Designing Mobile Money Order: Integrating India post to banking systems through mobile banking

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Abstract
The rapid transition and rollover of banks’ branches towards core banking solution is yielding the transformation, evolution and integration of different entities to collaborate and integrate the business strategy on the various fronts such as micro finance institutions, postal services, insurance, telecom service providers etc. The proposed study will illustrate mobile money order evolution, present status of India Post money order, analyse the trend and suggest the approaches for increasing the efficiency of India Post money order by using mobile banking as medium to integrate banking sectors with India Post. The proposed mobile money order for India post would enhance the efficiency of present postal money order in terms of number of factors such as business growth, convenience, reduced transaction costs, social and economic developments and many more.
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1. Introduction

Out of 1.5 billion users of postal financial services in the world, only 400 millions are holders of a postal (bank) account, 300 millions of which located in developing or emerging countries [Anson and Toledano 2010]. As the world moves towards a global economy, fast and prompt money remittances would be needed for creating efficient markets and sustainable economic relationships. Dealing with expanded realms of opportunity, the most successful financial activities will be those that find ways to best leverage cost effective technologies to harness the banking and postal networks to make a seamless network of financial products and services. As the economy interlinks and networks expand, it will be those entities that most efficiently transform, integrate and adopt the business models in such a way that economy and majority of people gets benefited [Kaul 2002]. Unlike traditional banks, whose high operational costs exclude non-profitable customers from the lower strata of society, agents had a pre-existing relationship with local communities, allowing them to reach out to the poorer population. Posts could be especially attractive partners for banks, as they offered a trustworthy and extensive network that was directly accessible to scattered rural communities [Ernesto 2009].

Over the years, several studies have been imparted by researchers and academicians to understand the significance of money remittances through different means of technology products. The regressive motivation has been to lower the transaction costs, increased efficiency, transparency and customer flexibility and usability. The wide spread of mobile phone amongst the masses and thrust for seamless money transfers by integrating the banking sectors to India post through mobile banking would provide value enhancements or otherwise for both the organisations. The Government of India and RBI have been, over the years, working for the better synergy between postal and banking industry for FI (Financial inclusion) program which has been visible in the National Postal Policy statement of India Post such that “Post will provide banking and financial transaction services to cater to the needs of the rural population

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1 Workshop report: Universal Postal Union (UPU)- Alliance for Financial Inclusion (AFI) workshop on financial inclusion and postal banking held at Berne, 9th-10th November 2009
and help realise the policy of financial inclusion for the “un-banked” rural masses. For deepening and broadening its financial services, suitable agreements with public/private sector banks will be forged, so that India Post can offer its unique “last mile” connectivity to the customers. This will permit it to receive fees for the service rendered to the banks and other financial entities. Before this, however, adequate infrastructure and connectivity coupled with application of appropriate software needs to be in place [National Postal Policy India Post 2009].”

Providing these services to developing world is a difficult task. Traditional postal money orders are overwhelmingly inconvenient with no flexibility to customers. The remittance of money order at present requires the person to visit the branch and fill money order form and then it is sent to the destination address either through physical delivery of money order forms or in the electronic form like e-MO (electronic money order or i-MO (Instant money order) buy utilizing the email and internet or other electronic media. Realizing this challenge much research work is going to induce mobile banking as medium for integrating with different enterprises and need of the hour is to consider a holistic approach for rethinking business synergy and models delivering financial services through mobile banking to the remotest and needy people by using cost effective means of technology products. The intention of the study is to analyse the different aspects in mobile money order and identify the research gaps and motivation for its usability and adoption. Mobile banking based transactions is one of the most current researched fields in management, especially in banking and financial sectors covering the studies aimed to Indian contexts such as banking, financial, insurance, postal services, microfinance etc.
2. **Rationale and Significance of Study:**- The spread of mobile phones across the developing world is one of the most remarkable technology stories of the past decade. Mobile usage has seen an explosive growth in most of the Asian economies like India, China and Korea. According to the Cellular Operators’ Association of India (COAI), the mobile subscriber base in India crossed 806 million in January 2011 and still adding approx.12 millions subscribers every month. Mobile banking is the evolutionary step after internet banking where the banks can collaborate with other entities to offer the latest in banking services in variety of business domains. It is expected that mobile phones will be the most preferred and convenient device for conducting banking transactions and emerging as one of the major payment channels in India.

Indian postal system is one of the best distribution channels in the world with roughly one and a half lakh post offices, most of them in the six lakh villages of India has immense potential for the distribution of all kinds of products, including financial and money remittances. For over 150 years post offices have been the most visible and popular face of the Indian population throughout the country when the postman was the only person delivering mail and money orders personally at the doorstep of the people. Now India Post is gearing up to play more comprehensive role by reorienting itself to meet the expectations of future generations. The Economic Survey 2010, which was presented in the Parliament a day before the general budget was announced, proposed a number of initiatives such as Out of 25,531 departmental post offices, 12,604 have been computerized and 1,304 post offices have been networked through leased line with the National Data Centre and 5,170 post offices have been networked through broadband. This has enabled the India Post to offer services like electronic Money Order (e-MO),

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1. **COAI Press Release:** Upsurge in rural subscribers - as per the subscriber data released by TRAI (Telecom Regulatory Authority of India), the wireless industry has more than 95% of the telephone subscribers in the country i.e. of the 806.13 Million subs as of 31st January 2011; the industry has contributed more than 771.18 million. Wireless subscription in urban areas increased from 501.30 million in Dec 2010 to 512.26 million at the end of Jan 2011, rural subscription increased from 250.89 million to 258.93 million, showing a significantly higher growth trend in rural subscription of 3.20% compared to the urban subscription 2.19%.

