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Fintech Revolution - A Step towards Digitization of Payments: A Theoretical Framework

Ms. Smrity Baiju, Prof. Ch. RadhaKumari
[1]*MBA II student, Department of Management & Commerce, SSSIHL Anantapur Campus, A.P, India.*
[2]*Department of Management & Commerce, SSSIHL, Anantapur Campus, A.P, India.*
chradhakumari@sssihl.edu.in

ABSTRACT

A research study titled "Fintech Revolution: a step towards digitization of payments" was conducted with the focus on learning about digitization of payments in India and its importance in the current economic scenario. The study focused on three major FinTech companies in the country. There is a large pool of secondary data available which is analysed with the help of a software tool called "MAXQDA". Using the qualitative analysis the variables that lead to digital cash are identified. In support to the qualitative analysis a pre-tested questionnaire was administered to assess the use of digital wallet among the users which is further analysed using "Statistical Product and Service Solutions package" (IBM SPSS), a data analysis tool.

As part of the above research study, the evolution of digital payment system, the countries where the system is under total implementation have been brought to light along with the government programs towards digitization and the latest developments that have intensified the need for digitization in India, are covered in the current paper.

Key words: FinTech, MAXQDA, SPSS, Digitisation of Payments, Review.

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1. Background for the current paper

A research study titled "Fintech Revolution: a step towards digitization of payments" was conducted with the focus on learning about digitization of payments in India and its importance in the current economic scenario. The study focused on three major FinTech companies in the country. There is a large pool of secondary data available which is analysed with the help of a software tool called "MAXQDA". Using the qualitative analysis the variables that lead to digital cash are identified. In support to the qualitative analysis a pre-tested questionnaire was administered to assess the use of digital wallet among the users which is further analysed using "Statistical Product and Service Solutions package" (IBM SPSS), a data analysis tool.

As part of the above research study, the evolution of digital payment system, the countries where the system is under total implementation have been brought to light along with the government programs towards digitization and the latest developments that have intensified the need for digitization in India, are covered in the current paper.

1.1 Introduction

The era of electronics is transforming the world in to a digitalized economy and the mode of payment is not an exception. In the ecommerce field, the words like smartcards, Net banking, digital cash etc. describes "money". Electronic money is transfer of funds electronically through payment interface. Thus Electronic money is the digital form of currency. The ultimate digital cash would be a currency for all countries so as there will not be any loss during transaction as well as no inconvenience with local

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denominations. It might be a new currency all together which can make transactions cheaper and convenient which is very hard to imagine right now. It's all about moving from tangible to intangible. Initially Gold's value was attached with physical goods for the purpose of trade. Then gold was recognised as high value commodity and economy shifted to metal coins. Metal coinage dominated the economy for centuries till they realised it to be heavy to carry and difficult to store which paved the way to paper money. Now digital cash is another revolutionary step evolved in the economy which can even lead to decentralization of power.

1.2 Digitization of payments

During 1950s credit cards and charge cards introduced into the economy. In 1974 Visa brought a fully electronic payment system where authorization took only 40seconds. Another development followed this is Automated Clearing Houses which allowed bank to bank transfers digitally. Most important and innovative development in the payment space was mobile payments. The evolution of digital cash thus changed the phase of payment system. The word digital cash has been first introduced by David Chaum, who is an expert in financial cryptography, in the year 1982 in his research paper. He was the founder of an American company known as DigiCash which generated and marketed software called ecash. Coco cola in 1997 offered allowed users to pay through mobile when they were buying from vending machines. During this era many online business were unable to take digital payments due to high transactions fees. Consumers too find it difficult to insert their payment and shipping information whenever they made an online buying.

In 1998 PayPal emerged as one of the largest payment companies. it solved many by allowing its user to make online payments on any websites via PayPal accounts. With the emergence of e-commerce, digital payment system gained importance. The mobile penetration further strengthened the digital payment mode. E-commerce wedded with smart phones apps created a digital wave in the payment ecosystem. The merchants and consumers prefer the digital mode as it is convenient and its time saving compared to the other mode. Globally all business models need to adapt to this "technological disruption" in the payment system.

