

Digital Finance: Evolution of hard cash to Cashless transactions

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ABSTRACT: The cashless society is fitting an ever more popular matter of discussion in the media. In fact, it has been a topic of frequent debates in society for several decades now. Futurists see the establishment of such a society as inevitable and indeed in countries where electronic payments have reached a higher degree of acceptance the eventual doom of cash does not seem too distant in the future. However, the extent to which individuals can make use of the alternative systems varies greatly from country to country and so does the frequency of using the different payment methods.

KEYWORDS: Cashless transactions , electronic payments

I. INTRODUCTION

Most developed economies with high degrees of financial inclusion are characterized by low usage of cash as a medium of exchange. Higher income and education levels, allows for households to use alternative mediums of exchange other than cash. In these economies, plastic money (credit, debit and prepaid cards) and other mediums of exchange such as online transfers are widely used as mediums of exchange. Greater usage of these alternative mediums of exchange, not only reduces the costs associated with transacting in cash, but significantly reduces the opportunity costs associated with the traditional forms of banking. On the other hand, most developing and underdeveloped economies are characterized by low levels of financial inclusion. This limited penetration of the formal financial system in turn implies limited scope of shifting to alternate forms of payment. In such countries, where a large section of society is excluded from the formal financial system, cash serves as the principal medium of exchange. Although, the rapid dissemination of technology platforms over the past decades has significantly aided in a movement away from cash, it is primarily limited to a particular section of highly educated, higher income earning sections of society.

In India, as in other countries around the globe, an organized mode of payment has emerged over time from the barter system to the more convoluted forms of monetary arrangements. The prevalent mode of settlement across India in the 20th century has been coins, cash and cheques. As we move ahead into the 21st century, payment through cash and cheques itself has encountered a transfiguration. It has moved from being a physical paper-based transfer of value to a virtual electronic one. This is in line with the introduction of advanced technology based systems in banking services world over which resulted in great modification in terms of how financial organizations provide services to customers purchases such as identification along with that it keeps track of transactions as they are incurred with all the specifics of purchases such as store name, date of purchase, price of the product, purchase place etc. Thus holder has the facility to “retrospect” his memory about his purchases which is denied in the case of paper money holder.

In a developing economy like India, where 40 percent of the population is excluded from the formal financial system, where the penetration of alternative mediums of exchange is limited, cash plays a crucial role as a medium of exchange. It is often observed that even among those who regularly engage with the formal financial system, use of cash as a medium of exchange dominates over the use of alternative forms of exchange such as plastic money and internet banking. While transactions of higher value may be routed through the banking system, those undertaken on a daily basis are to a large extent carried out through cash. Cashless economy is an economic system in which transactions are not done predominantly in exchange for actual cash. Simply put, it is an economic setting in which goods and services are bought and paid for through electronic media. Information Technology plays an important role in bringing about sustainability of the policy. In the future of all business, particularly that in the service industry lies in

information technology. In fact, information technology has been changing the way companies compete. Banks are companies engaged in banking business. Their future is, therefore, linked to the pervasive influence of information technology.

II. WHY CAHSLESS

India continues to be driven by the use of cash; less than 5% of all payments happen electronically however the finance minister, in 2016 budget speech, talked about the idea of making India a cashless society, with the aim of curbing the flow of black money. Even the RBI has also recently unveiled a document “**Payments and Settlement Systems in India: Vision 2018**” setting out a plan to encourage electronic payments and to enable India to move towards a cashless society or economy in the medium and long term. "Digital transactions bring in better transparency, scalability and accountability. The new move will compel more merchants to accept digital money.

Benefits of a Cashless Economy According to Ochei, (2013), financial experts have repeatedly pointed out the monumental gains in the cashless bank policy. They also alluded that it will ensure:

1. Faster transactions – reducing queues at point- of- sale.
2. Improving hygiene on site – eliminating the bacteria spread through the handling of notes and coins.
3. Increase sales
4. Simplify cash collection – time spent on collecting, counting and sorting cash is eliminated.
5. Managing staff entitlements

There are several ways for cashless fund transfer or transaction using cards or mobile phones as 'prepaid payment instrument'. These can be issued as smart cards, magnetic stripe cards, Net accounts, Net wallets, mobile accounts, mobile wallets or paper vouchers. These are classified into three types:

Closed: Issued by an entity for purchasing goods and services only from it, these don't allow cash withdrawal or redemption. Ola Money is one such closed wallet.

Semi-closed: These are used to buy goods and services, including financial services, from merchants that have a specific contract with the issuer. These too don't allow cash withdrawal or redemption and include wallets offered by service providers like Paytm and State Bank Buddy.