2. The Economic Survey Report: Plan for modernization and growth of India Postal Services
e-payment and instant Money Order (iMO) and has plans to computerize and network all its post offices in the next two years.

The rapid transition and rollover of banks branches towards core banking solution is yielding the transformation, evolution and integration of different entities to collaborate and integrate the business strategy on the various fronts such as micro finance institutions, postal services, insurance and business agents etc. The India post had been the oldest and prime source of money transfer for the migrant people and serving personnel employed away from their homes such as migrant workers, defence personnel, and other central/state government employees. As per the reforms initiated by Government of India towards computerization and networking of all the post officers spread across the country, it gives the opportunities for banks, financial institutions to utilize the existing setup and resources of post offices spread across the country to integrate the money remittance through cost effective means of technology.3

The widespread reach and expansion of mobile phones is spearheading as the effective media to reap the benefits for transferring the money from mobile handsets without visiting the post offices and branch premises. At present, mobile banking enable the customers to carry out different types of financial and non financial transactions between intra or interbank. However these financial transactions require the existence of bank accounts between the transferor and transferee. However if the mobile banking is integrated with Indian postal system, this integration model, can be used to transfer the money from the customers’ account to destination individual and the delivery of the money would be carried out by the post offices through their internal disbursement systems. Post Office records show that money orders to the tune of approx 8000 crores are facilitated by the post offices networks spread across the different states. The use of digital methods of transactions to remit this money will not only be faster but less expensive and operationally more flexible.

3 An expert committee report (2009) on “Harnessing the India Post Network for Financial Inclusion”. The committee was chaired by Ajay Shah, Senior Fellow, National Institute of Public Finance and Policy. The major recommendation of the committee was a) A savings account hosted on a lightweight banking platform, b) A broad based payments network, C) A competitive mechanism to deliver micro loans to the poor.
The Indian postal systems has been planning aggressively to utilize the existing infrastructure for integrating with various financial and insurance entities to explore the business strategy for financial and remittance services. This study intends to look mobile money order as feasible option for accomplishing the business growth for banking and postal services. In this context, the study will explore the mobile banking as medium to integrate the banks with India post and provide the impetus for business growth to India post and financial institutions in long term. If mobile banking is integrated with Indian postal services then no one can deny that mobile money order innovations would be a key strategy for development of E-banking services and postal money orders, which will change the business models, range of services and methodologies that are the central to financial institutions and India post’s money remittances. Realizing this challenge much research work is going to induce mobile banking as medium for integrating with different enterprises and the need of the hour is to consider a holistic approach for rethinking business synergy and models delivering financial services through mobile banking to the remotest and needy people by using cost effective means of technology products.

3. AIMS AND OBJECTIVES OF THE STUDY: The aim of the study is to find growth potential in business by development of mobile banking based money orders for Indian postal systems and banking sectors. The study will also reveal the issues and challenges involved in the money transfer systems presently prevailing in banking systems and postal systems vis-a-vis Mobile banking based Money order system.

The overall study will reveal the comprehensive mobile money order remittance systems for Indian banking systems and India post developing a commercial and technical framework. Banks and postal services can use to deploy services that enable consumers to send and receive low-denomination, high-frequency money orders using their mobile phones. The framework forms a key element of both bank’s mobile strategy and the India post’s mobile money order program which aims to use the reach and ease of mobile money transfer services to expand the mobile financial services market and stimulate social and economic development. Mobile money transfer services will make it

\[4^{\text{India Post Vision Document 2014.}}\]
simple, quick and affordable for more people to send small amounts of money and there is an opportunity to create and grow a large new market for low-denomination transfers.

3.1 Research Questions:

Presently India is in a zenith stage for technological revolution showing technological and economic growth & success. Mobile banking based transactions in payment and remittances are considered a major tool to increase the business growth and reach to masses. This is a high time to leverage ICT (Information & Communication Technology) platform for increasing outreach and financial sustainability of India Post and Banking Sectors.

This thesis will explore the answers of the following questions.

- What is scope for business growth in terms of transaction volume and revenue for India post and banking sectors by using mobile banking based Money Orders?
- What is the market size for mobile money order?
- What is economic value and developments?
- What are issues and challenges for using mobile banking based money order for migrant workers in industrial areas in India?

3.2 Research Objectives:

- To design business models for mobile banking based money order system for Indian postal services, important issues for its development and commercialization in India.
- To design money remittance and transaction flow model for delivering money order using mobile banking as medium, based on the customers’ perception and views on mobile money order.
- To explore the opportunities which exist to banking sectors and India post for improving efficiency of India post money order, increased market & business growth, economic value addition, social and political motivations for development of mobile banking based money orders so that the Government of India supports building this kind of services.
- To study the challenges and issues faced by different stakeholders involved in mobile money order systems.
4. LITERATURE REVIEW AND MOTIVATION FOR THE STUDY

As per Singh Sumanjeet 2009 the payment history starts in the year 1967 when New York clearing house launched CHIPS (Clearing House Interbank Payment System) which provides US Dollar funds for transfer and transactions settlements online and in real time. In the late 1970s, Chemical Bank launched its Pronto system providing 3,000 computer terminals to customers’ home linked to its central computers by telephone. It offers a range of facilities: balance inquiries, money transfer between Chemical Bank accounts, and bill payments to selected local stores. In the year 1985, EDI (Electronic Data Interchange) extensively used in bank-to-bank payment systems. In 1994, digital cash trails by DigiCash of Holland conducted online. And in the year 1995, Mondex electronic currency trails begin in Sweden, England. A real revolution in the meaning of electronic payment system came with the development of EFT (Electronic Fund Transfer), a technology that allows the transfer of funds from the bank account of the one person or organization to that another.