1.3 FinTech companies helping in transforming payment system around the world

FinTech companies around the world are promoting financial inclusion as well as economic development. Asian countries are moving ahead with FinTech to promote digital cash in the economy. In 2007 Vodafone introduced M-Pesa in Kenya while in 2010 SMEs were offered loans by Alibaba in its e-commerce platform. Africa are one of the countries which are not even seen in the global financial system. There is some estimation that over 330 million adults in Africa lack access to formal banking system. The people in this country have relied on family members, saving clubs and unregulated money lenders to meet their everyday finance. Africans are adopting the new ways of transacting as M-Pesa has been a huge success in the country. It reached US$656 million in 2014 as per the statistics and predictable to be double in the coming years. Akinola Jones, co-founder of Nigerian FinTech "Aella Akinola" says "The current operating expenses of the large banks are way too high and FinTech companies provide a more specialised approach to tackling financial inclusion. Africa is 100 years behind in terms of its citizens having access to credit. Data analytics, identity verification, payment systems and mobile phone access will change that and spur growth on a sector by sector basis." In Africa technology is helping the country to become more open to the financial service lowering entry barriers. (Kate, 2016)These FinTechs are changing the finance industry in the Middle East by bringing developments in the system. They are into start-ups to banking institutions. In the Middle East these industries are forcing the banking industry to adapt to technology. Deutsche Bank has already allotted some amount towards digitization. The growths of such companies are not disruptive to the banking industry while they force them to innovate.

China is another country which witnessed the transformation as a result of FinTech evolution. Alipay, one of the FinTech, is dealing with more than half of the mobile payments in the country. Tencent is another app used by many people for wealth management and payments. PayPal entered the market in 2001 and provided online payment solutions to the Chinese economy. Now Alipay has captured the market. The aim of this company is to help the business merchants to penetrate into the rural areas of the country.

FinTechs are thus disrupting the traditional payment model around the world and facilitating digital payment system in the economy.

1.4 Payment system in India

Payment instruments used in the olden days were coins which were either silver or copper or punch marked. The loan system was exiting that time too. The loan deed forms were called as rnapatra or rnalekhya. All the details such as the name of the debtor and the creditor, the condition of repayment, the amount of loan, the rate of interest and the time of repayment were used to be written in the form. Execution of such loan deeds continued even during Buddhist period and they were known as inapanna. During Maurya period there was an instrument similar to bill of exchange known as adesha. In the Mughal period the loan deeds were called as "dastawez". There was another instrument in use during Mughals period was "Pay Order". It was issued from Royal Treasury to District or Provincial treasuries. Another very important instrument that evolved in India was "Hundis". It is the only

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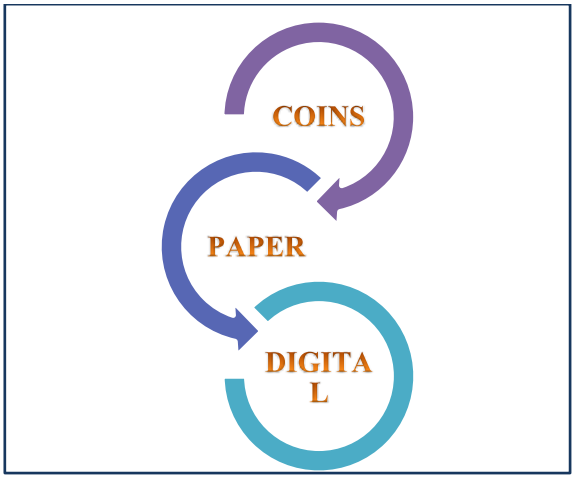
survival among the oldest credit instruments. It was used for remittance, used as credit instrument and for trade transactions like bill of exchange. Paper money has its origin in 18th century. The banks issued these notes were the Bank of Hindustan, the General Bank in Bengal and Bihar, and the Bengal Bank. Later the work was delegated to each Presidency Banks and they could issue notes within certain limit. With the passing of the Paper Currency Act of 1861, Government of India became a monopoly power in issuing notes. The Negotiable Instruments Act was enacted in 1881 to formalise the usage of instruments like cheque, promissory note and bill of exchange. The paper money is substituted by digital cash in India to a large extend.

