

Electronic Banking in Sri Lanka: Prospects and Constraints

Introduction

In the background of the unprecedented innovations of Information and Communication Technology (ICT) coupled with the liberalisation of the financial sector and the global financial integration, electronic applications are emerging in many spheres in the financial markets. These include e-banking, e-money, e-finance, e-brokering, e-insurance, e-remittances, e-fund transfers, and e-exchanges. Electronic banking (e-banking) is the latest delivery mode of banking services. Broadly, e-banking can be defined as an electronic connection between a bank and a customer that facilitates to prepare, manage and control a financial transaction. Electronic banking is offered on different platforms, including internet banking (or online banking), telephone banking, mobile phone banking (or m-banking), mobile money (or m-money), TV-based banking and PC banking (or offline banking). The degree of adoption of each of these channels varies from country to country. For example, m-banking is very popular in Kenya as against a country such as Sri Lanka.

The objective of this paper is to analyse the prospects and constraints for the development of e-banking in Sri Lanka. The analysis is based on the data collected by the author from a field study under a collaborative research project with the University of California, USA during 2009/2010. This study was motivated by the lack of data on e-banking in Sri Lanka despite the widespread adoption of e-banking. These data are essential for policy making purposes as well as for promotion of the industry. The rest of the paper is organised as follows: Section 2 provides an overview of the expansion of information and communication technology. Section 3 examines the use of e-banking in the country. Section 4 explores the potential for m-money systems. Concluding remarks are given in the final section.

The Expansion of Information and Communication Technology

In common with many other developing countries, Sri Lanka has experienced a phenomenal growth in telecommunication services during the last decade. In particular, the expansion of the use

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of mobile phones has been remarkable. As shown in Table 1, the number of mobile phones in use rose from 430,000 in 2001 to almost 14 million by 2009. This implies that every 68 persons out of 100 persons have a mobile phone. Thus, there is tremendous potential to popularise mobile banking in Sri Lanka.

Our survey data on the availability of information and communication equipment in the households also reflect the country's enormous capacity to adopt mobile banking even among the poor. Basic amenities, such as, electricity, radio and televisions are commonly available among a majority of households across different income groups, as shown in Table 2. Electricity supply is available to around 93 percent of the total number of households. Around 61 percent of the surveyed households have fixed phones and 71 percent have mobile phones. This means that every 3 out of 5 households

Table 1: Telecommunication Services in Sri Lanka from 2000 to 2009

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| Fixed Access Services | | | | | | | | | | |
| Subscriber Base ('000) | 767 | 829 | 883 | 934 | 991 | 1,244 | 1,884 | 2,742 | 3,446 | 3,431 |
| Fixed Access Services ('000) | 653 | 708 | 769 | 818 | 860 | 919 | 910 | 932 | 934 | 871 |
| Wireless Access Services ('000) | 114 | 121 | 114 | 116 | 131 | 325 | 974 | 1,810 | 2,513 | 2,560 |
| Telephones per 1,000 persons | 4.2 | 4.4 | 4.7 | 4.9 | 5.1 | 6.3 | 9.5 | 13.7 | 17.1 | 16.8 |
| Other Services | | | | | | | | | | |
| Mobile Phones ('000) | 430 | 668 | 932 | 1,393 | 2,211 | 3,362 | 5,412 | 7,983 | 11,083 | 13,950 |
| Mobile Phones per 100 persons | 4 | 5 | 7 | 12 | 15 | 17 | 27 | 40 | 55 | 68 |
| Public pay Phone Booths | 8,222 | 7,281 | 6,681 | 6,440 | 6,095 | 6,285 | 7,561 | 8,526 | 7,417 | 7,936 |
| E-mail and Internet subscribers | 40,497 | 61,532 | 70,082 | 85,500 | 93,300 | 115,000 | 130,000 | 202,348 | 234,000 | 240,000 |

Sources : Sri Lanka Telecom Ltd.
Central Bank of Sri Lanka

have a mobile phone. It is significant to note that around 50 percent of poor households including the ultra-poor have mobile phones. The expansion of telecommunication networks by competing firms has led to a phenomenal growth in mobile phone usage. Household ownership of other equipment, such as, computers, email and internet facilities also showed a significant growth in recent years. Overall, around 13 percent of the households have desktop computers, and 6 percent of them have laptops. However, the ultra-poor households do not possess any computers or related equipment. Access to email and internet facilities is also largely confined to the non-poor and moderately-poor groups.