Since 1990s, E-Banking has developed from virtual insignificance to tens of millions of users worldwide [Abdul, Mohammad and Uddin 2007]. However, E-Banking is the product of different generations of electronic transactions. The primary services provided by e-banks are transferring money among one’s own accounts, paying bills, and checking account balances. Loans, brokering, share trading, service bundling, and a host of other financial services are being added to these primary services [Dewan and Seidmann, 2001]. As per study conducted by [Haikel 2006], digital payment systems are one of the main components of e-commerce, economic and financial infrastructure. As the technology development took place, the transformation of payment and money remittances continued incorporating the barriers and challenges for economy and social sectors. A more recent e-banking development is wireless internet applications of banking, sometimes called m-banking (mobile banking) [Jiaqin, Mike and Katja 2007]. With the combination of two most recent technological advancement, internet and mobile phone, a new service (mobile data service) is thus enabled and the first such wireless internet commercial transaction was performed by the banking industry [Barnes and Corbitt, 2003].
The payment and money transfer landscape in banking industry is also moving fast after the government of most of the Asian countries accelerated the financial reform process. As per [Dag-Inge 2008], the payment and money remittance evolution is challenging, most of them being stuck with legacy solutions and technology. New entrants using the internet and innovative ways of creating services and value for clients are gaining market share (such as PayPal, mcheck, bildesk etc). In retrospect, technology has created new demands and opportunities that were not expected at the outset, one example being the internet revolution, and another the explosion of SMS (short messaging services) traffic on mobile phones. As per prevailing study and research, it has been observed that the payment system is transforming from the initial stage of cheque clearing in physical form to electronic forms, moving to electronic forms of payments using different payment and clearing systems. The wide spread of mobile technology on other hands has greatly transformed the medium and business models of payments system. The study conducted by Mahadevan 2009, for improving payment system efficiency in India has clearly mandated the need of bringing over 1, 55,000 post office branches and over 169,000 branches of cooperative institutions into the electronic payment landscape. As per Sorkin 2002, online payment systems can play a role in reducing transactional and other risks compare to traditional commerce, but relatively little attention has been paid to the effects of emerging online payment systems.

The study conducted by Boating 2004, that growing demand for person to person money remittances is paving the way for new remittance options where the confluence of existing banking infrastructure with new products and technologies such as the internet is providing new options for more cost-effective and convenient fund transfers. Trends of money remittances are gradually transferring to mobile based transactions which can be categorized as m-banking. The study revealed by [Jenkins 2008] shows that importance of money remittances in the form of ‘mobile money’ is to change the landscape of payment industry where “mobile money” is the money which can be accessed and used via mobile phones for transaction and services including domestic and international remittances, bill payment, payroll deposits, purchase of goods and services etc. The development and usage of mobile money is in its initial stage. The research survey by Tobbin 2011, illustrates that the mobile money transfer (MMT) service is an aspect of a
broader concept emerging in the electronic payment and banking industry referred to as “mobile money”. Even though mobile money has not been well defined in literature it can be said to include all the various initiatives (long-distance remittance, micropayments, and informal air-time battering schemes) aimed at bringing financial services to the unbanked using mobile technology.

Mobile phone growth is significant step in the evolution in the payments industry representing another growth opportunity for existing players and new entrants [Edgar and Dunn 2009]. Technology is bringing nontraditional players into the financial services markets as the nature of the services is being transformed to propel the rise of a dynamic financial services industry [Bueno 2008].

4.1 Mobile Money Order: Adoption

As per qualitative study conducted by Mallat 2008, it is found that advantages of mobile payments relate to the increased availability of the payment service enabled by the mobile technology and are different from the traditionally highlighted performance measures such as cost or efficiency [Davis 1989; Rogers, 1995]. From a managerial perspective the findings suggest that more attention should be paid in particular to usability and pricing of the service, and creation of critical mass. One viable strategy for mass creation is to launch the new payment service initially in an area where there is a large base of established users, such as public transportation, and then gradually develop the market by including more services and application areas [Poon and Chau, 2001; Szmigin and Bourne, 1999]. While some researcher, Dahlberg 2007, have concluded the findings for benefit of mobile banking towards adoption is the ease of use and security as key components. The study by Donner 2008, indicates that understanding the role of mobile in developing societies must includes its role in mediating both social and economic transactions sometimes simultaneously offering a way to lower the costs of moving money from place to place and offering a way to bring more users into contact with formal financial systems, m-banking/m-payments systems may prove to be an important innovation for the developing world. The findings yielded by Ainin, Noor, Jaafar and Mohezar 2007 on mobile banking adoption in the urban community illustrates that younger consumers have a greater tendency to adopt innovations, such as
internet banking, this study found that mobile banking is most commonly adopted by consumers aged between 21 to 30 years. Some researchers have conducted the study on barriers to mobile banking adoption such as Morna and Peters 2003, where costs, service innovation, and perception of risks associated with service or products etc. As per study conducted by Margaret, Craig and Standing 2009, on the social, economic and cultural context for technology adoption has been found to be very important in influencing adoption and sustained usage. Social and cultural factors are likely to be more significant in decisions on personal technologies adopted by individuals compared with technologies adopted at the organizational level.