Figure 1.1: Transformation of payment system



Financial institutions started issuing plastic money like debit cards and credit cards. Later Net Banking was introduced into the economy to ease up the transactions further. The systems like National Electronic Funds Transfer (NEFT), Immediate Payment Service (IMPS), Aadhaar Enabled Payment System (AEPS) and Unified Payments Interface has been introduced to meet the remittance requirements. The development of IT infrastructure in financial institutions, banking system has become easy and faster. With the use of mobile internet many banking services has been i9ntegrated with mobile. Many financial institutions have now apps which act like a traditional passbook and customers send money operating IMPS or NEFT. Payment system is developing rapidly on the back of 'digital revolution'. Government is also focusing on digital payments as it can help the government to reduce cost and increase transparency in the system. The payment system of the nation was evolving healthy manner as it is evident from the development of the payment system. RBI has been a facilitator and it has taken necessary measures at appropriate times for the economic development of the nation. The Indian payment system has progressed in such a way that it has set touchstones for the world to adhere to.

1.5 Digital payment system in India

India follows a traditional cash system society. India wants to move forward towards a digital system but as far now only 5% of the transactions are made using digital payment system. A "Cashless society" is the one which has minimal cash in circulation and all payments are made through cards or digital mode. Even the malls and markets which have a swiping machine, people are not using them. The market is dominated by cash transactions. One of the main concerns for reducing cash transaction in Indian scenario is high cost.

Source: Digital India Programme

The volume of cash in circulation is high as well as the printing cost are really high. Digital cash allows penetrating into rural areas too and do not demand sophisticated infrastructure. Physical banks need not survive as one main office can manage all customers as everything is online. Another major concern for the economy is that fake notes. It found that 1 in every 7 notes is a fake note. That was the ratio India had and digital cash increase transparency reduce fake notes. In order to use the digital system fundamental infrastructure needed is bank account, mobile and most importantly internet connection. There is a need to increase help the rural population to use their bank accounts. Even though many accounts were opened through Jan Dhan Yojna, many are non-operational. There is a need to create faith in financial system of the country and to motivate people to save more.

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Indian government has already taken many initiatives to transfer cash payments to digital payments in order to enhance financial inclusion. Government has already taken initiatives to deregulate the mobile based financial service providers as well as launched Unified Payment Interface in order to promote digital payments in the nation. This initiative is supported by the penetration of smart phones as well as internet in the nation. The trend says that by 2023 the noncash transactions will exceed the number of cash transactions in the nation. The value of banknotes and currencies in transmission are relatively high in the country. Moreover the cost of printing currency is amounted to around Rs.32 billion.

The transactions using debit card, credit card, and digital wallet are on an increasing pace mainly due to affordable internet, ease of transaction and smartphone use.
There are few companies which help for the digital transactions in the nation. IRCTC, Makemytrip, Paytm etc. encourage the customers for digital transactions and companies like Freecharge, Mobikwik etc. are encouraging customers to store money in their wallet by giving offers and discounts which in turn increased the digital payments.