Open: These can be used to buy goods and services, including fund transfers at merchant locations, and also permit cash withdrawals at ATMs. All Visa and Master-Card.

III. APPROACHES FOR CASHLESS TRANSACTIONS



Net banking / Online Banking: This does not involve any wallet and is simply a method of online transfer of funds from your bank account to another bank account, credit card, or a third party. You can do it through a computer or mobile phone. Log in to your bank account on the Net and transfer money via national electronic funds transfer (NEFT), real-time gross settlement (RTGS) or immediate payment service (IMPS), all of which come at a nominal cost ranging from Rs 5-55.

Online banking allows a user to execute financial transactions via the internet. Online banking is also known as "internet banking" or "web banking." An online bank offers customers just about every service traditionally available through a local branch, including deposits, which is done online or through the mail, and online bill payment. Online banking allows a user to execute financial transactions via the internet. Online banking is also known as "internet banking" or "web banking." An online bank offers customers just about every service traditionally available through a local branch, including deposits, which is done online or through the mail, and online bill payment. Net banking is changing the ways that people interact with financial institutions by enabling transactions to be performed through personal computers and mobile devices. This access allows customers to be in virtual contact with their banks on a regular basis, while minimizing the time spent in a physical location. For example, smart-phone apps allow customers to make deposits by taking pictures of the front and back of checks, which eliminates the need to go to a brick and mortar location. Online banking also enables paperless bill paying, record keeping and money transfers between accounts. Internet banking system and method in which a personal computer is connected by a network service provider directly to a host computer system of a bank such that customer service requests can be processed automatically without need for intervention by customer service representatives. The system is capable of distinguishing between those customer service requests which are capable of automated fulfillment and those requests which require handling by a customer service representative. The system is integrated with the host computer system of the bank so that the remote banking customer can access other automated services of the bank. The method of the invention includes the steps of inputting a customer banking request from among a menu of banking requests at a remote personnel computer; transmitting the banking requests to a host computer over a network; receiving the request at the host computer; identifying the type of customer banking request received; automatic logging of the service request, comparing the received request to a stored table of request types, each of the request types having an attribute to indicate whether the request type is capable of being fulfilled by a customer service representative or by an automated system; and, depending upon the attribute, directing the request either to a queue for handling by a customer service representative or to a queue for processing by an automated system.

Numerous factors — including competitive cost, customer service, and demographic considerations — are motivating banks to evaluate their technology and assess their electronic commerce and Internet banking strategies. Many researchers expect rapid growth in customers using online banking products and services. The challenge for national banks is to make sure the savings from Internet banking technology more than offset the costs and risks associated with conducting business in cyberspace. Marketing strategies will vary as national banks seek to expand their markets and employ lower cost delivery channels. Examiners will need to understand the strategies used and technologies employed on a bank-by-bank basis to assess the risk. Evaluating a bank's data on the use of their Web sites, may help examiners determine the bank's strategic objectives, how well the bank is meeting its Internet banking product plan, and whether the business is expected to be profitable.

Some of the market factors that may drive a bank's strategy include the following:

- Competition
- Cost Efficiencies
- Geographical Reach
- Branding
- Customer Demographics

Emerging Challenges of online banking

Online banking presents challenges to the financial industry as well as end users. For traditional banks, the biggest challenge is keeping up with rapidly evolving technologies and alternative banking options. Online banks present one form of competition, while digital payment systems such as Apple Pay, Google Wallet and PayPal offer alternatives to traditional credit cards. **Account security** presents challenges to both banks and end users. The financial industry has become one of the primary targets of professional hackers, while the loss of a mobile device, for example, can result in full access to an online bank account for the person who finds it.

Mobile banking: This is basically a virtual wallet available on your mobile phone. You can store cash on the mobile to make online or offline payments. Various service providers offer these wallets via mobile apps, which you need to download on the phone. You can transfer the money into these wallets online using credit/debit card or Net banking.

This means that every time you pay a bill or buy online via the wallet. Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a mobile phone or tablet. It uses software, usually called an app, provided by the financial institution for the purpose. Mobile banking is usually available on a 24-hour basis. Some financial institutions have restrictions on which accounts may be accessed through mobile banking, as well as a limit on the amount that can be transacted. Mobile banking is a type of electronic banking, or e-banking, which includes a broad array of electronic banking instruments and channels like the internet, POS terminals, and ATMs.

Definition: The use of a mobile phone to access financial services and execute financial transactions. This includes both transactional and non-transactional services, such as viewing financial information on a user's mobile phone.