Pousttchi and Martin 2007, reveals on assessment of today’s mobile banking applications from the view of customer requirements, suggests that none of the technologies can provide a mobile banking solution that works completely without problems and satisfies the customer. The recommendation to the banks should be not to focus on one technology only, but to use the advantages of different technologies with identified target groups. The adoption on mobile banking clearly indicates that the customer requirements, cost, security and perceived value of risks are the main key factors which needs to be properly promulgated to enhance the mobile banking based transactions in other allied services such as mobile money orders.

4.2 Mobile Money Order: Business Model

Although the concept of business model is widely used and seen as important, there is no generally accepted definition of what a business model constitutes. There are a lot of authors that give a definition of a business model and propose a brief list of components that should be included to describe it as explained by Petrovic 2001; a business model describes the logic of a "business system" for creating value that lies behind the actual processes. As per Timmers 1998, a business model is architecture for the product, service and information flows, including a description of the various business actors and their roles [Giovanni and Pigneur 2003].

As per Pablo and Heijden 2002, the more mobile the actors are, the higher the geographical barriers, and the less feasible the use of a traditional information system becomes. This procedure can be summarized by the sentence: “complication of the
location”. Aphrodite and Evaggelia 2001, in study of business models and transactions in mobile electronic commerce advocated the inclusion of mobile user, mobile portal, bank and content provider in mobile electronic commerce business model. Patricia, Claudia, Michel and Cyril 2009, defined the adoptable mobile business model with special emphasis on environment awareness by considering specific dimensions, e.g. bandwidth rate, connection state, mobile host resources, etc. A major weakness in current business and market-oriented m-payment research is lack of strictness and comparability. This lack has been observed, not only by researchers, but also by practitioners, which contributes considerably to the confusion in the m-payment market [Key Pousttchi 2008].

One of the studies conducted by Karnouskos, Vilmos, Hoepner, Ramfos and Venetakis 2003, for illustrating the architecture and business models for secure mobile payment system (SEMOPS) has emphasized for developing a global mobile payment system. Its innovative business model is based on two key concepts a) that of cooperation of banks and MNOs (mobile network operators) and b) that of social trust relationships since each actor transacts only with his trusted bank or MNO. However the greater need of business model for mobile based transaction and payment services were attributed to customer centric services and the business models have been evolving in the same line. Further study conducted by Petrovic 2008, emphasizes to align, investigate and evaluate m-Payment services within the framework of customer requirements. However the progress can be extended to adopt both a quantitative approach to study the perceptions, attitudes and needs of customers, and a qualitative approach to study the needs of mobile banking service providers. Fernando, Oliveira and Cruz 2009, has justified the innovation of business model through means of technology where it will have an important role in the innovation process. Firstly, the business model innovation is often dependent upon information technology, where a flexible and agile infrastructure is key to a dynamic business model. As per the findings of research study and literature review it is clear that the business models must innovate according to needs of different stakeholders and must adjust for growth of business. In case of mobile banking and mobile money order the model is still in the evolving phase but it must have the following stakeholders in its actor’s role.
1. Banks and financial institutions  
2. Mobile network operators  
3. Mobile banking service providers  
4. Intermediate payment settlement agencies  
5. India post  
6. Customers and their requirements

**Mobile banking in India:** - The RBI has promulgated the guideline for mobile banking in 2008 and thereafter the certain amendments were carried out in 2009. Some amended components of RBI’s operative guidelines (2009) on mobile banking are given as below.

**Transaction limit:** In amendment of provisions of paragraph 8.1, banks are now permitted to offer this service to their customers subject to a daily cap of Rs 50,000/- per customer for both funds transfer and transactions involving purchase of goods/services. Earlier, such transactions were subject to separate caps of Rs 5000/- and Rs 10000/- respectively.

**Technology and Security Standard:** Transactions up to Rs 1000/- can be facilitated by banks without end-to-end encryption. The risk aspects involved in such transactions may be addressed by the banks through adequate security measures.

**Remittance of funds for disbursement in cash:** In order to facilitate the use of mobile phones for remittance of cash, banks are permitted to provide fund transfer services which facilitate transfer of funds from the accounts of their customers for delivery in cash to the recipients. The disbursal of funds to recipients of such services can be facilitated at ATMs or through any agent(s) appointed by the bank as business correspondents. Such fund transfer service shall be provided by banks subject to the following conditions:-

- The maximum value of such transfers shall be Rs 5000/- per transaction.
- Banks may place suitable cap on the velocity of such transactions, subject to a maximum value of Rs 25,000/- per month, per customer.
- The disbursal of funds at the agent/ATM shall be permitted only after identification of the recipient. In this connection, attention of banks is drawn to the provisions of

- Banks may carry out proper due diligence of the persons before appointing them as authorized agents for such services.
- Banks shall be responsible as principals for all the acts of omission or commission of their agents.

As it can be seen from the mobile banking guidelines it provides, the case for mobile money order where banks have an option to appoint an agent for disbursement of remittance of money to the recipients. In this model India post would act as an agent for distribution of mobile money order.

### 4.3 Mobile Money Order: Recent Development on Mobile Money

Study findings revealed by Merritt 2010, recommends the following actions to policy planners and implementers for expansion of mobile money systems in USA are:

- The urgent need is required to have close dialogue and exchange of ideas within the telecom, regulators, banking and finance sectors and government agency involved in policy makings.
- The required technology infrastructure should be established based on the requirements either in partnership or with existing authorities.
- Cross-border mobile remittances may require improved customer-data sharing on an international basis by central banks, regulators, and law enforcement organizations, as money transfer businesses are established in multiple geographic and legal jurisdictions.
- Converged regulatory authorities should examine consumer protection risks for potential gaps in regulatory oversight. As domestic and international mobile money transfer services grow more prevalent, discussions on risk management and payment system integrity will be imperative. Dialogue with all industry stakeholders, including regulators and policymakers, is essential to creating an environment in which payments risk issues are clearly understood. In this way, risk-based regulation that is proportionate with the need to encourage innovation and efficiency in retail payments can be best achieved.
• Mobile payment service providers in the United States should be required to establish programs to mitigate the risk of money laundering.