1.5.1 Initiatives by Government of India

a) Digital India

In order to use internet as a mass medium it should be provided equally among all the segments of society. Otherwise it will lead only to "Digital divide". Digital divide is a gap between the information rich and information poor people. It can divide people into categories of those who have access to modern artefacts like internet, telephone, and those who are deprived of the same. This digital divide exists among the developed nations too. In case of India some states like Bihar, Uttar Pradesh, Rajasthan and Orissa which are less developed as well as having weak infrastructure are deprived of many services unlike the other IT developed states. India still lives in villages. For any revolution to take place, there are certain pre-requisites thus digital revolution also need an enabling environment. In case of India, the main bottleneck is infrastructure. Government initiatives started way back in 2002 - "internet for all". The time taken by Radio to reach all over the world was 40 long years while Television took 16years, Personal Computers took 12 years while Internet could accomplish it in just 5 years. Even though mobile internet penetration is at a rapid rate still there are villages in India which do not have any access to internet. Even the places where smart phones are already in use some are not availing the services due to lack of awareness, paucity of digital knowledge and lack of understanding. If the Indian government could fix these loopholes then India can start reaping digital dividend. In order to help the wider population to reap the benefit of Digital Revolution India need to enhance digital literacy as well as to provide the needed infrastructure. Indian government has taken steps towards digital literacy.

The program has three visions:

Figure 1.2: Visions of Digital India Program

One of the main areas covered under Digital India Program is Universal digital literacy. India already invested in infrastructure that can enable digital payments such as UID – electronic ID, back end schemes such as Central Plan Scheme and Monitoring System and the National Payment Corporation of India. In case of front end schemes India is already experienced with smartcards and biometric, mobile phones with Aadhaar enabled dongle, and standard personal computers. The success of technology depends on connectivity. In terms of mobile they are cheaper than any other connectivity devices.Invalid source specified.Digital technologies are emerging as a catalyst for rapid economic growth as well as empowerment of citizens around the world. Digital India programme aims at transforming India in to a digital economy. The program covers many areas like

- Broadband for rural areas

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- Broadband for urban areas
- Universal access to mobile connectivity
- Public Internet Access Programme under National Rural Internet Mission
- Universal digital literacy

Thus it's a programme which covers many Government Ministries and Departments. Digital India aims to provide the much needed thrust to the nine pillars of growth areas. My study revolves around

- The second pillar that is Universal Access to Mobile Connectivity. There are nearly 50,000 villages in India where there is no mobile connectivity. And the program aims at providing the connectivity in the uncovered areas.
- Another program named e-Kranti aiming at connecting farmers, justice, education, security etc. through technology.
- "Infrastructure as a utility to every citizen" where the government aims at providing high speed internet in all gram Panchayat.

Indian telecom industry is growing in a faster pace. The penetration of mobile in rural areas has helped the access and delivery of public services electronically. Around 80% of the internet users in India access internet using mobile. Thus this pillar helps in transforming India digitally using mobile as a main device.

b) Budget 2016

Before the budget 2016 itself, digital payment players in India expected support from the government. In South Korea initiatives were taken in such a way that customers could get some tax rebate if they show their net expenses were incurred digitally and this helped predominantly cash nation to be digital. The Union Budget after all the suspense came up with beautiful initiatives to promote payments through cards and digital means. As per the Memorandum issued by the Government of India has defined digital transactions as "Digital transactions are defined as transactions in which the customer authorizes the transfer of money through electronic means, and the funds flow directly from one account to another. These accounts could be held in banks, or with entities/ providers. These transfers could be done through means of cards (debit / credit), mobile wallets, mobile apps, net banking, Electronic Clearing Service (ECS), National Electronic Fund Transfer (NEFT), Immediate Payment Service (IMPS), pre-paid instruments or other similar means". The main aim of the government initiatives is to

- Increase the ease of using digital cards as well as reduce the burden of physical cash
- From the point of view of government this will reduce the cost of managing cash in the economy as well reduce tax avoidance
- It will reduce counterfeit money.

The ultimate goal of government is to reduce the cash transactions in the economy and to facilitate the digital financial transactions.

a) Demonetisation

India's everyday transaction has changed after November 8th 2016. The announcement of withdrawal of 500 and 1000 notes from circulation affected CEO to vegetable vendors in the economy. This initiative mainly aimed to reduce the black money in the economy as well as reduce corruption. As necessity is the mother of all inventions, the cash crunch in the economy due to sudden withdrawal of currency from economy forced the people of the nation to adapt towards digital payments. This is considered as perfect time for India to move towards digital.