The Use of Electronic Banking

In tandem with the growth of Information and Communication Technology (ICT) and the related e-banking facilities, the use of electronic banking (e-banking) facilities, such as, credit and debit cards, internet banking and phone banking, has emerged in Sri Lanka in recent years. As shown in Table 3, internet banking, which accounts for about 5 percent of total retail payments in 2009, has surfaced as the most prominent electronic payment system. The use of phone banking is only 0.1 percent. The shares of credit cards and debit cards are 1.3 percent and 0.2 percent, respectively. Thus, the use

Table 2: Ownership of information and communication equipment (% of households) in Sri Lanka (n=859)

| Item | Non-poor | Moderate poor | Ultra poor | All |
|------------------|----------|---------------|------------|------|
| Electricity | 95.9 | 86.3 | 83.3 | 92.9 |
| Radio | 89.0 | 76.0 | 77.1 | 85.2 |
| Television | 94.1 | 82.4 | 72.9 | 90.1 |
| Land phone | 66.2 | 48.0 | 56.3 | 61.4 |
| Mobile phone | 78.6 | 53.9 | 47.9 | 71.0 |
| Fax machine | 7.7 | 5.4 | 0.0 | 6.8 |
| Desktop computer | 16.3 | 7.8 | 0.0 | 13.4 |
| Laptop computer | 6.8 | 3.9 | 0.0 | 5.7 |
| Computer printer | 8.4 | 5.9 | 0.0 | 7.3 |
| CD drive | 19.4 | 11.8 | 0.0 | 16.5 |
| Scanner | 7.1 | 4.4 | 0.0 | 6.1 |
| Email | 7.1 | 4.9 | 2.1 | 6.3 |
| Internet | 8.6 | 4.4 | 0.0 | 7.1 |

Source: *Household Survey on E-Money* conducted by the author, 2008/2009

of e-banking is still at an early stage in Sri Lanka. Bank cheques continue to remain as the main non-cash payment mode accounting for nearly 90 percent of the total value of non-cash payments in the country.

Commercial banks, specialised banks and several non-bank financial institutions have introduced a variety of e-facilities in recent times. Online internet (virtual) banking includes facilities such as balance inquiry, check status, stop payments, bill payments, inward remittances and fund transfers. Internet banking customers can also access from anywhere in the world on mobile phones. The use of mobile telephones is rapidly growing in Sri Lanka, and most of the internet banking services can now be accessed through mobile phones.

While the country has been enjoying an exceptionally high (traditionally-measured) literacy rate among developing countries, its computer literacy rate also has risen to about 40 percent by now. As shown in Table 4, nearly 70 percent of the households have some knowledge about ATM (Automatic Teller Machines), and 37 percent of them have knowledge about internet banking. Knowledge about phone banking is limited to about 17 percent of the households and SMS banking to about 12 percent of them. As regards, e-remittances, the moderate and ultra-poor have more knowledge relatively to the non-poor. This can be attributed to the fact that a larger proportion of migrant workers are mainly from the poorer segments of the population, and they have acquired knowledge about

Table 3: Modes of non-cash payments in Sri Lanka from 2001 to 2009

| Composition of Values of Non-Cash Payment Systems (%) | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Payment system | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| Main Cheque Clearing System | 62.5 | 4.4 | 95.0 | 94.3 | 92.1 | 90.3 | 89.9 | 87.7 |
| Rupee Draft Clearing System | ... | ... | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| Sri Lanka Interbank Payment System | 34.2 | 83.7 | 1.9 | 2.4 | 2.9 | 3.7 | 4.5 | 5.6 |
| Credit Cards | 0.5 | 2.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4 | 1.3 |
| Debit Cards | 0.6 | 2.8 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Internet Banking | 1.5 | 6.9 | 1.3 | 1.4 | 2.4 | 4.2 | 3.8 | 4.9 |
| Phone Banking | 0.8 | 0.2 | 0.2 | 0.1 | 0.8 | 0.0 | 0.1 | 0.1 |
| Postal Instruments | ... | ... | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Central Bank of Sri Lanka

e-remittances. But, the usage of such facilities is limited to non-poor households. The widespread e-banking literacy across different income groups reflects the potential to boost the mobile banking in the country.