In all the studies illustrated by researchers have more or less emphasized the need for extending the mobile banking based transactions to other area of institutions engaged in money remittances and payment systems.

4.4 Mobile money development and motivations in India

After RBI put forth the operative guidelines for mobile banking in India, the growth in mobile money payments, transfers and remittances is increasing as banking infrastructure is migrated to core banking solution. The overall growth and impact is still to be assessed in the Indian contexts as the development is in the initial stage.

In the mean time the trends for mobile banking and mobile payments are transforming to other spheres of institutions such as microfinance institutions, India post and financial inclusion programme initiated by the RBI and Govt of India. As the need of getting full benefits on the investment on technology, it is imperative that the mobile banking based transactions are extended to other payment systems where it has the synergy to grow and assist the social and economic developments.

As per the case study done by Ghate 2006, for remittance of money being used by migrants for sending the money to their dependents. The study findings covered the following entities involved in money remittance.

1. Banks
2. Post Office
3. Private agencies
4. Hand Carry agencies
5. Shramik Sahjog (group formed to remit money)

Author evaluated on the following key parameters for each entity involved in money transfer services to migrants in Surat industrial area in Gujarat.

1. Access
2. Convenience
3. Risk
4. Speed
5. Cost of remitting (Rs.3500)

It has been revealed in the study that the “Shramik Sahjog” an organization formed by NGO-MFI for Orissa migrant workers to remit the money to their households from Surat industrial area. It has been concluded in this study that the migrant workers prefer Shramik Sahjog for remitting the money compare to postal money orders on the following two reasons.

<table>
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<th>India Post Money Order services</th>
<th>Shramik Sahajog Money remittances services</th>
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<tr>
<td>Speed</td>
<td>15–20 days depending on residence of Remittee. Post office has introduced bulk electronic transmission to intermediate centers around the country but this usually takes longer because of time taken between the receiving center and village post Office. Local post office is often out of cash.</td>
<td>*2–3 days (procedure described below)</td>
</tr>
<tr>
<td>Cost of Remitting Rs.3500</td>
<td>Rs175 plus time costs. At 5%, it is the most expensive mode. In practice, remittees have to go to the local post office to inquire and collect, which entails time costs</td>
<td>Rs80–100, at 2% service charge (Rs70) plus Rs10/20/30 for doorstep delivery, depending on whether the amount is less that Rs5,000; between Rs5,000 and Rs10,000; or greater than Rs10,000</td>
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*To become a member of Shramik Sahajog, one should save Rs100 a month in a recurring deposit account. Savings and remittance money received in cash is accepted by the two Shramik Sahajog staff during office hours (morning and evening, 7 days a week since both staff live on the premises) or during afternoon visits to the main residential
neighborhoods, which are visited according to a fixed schedule. The money is deposited on the same or, at the latest, next day, in Shramik Sahajog’s bank, which allows simultaneous (and free) crediting of amounts deposited to Shramik Sahajog’s account in the Orissa branch of the same bank. A savings and money remittance statement is e-mailed to main office in Orissa twice a week-on Monday and Thursday evenings. On the following day, the main office withdraws the cash and sends it to the field office in Tangi, 60 miles away by bus. The field office disburses most remittances within 24 hours and all within 48 hours. Thus, if a member gives his remittance to the Shramik Sahajog staff on a Monday or Thursday, the recipient receives it the following Wednesday/Thursday or Saturday/Sunday (i.e., in 2–3 days).

From the above it is quite clear that when it comes to transferring money through postal money order, the migrants in India are substantially challenged. The speed of delivery and transaction fee charged by India Post is becoming bottlenecks for money orders growth and other players such as Shramik Sahajog use this opportunities to undertake the money remittances services using the Information and Communication technologies with local distribution channels. The remittance needs of the migrant workers may have to be met by a multi-pronged strategy which uses the existing infrastructure optimally and in addition, new products should be introduced which leverage on technology for cost effective and speedy disbursements of remittances.

4.5 Comprehensive analysis of Mobile Money Order for India Post

The study finding for BRIC2 countries by Anson and Toledano 2010 reveals that the integration of the offer of financial services at some stage appears to be decisive if a Post is to play a leading role in access to finance in its country while simultaneously securing its future economic viability. A vast untapped market of almost two billion un-banked customers 1.1 billion of which already being users of non account-based postal financial services seems available for the post if it is ready and determined to seize the opportunities. These ambitions have much better prospects though if they are closely linked to financial inclusion policies at the government, central bank or financial regulatory authority level.

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2 Brazil, Russia, India and China- Developing countries in current decade
The report of the ‘expert committee on harnessing the India post network for financial inclusion’ on 16th June 2010, recommends that India post harnesses the rapid IT and telecom capacity expansion to deliver three basic, integrated products to every Indian citizen: a savings account hosted on a lightweight banking platform, a broad based payments network, and a competitive mechanism to deliver microloans to the poor.

The concluding findings by Richard and Wang 2007, reveals that tremendous change in the payments arena is embodied in many significant innovations introduced by both nonbanks and banks. In most cases, innovations in payment services build on existing, traditional payment types; while in some other cases, they provide novel solutions. The study by Benoit and Seeley 2009 indicates that the trends in the payments market are impacting the traditional role of the postal operator, and there is little doubt that in many countries the long-term outlook is a decline in their core payments business. However, postal operators can develop new growth areas to offset this decline and reinforce their role within society. To do so, they need to be more proactive, and take a strong approach to defending their business. There are real opportunities for postal operators to supplement their existing payments business and step further out and develop new ways to create value, both financially for the business and socially for their countries.