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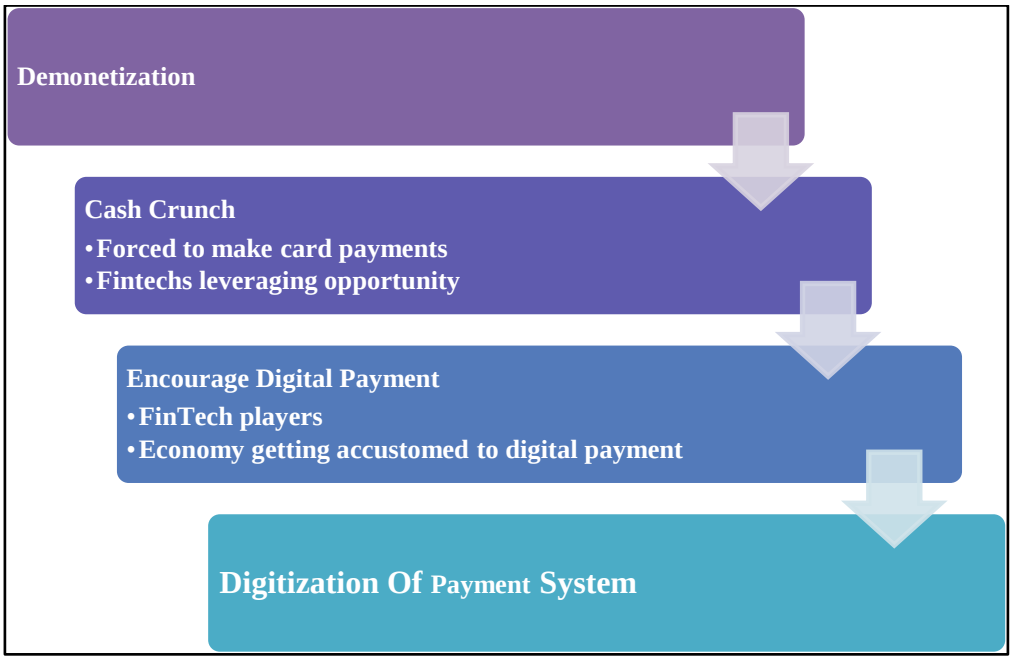
Figure 1.3: Demonetisation leading to digital transactions.