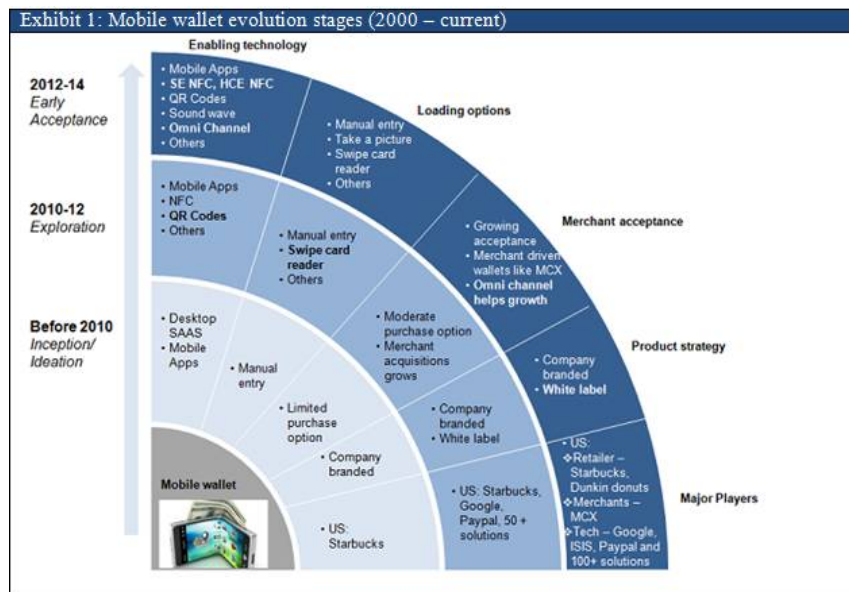
M-banking is subsumed under the larger category of electronic banking. Electronic banking (e-banking) refers to "the provision of retail and small value banking products and services through electronic channels. These include deposit taking, lending, account management, the provision of financial advice, electronic bill payment and the provision of other electronic payment products and services such as electronic money" (Basel 1998:3). Mobile payment services enable consumers to make payments to an individual or firm using a mobile phone, tablet computer or other handheld device. There are different methods of making mobile payments, for example by storing credit or debit cards in a mobile wallet or making payments to businesses or individuals from within a mobile banking application (app). Consumers can also use contactless technology built into the mobile device (hardware), SIM card or mobile software to 'tap and pay' at merchant terminals. Mobile banking is a broader term that encompasses mobile payments (described above), in addition to information services such as checking balances and viewing statements. There are a range of options for accessing mobile banking, such as accessing banks' internet banking (mobile optimised) webpages using a browser or using a bespoke banking app for a mobile phone or tablet.

Mobile Banking Models Lyman et.al. (2006) makes two distinctions of branchless banking: (1) bank-led and (2) non-bank commercial actors. This was further expanded by Goswami & Raghavendran (2009) by breaking down mobile banking variants into 5 models based on how they partner up with telecommunication providers:

- carriers going solo,
- banks going solo,
- exclusive bank and telco partnership,
- bank-telecom open partnership, and
- open federation model.

The terms m-banking, m-payments, m-transfers, m-payments, and m-finance refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds, or even access credit or insurance products. This paper uses the compound term m-banking/mpayments systems to refer to the most common features. There is no universal form of m-banking; rather, purposes and structures vary from country to country. The systems offer a variety of financial functions, including micropayments to merchants, bill-payments to utilities, P2P transfers between individuals, and long-distance remittances. Currently, different institutional and business models deliver these systems. Some are offered entirely by banks, others entirely by telecommunications providers, and still others involve a partnership between a bank and a telecommunications provider (Porteous, 2006). Regulatory factors, which can vary dramatically from country to country, play a strong role in determining which services can be delivered via which institutional arrangements

IV. EVOLUTIONARY STAGES OF MOBILE WALLET



Source: LTP research and analysis

Mobile wallet concepts began in 2000. With growing penetration of smart phones across the US, certain players starting looking at replacing plastic cards with always-on, ubiquitous mobile devices. We see that the industry has evolved into its current state along three noticeable phases.

Phase I: Inception/Ideation (Before 2010)

Early on, nobody was excited about mobile wallets. Early adopters included desktop based SAAS products and mobile apps were considered enabling technologies. From a consumer perspective purchase options were limited to a few major retailers (like Starbucks). Users had to manually enter information and most mobile wallets were company branded with few white label options.