As per World Bank & Universal Postal Union Case study and research report 2001, expanding the role of the postal sector to match the acceleration of the internet age will depend on the ability of posts to manage and run their core business in an effective manner. Reliable and cost effective postal services, including postal financial services, must be the foundation for building the future business opportunities. For postal services in many developing countries, the first step will be to establish this foundation of reliable core services while simultaneously discovering opportunities to interact with emerging digital technologies. Costa Rica, Indonesia, Tanzania, Trinidad and Tobago, and Central and Eastern Europe have shown a positive result through carefully planned and vigorously implemented postal reform by integration and expansion of their business domains to other sectors in the society.

The India post have initiated some of the projects such as ‘PROJECT ARROW’
to lay the foundation for a comprehensive, long term transformation of India post. The project ensures at providing a fast, reliable and efficient postal services to the customers. The ultimate test of success of this scheme is to provide a better experience to the customers, both in terms of the ambience of the post office and quality services to the customers. 1000 post offices have already been covered and **proposed to extend the project to another 4500 post offices**. Out of a total of 25531 departmental post offices, **12604 post offices** including those in the rural areas have been **computerized**. **1304 Post offices** have been **networked through leased lines** so far with the National Data Centre. Further **5170 post offices** have been **networked through broad band**. The strong IT base has made it possible to offer a range of e-enabled services to customers as shown below:

**iMO (Instant Money Order)**

An on line web based domestic money transmission service called iMO was launched in January 2006. This enables the customer to receive money in minutes from any of the post offices providing this service. Under this service, a person can send amount from Rs.1000/- up to Rs.50, 000/- in one transaction instantly. The service is functional in **2175** locations across the country.

**eMoney Order (eMO)**

The electronic money order, which has been launched in October 2008, facilitates transmission of ordinary money orders through electronic media without any extra charge. At present **8003** post offices are offering this service.

**E-Payment**

E-Payment is a ‘Many to One’ service through which bills (telephone, electricity, municipal dues, taxes etc.) are paid by customers in Post offices which are then electronically consolidated and paid to the service provider. The service is presently available in about **8457** Post offices across the country and will soon be extended to all 12604 computerized Post offices. The Cabinet Committee on Economic affairs has approved, a project management unit in the department to conceptualize, plan, implement and monitor the plan schemes for **computerization and networking of all the post offices in the country**.
4.6 Postal money order growth statistics (in value)

The statistics for the money order for India Post is summarized below in tabular forms and figures are appended below in Table II and at the same time we reproduce the cellular subscriber growth in India for the period 2004 to 2010 as given in Table III

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Period</th>
<th>Money Order value in Rs Crores</th>
<th>% increase / decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1990-91</td>
<td>2937.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2000-01</td>
<td>5851.8</td>
<td>99.23 ( increase)</td>
</tr>
<tr>
<td>3</td>
<td>2006-07</td>
<td>7756.7</td>
<td>32.55 ( increase)</td>
</tr>
<tr>
<td>4</td>
<td>2007-08</td>
<td>8363.1</td>
<td>7.81 ( increase)</td>
</tr>
<tr>
<td>5</td>
<td>2008-09</td>
<td>7954.7</td>
<td>-4.88 ( decrease)</td>
</tr>
</tbody>
</table>

Source: - Annual Reports- India Post

Table III - Cellular subscriber growth in India since Dec 2004 to Dec 2010

As can be seen from the above table and graph it is deduced that:-

1. The money order growth is declining and in 2008-09 it reached in negative zone.
2. Mobile subscriber base is increasing exponentially since 2004 and it reached approx 542 million subscriber in December 2010.

4.7 Research Gaps

Presently India is in a zenith stage for technological revolution showing technological and economic growth & success. Mobile Banking based transactions in payment and
remittances are considered a major tool to increase the business growth and reach to masses. This is a high time to leverage ICT (Information & Communication Technology) platform for increasing outreach and financial sustainability of India post and banking sectors.

We find that most researchers have emphasized on different aspects in mobile banking transactions such as adoption, business models, payment procedures, regulatory issues and many more factors. Considering the limitations and boundary for each country to streamline the operations of mobile banking based transactions it would not be appropriate to depend on one factors. The other factors which have come out in the review is that the mobile money order is in its initial stage and much research is needed to analyse the usage, adoption and business models. However the major research motivation emerging out of the review is given as below.

1. There is a immense scope for business growth for India post and banking sectors by using mobile banking based money orders.

2. Various issues and challenges for migrant workers in industrial areas in India can be overcome with mobile money order system.

3. The development of business models for mobile money order would be key factor in mobile payments arena.

4. There would be several opportunities to Indian financial institutions and India post for other types of money remittance which can be used as catalyst for financial inclusion.

5. Mobile banking based money order would provide social and political motivations for rural population in India.

The findings from literature review illustrates that the mobile banking usage is in the initial stage in India. There is a lot of research still to be conducted on various issues and platforms of mobile money and mobile banking system. The motivation for the mobile money order study is in the early stage and its finding would provide an impetus to different stakeholder in mobile money ecosystem.
5. Research Methodologies

5.1 Sampling Unit

Primary Research

Focused Group Survey

Techniques: - Research Survey

Respondents:- Focused groups

Mode: Questionnaire + interview

Focused group will consist of industry experts, practitioners, regulators, government officials and mobile banking and money order customers, divided into two groups.