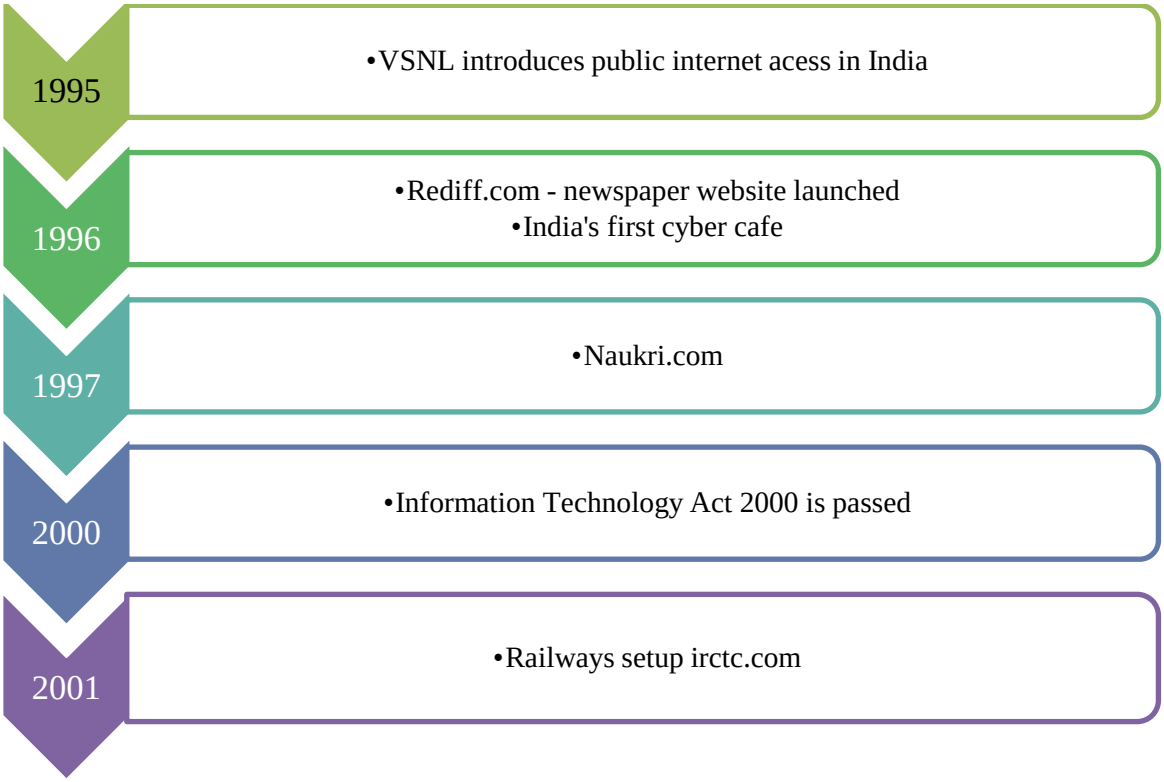


1.6 FinTechs in India- Role in promoting digital payments

Internet in India celebrated its 21st birthday on 15th of August 2016. The internet arrived in India during 1995 through VSNL. Internet became part and parcel of Indian economy as it satisfies almost all roles from entertainer to evangelist, postman to personal banker, and beyond. Indian telecom industry is one of the fastest growing and standing second largest in the world. The smart phone industry is growing very fast in India. By 2017 it is expected that one-third of the Indian population will be having a smart phone. The next stage of evolution in the internet-steered ecosystem is the FinTech Companies.

These companies can provide meaningful and convenience services to Indian economy. The Internet has transformed the way people learn, work, live, shop and even the way they connect.