According to our survey, only 0.8 percent of the households use their mobile phones for mobile banking as shown in Table 5. The majority use mobile phones for communication purposes including SMS messaging, which is very popular among the youth. A larger proportion of mobile phone users are familiar with some form of e-transactions. For instance, it is reported that US\$ 10 million worth of reloading was carried out by small communication shops and boutiques largely located in rural areas for a particular mobile network last year. In this process, the clients hand over the money to such small shopkeepers as a prepayment to increase their balance for mobile phone usage. In most instances, these transactions take place without any documents, and this implies that the mobile phone clients have confidence in such small shopkeepers and mobile phone companies.

As depicted in Table 6, around 85 percent of the households have an account in commercial banks and 43 percent have accounts in credit co-operatives and Micro Finance Institutions (MFIs). A major reason for the high proportion of the

banks in Sri Lanka is the rapid expansion of the banking network. In particular, on the initiative of the government, the two State-owned banks – the Bank of Ceylon and the People’s Bank – have established a large number of branches in rural areas during the last four decades. Private banks also have expanded their outreach through their expanding branch networks. As mentioned earlier, the survey reveals that 71 percent of the households have mobile phones. This ratio is lower than the ratio of households who have a bank account which stands at 85 percent. This somewhat contrasts with the popular belief that the proportion of the banks is usually lower than the proportion of mobile phone owners in developing countries. There is an inverse relationship between the ratio of households who have bank accounts and the income levels. As expected, a larger proportion of non-poor households have bank accounts. It should also be noted here that the survey reveals that the amounts of deposits held by poor households are extremely low. Therefore, the mere ownership of a bank account does not necessarily reflect the savings capacity of a household.

A larger proportion of ultra-poor households have an account in specialised banks. This finding could be expected as most of these banks are savings and rural development banks which cater to

lower income groups. The semi-financial sector which consists of credit co-operatives and Micro Finance Institutions (MFIs) plays a crucial role in providing deposit facilities, particularly to the poorer segments of the population. Overall, 43 percent of the total number of households has deposits in such institutions. There is a clear positive relationship between proportions of account holdings in the semi-formal sector and income groups. Over 50 percent of poor households have such deposits as against 37 percent of non-poor households.

Our focus group discussions indicate that people are increasingly using e-cards. However, non-availability of ATM facilities in most villages in the rural sector is pointed out as a major constraint. This is reflected in the lower proportion of ATM card users as against the high proportion of bank account holders, as shown in Table 7.

Although the extent of the banked population is satisfactory, our qualitative survey reveals that a greater proportion of them are found to be under-banked for various reasons. A major factor is their low incomes which result in low savings. A large number of households indicated that they do not have sufficient savings in banks, and therefore, they do not require m-banking. We have observed through the focus group

Table 4: Awareness and Use of Electronic Banking in Sri Lanka (percentages of household members who are above 16 years of age, n=2,133)

| Item | Have knowledge | | | | Using | | | |
|------------------|----------------|-------|------------|-------|----------|-------|------------|-------|
| | Moderate | | | | Moderate | | | |
| | Non-poor | Poor | Ultra poor | All | Non-poor | Poor | Ultra poor | All |
| Internet banking | 39.81 | 29.27 | 33.67 | 36.90 | 3.60 | 2.44 | - | 3.14 |
| ATM machines | 73.90 | 60.60 | 47.96 | 69.39 | 28.23 | 11.44 | 7.14 | 23.07 |
| Phone banking | 18.84 | 10.88 | 15.31 | 16.69 | 1.40 | - | - | 0.98 |
| SMS banking | 14.45 | 5.63 | 4.08 | 11.77 | 0.27 | - | - | 0.19 |
| Cyber banking | 4.53 | 1.13 | - | 3.47 | 0.27 | - | - | 0.19 |
| e-remittances | 20.24 | 24.77 | 35.71 | 22.08 | 1.60 | - | - | 1.13 |
| Mobile cash | 15.71 | 9.01 | 2.04 | 13.41 | 0.33 | - | - | 0.23 |

Source: Household Survey on E-Money conducted by the author, 2008/2009

discussions a diminishing trend of savings culture among the poor. Inadequacy of household incomes to cope with rising expenses was pointed out as a main reason for such decline by many households. Also, the negative real interest rates emanating from high inflation have inclined the households to purchase property and durable goods rather than to save money. Several households point out that they merely keep a minimum balance in their bank accounts for the purpose of obtaining a loan from the bank at a future date. Hence, motivation to build up savings could not be observed among many households during our discussions with them. Some low-income earners have borrowed from all possible sources, and the bulk of their monthly earnings is used to repay the debts. As shown in Table 8, another major reason for limited accessibility to mobile banking is that they did not have sufficient knowledge about how it works. Some households express their concerns about the security of accessing financial information using a mobile phone.