**Group 1:** This group consists of experts from commercial banks, Indian postal services and mobile banking solution providers to get insight about using mobile banking for delivering money order services. A considerable number of questions specific to architecture, transaction and remittance flow model for use of mobile banking in money remittance operations will be asked.

**Group 2:** This group consists of banking customers using mobile banking services for fund transfers and utility payment systems and postal customers (migrant remittances) using postal money order services for sending the money to their permanent residence for discussing about their expectations, experience with current system and suggestions for mobile banking based money order scheme. The study would be carried out at Pune district comprising both banking and postal customers.

a) Secondary Research Sources

Extensive secondary research will be conducted about possible mobile banking based money remittances models being used at different parts of the world and how it can be best suited to Indian postal systems and financial institutions in India. In addition, money remittance and transaction flow models for using mobile banking in commercial and retail banking will be studied to streamline the issues and challenges for business growth so that this business model is efficient in delivering the money remittance services to India posts.

5.2 Sample Size & Sampling procedure

The sample size would be in the range of 300 to 400 respondents from mobile banking customers and money orders users in the Indian post. The sampling would be taken in the
Pune district post officers spread in the industrial area namely Pimpri, Chinchwad, and Hadapsar area. This area is taken because of manufacturing and construction industry where the money remittance through post offices is more. The banking customers using mobile banking would be selected from the banks situated in Pune district where the sample population would be divided between urban and rural area.

5.3 Data Analysis;
Since it is not possible to make any rigid assumptions about the distribution of the population from which samples are being drawn, Hence non-parametric tests would be carried out the for the data collected during questionnaire. The following tests would be carried out.

1. Descriptive statistical analysis test
2. Chi-square test of independence
3. Chi-square test of goodness of fit

5.4 Proposed Mobile money order model development and testing

Present mobile banking model

![Diagram of mobile money order model](image)

**Source:** National Payment Corporation of India (NPCI) & Mobile Payment Forum of India (MPFI) 2010
Proposed mobile money order model for India Post

Testing and development of the proposed model:-
The proposed model would be developed on prototype framework with rapid development tools for simulation and testing based on the expert opinions and customers field survey.

5.5 Expected outcome and benefits from the proposed mobile money order model

- **Business growth:** The ability to move money from the sender to the receiver is the stumbling block and ability to move it from A to B is called “velocity of money” and has been a fundamental cornerstone of economic activity. But the issue is exactly how money transfer is made to happen in an emerging market where the infrastructure is poorly developed and where very few people have or even want bank accounts. Mobile money order would be instrumental in capturing more number of customers in
due to easy access and prompt services. The number of mobile phone customers if added would provide the business growth avenue to India post and banking sectors too.

- **Convenience:** Many people in emerging economies have to travel far from home to find work and need to be able to send money back to their families so they can pay bills or remit the money. The sender has to approach nearest post office with cash to transfer the money in present money order system where as mobile money order service is accessible on 24X7 and money can be sent at anytime and anywhere.

- **Reduced Transaction costs:** As on date the mobile banking provides the lowest transaction costs amongst all the delivery channels as this removes the physical POP (point of presence) for banking and India Post and also ensures a timely and secure method of transaction.

- **Social and economic developments:** The World Bank estimates that reducing remittance commission charges by 2-5% could increase the flow of formal remittances by 50-70%, boosting local economies. Reducing the cost of each individual remittance would enable the delivery of lower value remittances than today’s average transfer value and would result in higher remittance and hence higher economic activity leading to faster growth. CGAP in its survey has found that the incomes of rural recipients increased by 5-30% since when they started using M-PESA for mobile money transfer system in Kenya. Thus Mobile money order can be catalyst for social and economic development to India.

- **Transparency in money transactions:** In the absence of formal banking system, most of the transactions are cash based giving no audit trail to the regulators. Mobile money order can bring the transparency in the money transactions by reducing the cash economy and digitizing the transactions. There would be more visibility on the money flows as the remittances move from informal channels to formal channels.

- **Marketing of products:** Mobile money order through cell phone would be advantageous to the banks as well as India post since it serves as a guide to help and improve their customer care services. Banks and India post can be in touch with their clients with mobile banking and also promote and sell their products and services like
credit cards, loans, postal insurance and other financial products etc. to a specific group of customers.

- **Reduces risk of Fraud:** a Money remittance through mobile reduces the risk of fraud. The updation of all the transactions can be communicated through SMS whenever there is an activity in account. The remittances status would be tracked and notice is given as soon as the amount is delivered to beneficiary.

- **Can be catalyst for leveraging Financial Inclusion and Government social remittance scheme:** The India Post integration to banking sectors can boost the formal savings among the unbanked people and provide the avenues of formal saving. The different money remittance schemes launched by Government such as old age pension, NREGA etc can use the mobile money order for remittance to beneficiaries.

### 6. SCOPE OF THE STUDY

Here is a detailed schedule for key activities to be completed during this research thesis.

1. Thesis detailed Project Plan
2. Review and analysis of different mobile banking business models and financial products offered in this domain. Outreach, gaps and challenges.
3. Study of models of mobile banking based money order in the different part of worlds.
4. Focused group field survey.
5. Issues and Motivations for Mobile Banking based Money Order as Business development tool for India Post and Banking Sector.
6. Issues and Challenges for Mobile Banking based money order in India.
7. Development and testing of mobile money order model based on the expert opinions Customer surveys.
8. Initial draft of report.
10. Presentation.
7. Estimate of Duration of the Research

<table>
<thead>
<tr>
<th>Proposal Stage</th>
<th>Literature review stage</th>
<th>Field Study/Survey</th>
<th>Model development, testing &amp; Documentation Stage</th>
<th>Presentation Stage</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months</td>
<td>3 months</td>
<td>4 months</td>
<td>9 months</td>
<td>3 months</td>
<td>22 months</td>
</tr>
</tbody>
</table>

8. Risk Analysis

This thesis is related to find the real world problem so definitely certain risks are involved due to uncertainty. Here is a detailed analysis of risk events, probability that is denoted by ‘P’, effects that is denoted by ‘E’ and their mutual risk index is the multiplication of probability and Effect of any risk.