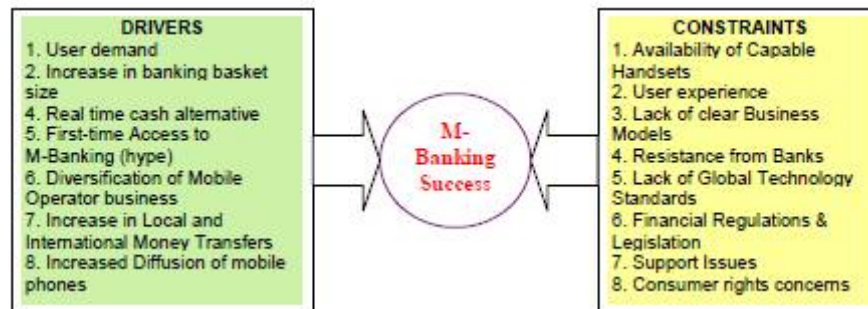
Phase II: Exploration (2010-12)

In 2010, multiple start-ups and large companies jumped into the game, testing combinations of enabling technology, loading options and product strategies to drive customer adoption. Players became more aggressive about merchant acquisition. NFC's QR codes were the major enabling technologies used for making m-wallet products. For NFC, the additional cost of hardware and availability remained a challenge. The emergence of white label solutions such as SeQR, Paydiant and others spurred adoption with retailers, but adoption was still in its infancy.

Phase III: Early acceptance (2012 onwards)

Mobile wallets became popular in Silicon Valley and NY alley with more than 100 players now participating in the US m-wallet industry. With the launch of Google wallet, ISIS and PayPal, the m-wallet market seemed to be on the brink of success. Though the ISIS numbers have not been encouraging since launch, the market is slowly expected to pick up. Omni-channel wallet options are allowing stronger acceptance at retailers. Additionally, merchants have realized the potential of m-wallets and a handful of large merchants like Wal-Mart, K-mart, Kohl's, Sears, have launched their own MCX wallet.

Drivers and Constraints of M-Banking: The field of M-Banking is fairly new and fast evolving. It also rests at the overlap of several domains including those of banking, telecommunications and security. The overlap substantially raises issues of operational or regulatory concern. The compelling drivers for M-Banking as well as significant constraints that could restrict its growth can be summarized as shown in



Mobile banking provides a ray of hope for the unbanked. The rapid uptake has systematically ensured that the critical mass required as a threshold for sustainable expansion is reached. With the potential outburst of M- banking showing signs of reaching the wider population segment, the mobile banking divide (gap between those with access and those without enhanced banking services) can be expected to gradually diminish. Sustained introduction of new mobile based banking services, tend to complement existing services thus those without access to the original services are actually thrust into a further distance from access. Cost of phones and services also remains a significant drawback. The fact that a vast proportion of the population still relies on pay phones is an indicator of the financial challenges faced by many potential users of the new banking system. The distribution of mobile phones and consequently ability of service use can also be regarded as inequitable. More men have phones than women, thereby indicating a dominance of ownership and consequently the access. Barriers Potential barriers to the success of mobile wallets include: Limitation in the devices for which wallets are available Uncertainty regarding future technological developments Lack of legal clarity possible increase in costs for retailers

- Uncertainty regarding future technological developments
- Lack of legal clarity
- Possible increase in costs for retailers

Challenges:

There are more than 100 mobile wallet companies operating in the US alone, but the low adoption among consumers and acceptance infrastructure at merchants is creating a hurdle for the growth of mobile wallets perceived security threat and lack of privacy over mobile payments is considered to major factor inhibiting the m-wallet adoption. At the same time, lack of rules governing mobile payments transaction makes consumer more cautious making such payments. Many major mobile phones manufacturers are yet to adopt the proximity technology like NFC for payments. Apple is one of such major manufacturer in US. Apart from technology and security perspectives, the consumers currently do not see a strong incentive in form of making their world wallet free, without a scope of integrating multiple loyalty, rewards and payment cards into one.

On the other hand, additional cost for NFC POS is major hindrance for merchant adoption. With no technology emerging as clear winner, retailers are playing wait-n-watch game resulting in less than expected adoption. Mobile wallets need to integrate with retailers existing CRM to have more tooth and drive strong adoption.

V. CONCLUSION

The mobile banking is moving up on the adoption curve is evident in the number of implementations both on a pilot and real-time basis and also from the level of interest evinced in the discussions held among the various stakeholders. Once awareness is created among the general public on its benefits and more banks offer this service to their customers there would be a further growth in transactions with both existing and new customers using the service. Banks need also have to be proactive in up scaling their mobile banking products and services if they have to safeguard their traditional advantage in the payment system terrain and leverage it to expand their customer base including the tech-savvy Gen Next. There are success stories of mobile banking in states like Bihar, thanks to the initiatives of the certain

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NGOs and banks, which has enabled not only financial inclusion but made less literate people mobile banking-savvy. This needs to be emulated through adequate publicity and education to achieve M-powerment in a significant way.

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