We have used the collected data to ascertain the relationship between e-banking and determining factors such as age, education, occupation

and income, as shown in Table 9. Both the knowledge about e-banking and usage show a negative correlation with age. This finding is also supported by our focus group discussion which indicated that the younger people are more accustomed to e-banking. However, the correlation coefficients are not significant except for knowledge about internet banking. E-banking is positively linked to education, and most coefficients are significant at 0.01 level. There does not seem to be a decisive link between the level of occupation and knowledge/usage with regard to E-banking. The relation between income and e-banking is positive, as expected. The coefficients are significant at 0.01 level in most instances reflecting a strong nexus. As mentioned earlier, our focus group discussions also indicated the profound influence of household income on the use of banking facilities.

Table 5: Purposes of Using Mobile Phones in Sri Lanka

| Purpose | %* |
|--------------------|------|
| Communicate | 52.7 |
| Send SMS | 32.1 |
| Business | 1.5 |
| Obtain information | 17.6 |
| Employment | 6.1 |
| Banking | 0.8 |
| Purchase goods | 2.3 |

Source: *Household Survey on E-Money* conducted by the author

* Percentage of adult households who use mobile phones.

The Potential of Mobile Money Systems

This study has revealed that there are two specific segments which have vast potential to apply e-banking for the benefit of the poor. They are the microfinance industry and the inward remittance market. The country has a widespread network of microfinance institutions, as mentioned earlier. These institutions which are built up on the concept of 'group-lending' are much more flexible in providing financial facilities to low-income families. According to our survey, 44 percent of the surveyed households are members of microfinance organisations. This

reflects the extensive outreach of microfinance industry in the country. However, we have observed that none of these institutions including the major ones has adopted e-banking facilities. A main reason for this is the non-application of ICT in their operations. Taking into account the large amounts of transactions they handle daily, on the one hand, and the widespread availability of mobile phones in households, on the other, there is considerable potential to adopt

Table 6: Percentage of households who have an account in a financial institution in Sri Lanka (n=834)

| Sector | Non-poor | Moderate Poor | Ultra-poor | All |
|---------------------------------|----------|---------------|------------|------|
| Formal Sector | | | | |
| Commercial banks | 89.2 | 74.9 | 68.8 | 84.7 |
| Specialized banks | 17.1 | 13.3 | 25.0 | 16.7 |
| Non-bank financial institutions | 4.1 | 1.5 | 0.0 | 3.3 |
| Semi-Formal Sector | | | | |
| Credit Cooperatives & MFIs | 37.3 | 57.1 | 54.2 | 42.9 |

Source: *Household Survey on E-Money* conducted by the author, 2008/2009

Table 7: Use of commercial bank facilities (% of households) in Sri Lanka (n=834)

| Facility | Non-poor | Moderate Poor | Ultra-poor | All |
|-------------------------|----------|---------------|------------|-------|
| Commercial bank account | 89.20 | 74.90 | 68.80 | 84.70 |
| ATM card | 41.79 | 22.05 | 16.67 | 35.73 |
| Credit card | 8.80 | 2.56 | - | 6.83 |
| Mobile phone banking | 2.88 | 1.03 | - | 2.28 |

Source: *Household Survey on E-Money* conducted by the author, 2008/2009

mobile banking in the microfinance sector. This will not only help to improve efficiency, but also to reduce transaction costs.

The other area that has potential to apply mobile banking is the inward remittance market. An estimated stock of over 1.6 million Sri Lankan migrant workers, mainly in the Middle East countries, annually remit foreign exchange over US\$ 2.5 billion, easing the balance of payments disequilibrium. They account for about 8 percent of the country's GDP (Gross Domestic Product). Migrant workers send their earnings to their relatives and friends living in Sri Lanka by using different channels, including (a) formal banking channels, (b) by hand through persons travelling to the country, and (c) informal channels. Although the bulk of remittances are channelled through formal means, as much as 45 percent of total remittances are estimated to be remitted through informal channels. The oligopolistic remittance setting in Sri Lanka as well as in host countries have led to the growth of informal channels. Meanwhile, banks have been increasingly popularising e-remittance facilities such as internet banking, e-Cash, X-press Money, MoneyGram, Ez-Money and Telemoney. Hence, a rapid expansion of e-remittance could be expected in the near future.