8.1. Expected Risk

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Risk Event</th>
<th>Probability (P)</th>
<th>Event (E)</th>
<th>Risk Index (P x E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precise and accurate information about mobile banking based business models and products are not available.</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Customers reluctance to provide information related to use mobile banking and money order Products in banking and India post.</td>
<td>3</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Delay in response from Indian banking organization, India Post and other companies are</td>
<td>3</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Sl No</td>
<td>Risk Event</td>
<td>Probability (P)</td>
<td>Event (E)</td>
<td>Risk Index (P x E)</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>4</td>
<td>Communication problem with stakeholders and delay in getting appointment time for focused group Interview and surveys.</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>Lack of cooperation from mobile banking Operators in India.</td>
<td>4</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Communication problems in survey and unwillingness of customers to provide accurate Information.</td>
<td>3</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>Due to cost and time for extensive traveling, this may not be a homogenous survey for field works</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>If due to any uncertain reason one milestone takes longer time than Expected.</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Unanticipated work load</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>
### 8.2. Risk Mitigation strategies and contingency plans

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Risk Event</th>
<th>Mitigations Strategy</th>
<th>Contingency Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precise and accurate information about mobile banking based business models and products are not available.</td>
<td>Getting help from Indian Banking sectors and India Post.</td>
<td>Redefining Project Plan &amp; Scope</td>
</tr>
<tr>
<td>2</td>
<td>Customers reluctance to provide information related to use mobile banking and money order Products in banking and India post.</td>
<td>Using organizational references to approach customers.</td>
<td>search for alternatives not those who are originally included in sample.</td>
</tr>
<tr>
<td>3</td>
<td>Delay in response from Indian banking organization, India Post and other companies are not willing to provide outreach statistics.</td>
<td>Fixing the problem by negotiation and using facilitators to get information.</td>
<td>Redefining project plan to change the area of working.</td>
</tr>
<tr>
<td>4</td>
<td>Communication problem with stakeholders and delay in getting appointment time for focused group Interview and surveys.</td>
<td>Setup meetings well before time.</td>
<td>Using references to get time and plan out telephonic and e-mail Conversation.</td>
</tr>
<tr>
<td>5</td>
<td>Lack of cooperation from mobile banking Operators in India.</td>
<td>Attempt to get publicly available reports for Indian statistics</td>
<td>Exploring alternatives if possible.</td>
</tr>
<tr>
<td>6</td>
<td>Communication problems in survey</td>
<td>Creating awareness among poor communities by personal</td>
<td>Changes in sampling</td>
</tr>
<tr>
<td>Sl No</td>
<td>Risk Event</td>
<td>Mitigations Strategy</td>
<td>Contingency Plan</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>and unwillingness of customers to provide accurate Information.</td>
<td>counseling.</td>
<td>technique and using accidental and Judgmental sampling techniques.</td>
</tr>
<tr>
<td>7</td>
<td>Due to cost and time for extensive traveling, this may not be a homogenous survey for field works</td>
<td>Relying on existing information collected from member organizations of Indian Banking and India Post</td>
<td>For Focused group discussion telephonic interview technique and Questionnaire will be used. For field survey area in Pune industrial sectors, Banking sectors, India Post, Customers in Pune would be approached.</td>
</tr>
<tr>
<td>8</td>
<td>If due to any uncertain reason one milestone takes longer time than Expected.</td>
<td>Putting extra efforts to keep delay off.</td>
<td>Make changes and specify project plan accordingly.</td>
</tr>
<tr>
<td>9</td>
<td>Unanticipated work load</td>
<td>Putting extra efforts to keep delay off.</td>
<td>Make changes and specify project plan accordingly.</td>
</tr>
</tbody>
</table>
9. Limitations.
1. The study would be based on random sampling method instead of census method.
2. It may be difficult to obtain necessary information from the customers, mobile and telecom service providers, industry experts, banking professionals, India post officials and other stakeholders if they become reluctant to disclose all the information available with them.
3. Most of the findings on customer’s perception on the usage of mobile banking and mobile money order would be arrived at Pune; the findings may not give overall view of customer perceptions and preferences.
4. The proposed model for mobile money order is derived from the existing mobile banking models being presently used in India by NPCI (National Payment Corporation of India) and there may be some changes based on the study of processes involved in money order systems at India Post or regulatory changes happening during the course of study.
5. Due to the explosive growth of the mobile banking application and usage the generalizations of the facts deduced within the duration of the research could not fully be realized or relied on. However, the analysis made will be logical, structured and scientific as possible as giving attention to all these limitations.

10. Conclusion
The primary focus of thesis project is to study and analyse the mobile banking based money order as business development tools for remodeling the business models for India Post and Indian Banking Sectors in India. The study will increase outreach of mobile banking based money order not only for migrant remittances but also for other users in money remittance services. This will be based on mobile banking based business model prevailing in Indian Banking Sectors. This is not an easy task without realizing challenges faced by field survey, focused group discussions and regulatory framework view about using mobile banking based money orders for India post and Indian banking sectors.
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