make Indian citizen use online payment method where they cannot even order because of language constraint. In such scenario physical cash is unbeatable.

Cost of Transaction

There are various additional costs that merchants have to bear in order to install online payment machines. For example setting up of internet connection, digital device, pay monthly rental for connection or machines etc cost extra money. Other than that they have to pay merchant discount rate (MDR) for accepting credit cards, which is 2.5-1.7% per transaction. On debit cards, they need to pay 0.75% per transaction below Rs 2000 and 1% for transactions above Rs 2,000 etc.³¹ These extra costs cut into their profit or they might charge more from customer in order to cover the losses. Overall it affects the common people. on the other hand customer also have to shell out extra money in terms of getting smart phone, internet connections and other data charges to avail of online payment facility.

The internet connectivity does not come cheap.

After considering above points we can say that process of converting Indian economy into cashless is very time consuming and risky as there is lack of adequate technical, legal and social environment in India. Although it may seem costly and

risky move, but it cannot be ruled out that it is the future.

The important thing is to give people choice, and switch people to cashless gradually but with proper preparation otherwise this whole campaign will lead to disaster.

Conclusion and Suggestive Measures

From the above stated analysis, it appears that there is no doubt that cashless economy will help in fighting corruption and money laundering as there are countries who have proved that by shifting towards cashless economy. Not only that there is a fraction of people who are awaiting the cashless economy movement but it does not wither away the risks that are associated with it. It is expected that cashless economy will reduce the risk associated with carrying cash like loss of cash, theft and armed robbery but it will also expose the savings of an individual to everyone including cyber criminal for which India is ill prepared. Towards Digital Economy government initiated launch of 'two new schemes to promote BHIM app, including cash back scheme for merchants; Aadhaar Pay to be launched for people who don't have mobile phones.³² This will help millions of Indians overcome the hassles of dealing in cash to emerge as a truly cashless economy but it is not enough. Government is taking many steps to make online transactions popular and feasible for common man but this is going to take more than twenty years to make such a huge Nation get use to online transactions. This is a transition phase which also poses a greater threat as lot of new users will turn towards digital transactions without knowing the side effects. Cyber criminals will create fake websites, clone cards and create malicious apps to steal money from innocent and new users and since Indian government is slow in providing regulatory framework to deal with such attacks this will add to the woes of common citizen. Government need to work really hard and make preparations for the smooth implementation of the cashless system in India.³³ For example there is urgent need to intensify the public awareness programme about the cashless system so that everybody will be acquainted with the system before its introduction since it will affect everybody. Since there is a high rate of illiteracy in India, and all people must be brought into the system, the government should design special awareness programmes for the non-literates, and also design appropriate operating systems with the help of signs and symbols to help the illiterate use cashless system software.³⁴ Beside that there should be adequate internet security framework and strong legal framework to deal with cyber criminals so that the public can be assured and protected against cyber-attack and fraud.

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