Time line of Internet in India



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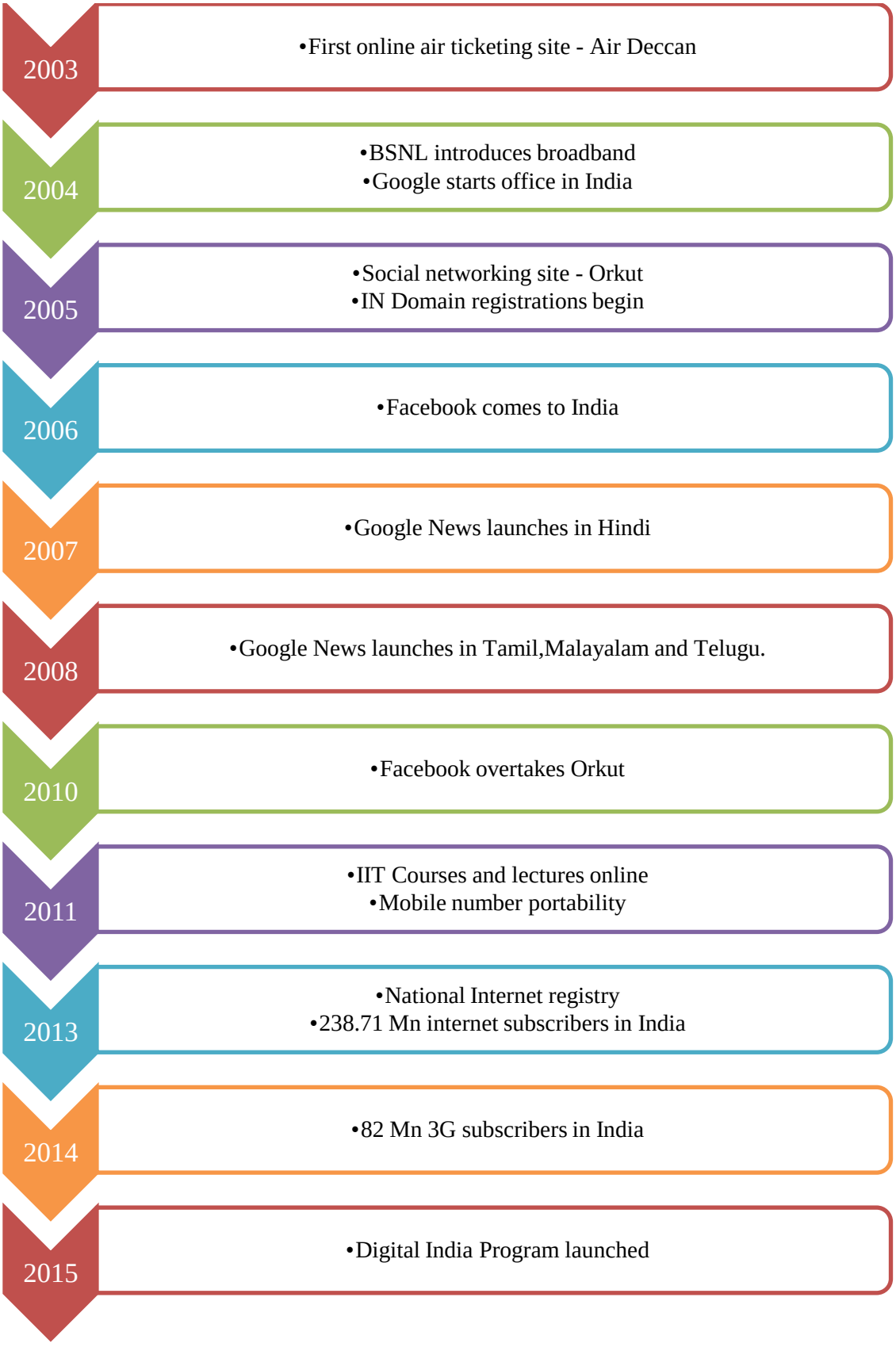

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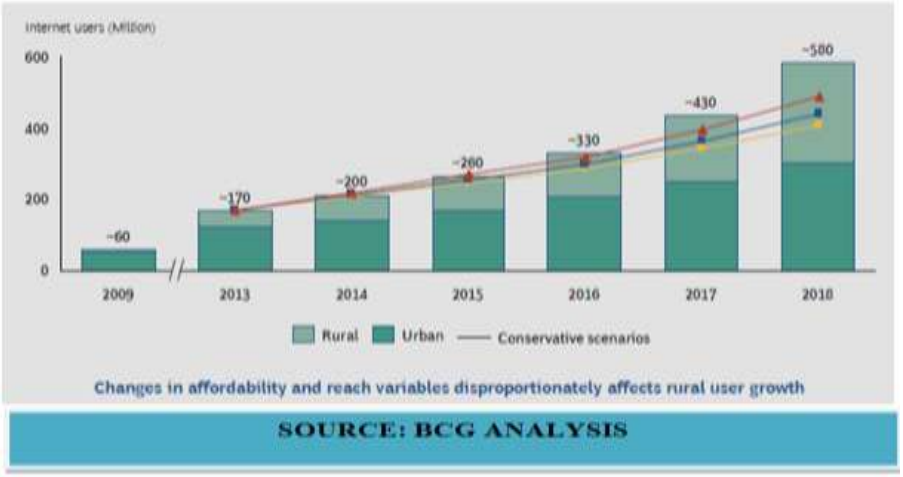
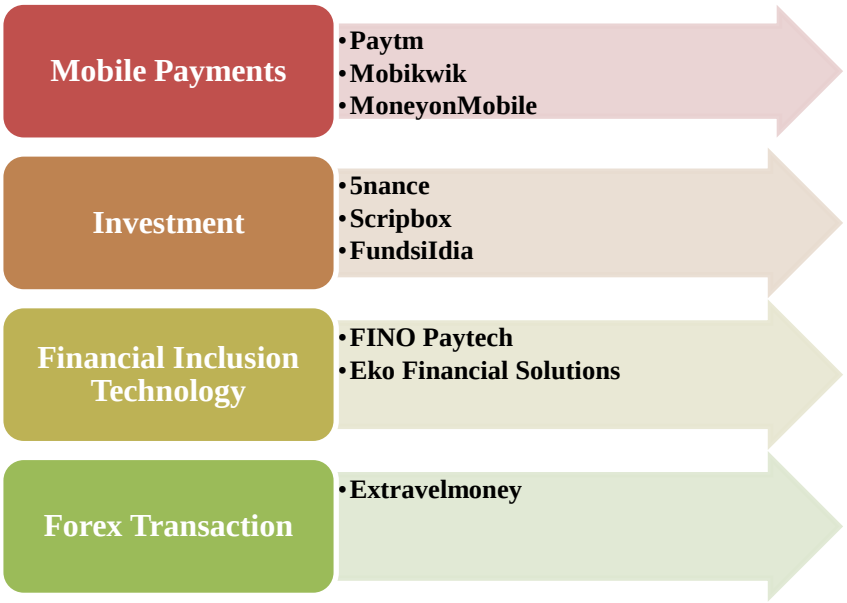
Smart phones are becoming the main mode to access internet in the rural as well as urban areas. In one of the studies conducted by Boston Consultancy group, it revealed that nearly 40 million Indians are using internet and are spending 40-45 hours in its use. It is also predicted that internet users in India will reach half a billion within 2 years from now.



Digitization is a step ahead of internet. For digitizing payment surely internet is the base. There are offline payment systems too. But to initiate such system internet act as a pillar. The mobile phone penetration has almost reached 80% in India. Indians use mobile phones to access internet. In the IAMAI's recent report it disclosed that India will be having 371 million mobile users and 462 million internet users by the end of June 2016. The affordability coined with comfort people shifting from desktops and laptops to mobiles. In the world India stands second in mobile users. The technological revolution started in the financial sector of the company once the FinTech companies started growing. FinTechs are leveraging the infrastructure i.e. Mobile and internet to provide their services. India currently has nearly 400 FinTech companies and most of them have investments around $420 million. Many of these FinTech companies are playing a major role in transforming the payment system of the nation. They are providing financial services through mobile. They are providing financial services at the users' home at their convenience. This helps not only in promoting digital cash but increase the financial inclusion in the economy

Figure 1.4: FinTech services in India



These are some of the companies which are encouraging the digital finance in the economy. Payment wallets are one of the main instruments that are used by the Indian economy to increase the digital cash usage. The demonetisation lead to cash crunch in the month of November 2016, most of the people are using mobile wallet services provided by FinTech companies like Paytm, Mobikwik etc. Paytm has created a disruption in the financial ecosystem by leveraging technology. The company made it so simple for the general public to use it whenever and whenever they want. The registered users of the company are increasing at a high rate. Mobikwik is another company that helps people make financial transactions using mobile. Mobikwik provides wallet service while Paytm is an e-commerce site too. 5nance is FinTech Company which aims at providing financial services like wealth management. Their main aim is to empower users to utilise their wealth in the best way and to achieve their financial goals. They named themselves as "Personalized Automated Advisor". FINO Pay Tech provides technological solutions to

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necessary financial institutions. FINO acts as a business correspondent and adding unbanked sectors in to banking. It also provides consultancy services to national bodies, commercial banks and many microfinance institutions. These companies are encouraging digital payment system in the economy.

1.7 Conclusion

Knowledge about the progress of digital payment system, the countries where the system is under total implementation along with the government programs towards digitization in India and the latest developments in the revolution of FinTech companies, are highly essential to understand and appreciate the progress of demonetisation which is the prime step towards digital India movement

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