This study shows that currently the use of e-banking facilities is relatively low in Sri Lanka. Nevertheless, the country's widespread banking network and ICT infrastructure provide considerable potential to foster e-banking at a faster pace, benefiting the bottom of the

pyramid. This will also be facilitated by the recently-improved computer literacy as well as the outstanding high common

literacy level. Banks need to expand mobile banking and similar instruments to isolated rural and urban areas where customers have to spend a lot of time and money to visit a bank branch located in a far away place. This is feasible as mobile phones have penetrated in such areas as well. The banks will have to play an unconventional and proactive role in this regard to cater to the bottom of the pyramid through such devices. It is evident from our study that profit making and economies of scale are the overriding factors in the decision-making process of banks and other financial institutions, rather than reaching out the low-end customers through devices such as mobile banking. The household survey indicates that the majority of the poor, who are usually characterised

Table 8: Major reasons for not using mobile banking in Sri Lanka

| Reason | %* |
|------------------|-------|
| High costs | 8.0 |
| Less security | 2.3 |
| Difficult to use | 9.4 |
| No understanding | 39.3 |
| Never heard | 15.5 |
| Not necessary | 25.6 |
| All | 100.0 |

Source: Household Survey on E-Money conducted by the author

* As a percentage of households who do not use mobile banking

by low financial literacy, do not have any understanding about mobile or e-banking facilities. This kind of information asymmetry can be overcome through counselling, advertising and publicity programs. Early action needs to be taken by the stakeholders to harness the potential to adopt m-banking in the microfinance industry and remittance market.

Conclusion

Sri Lanka has experienced a phenomenal growth in ICT in the last two decades. The rapid penetration of mobile phones is particularly significant. These developments reflect the country's strong potential to take advantage of electronic banking and mobile money. These innovative financial

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Table 9: Pearson Correlation Coefficients between e-banking Variables and some of its Determining Factors in Sri Lanka (n=1,672)

| Variables | Age | Education | Occupation | Income |
|-----------------------------|---------|-----------|------------|---------|
| Know about internet banking | -0.050* | 0.196** | -0.007 | 0.136** |
| Using internet banking | -0.005 | 0.036 | 0.045 | 0.109** |
| Know about ATM machines | -0.043 | 0.256** | -0.340 | 0.090** |
| Using ATM machines | -0.047 | 0.251** | 0.004 | 0.233** |
| Know about phone banking | -0.040 | 0.212** | -0.067** | 0.130** |
| Using phone banking | -0.015 | 0.055** | 0.010 | 0.073** |
| Know about SMS banking | -0.039 | 0.187** | -0.044 | 0.103** |
| Using SMS banking | -0.012 | 0.027 | -0.014 | 0.009 |
| Know about cyber banking | -0.015 | 0.127** | -0.035 | 0.068** |
| Using cyber banking | -0.004 | 0.017 | -0.026 | 0.010 |
| Know about e-remittances | -0.035 | 0.079** | -0.031 | 0.210 |
| Using e-remittances | -0.012 | 0.037 | -0.002 | 0.076** |
| Know about mobile cash | -0.045 | 0.197** | -0.071** | 0.039 |
| Using mobile cash | -0.014 | 0.020 | -0.027 | 0.008 |

** indicates Correlation is significant at the 0.01 level (2-tailed).

* indicates Correlation is significant at the 0.05 level (2-tailed).

Source: Household Survey on E-Money conducted by the author

products could be used to reach out the financially-excluded low-income households in the remote villages. Our survey reveals that a fair proportion of the households, even in the ultra-poor group, have some knowledge about e-banking and e-money. But, the application of such modes is rather low, even among the richest households. ATMs are the most popular type of e-banking.

It is widely recognised that mobile applications are likely to improve the socio-economic conditions of the people at the base of the pyramid in developing countries. As in the case of many other developing countries, availability of cheaper mobile phones and low-cost prepaid phone cards have led to an exponential growth of mobile telephony in Sri Lanka. While the people at the bottom of the pyramid have been increasingly using mobile phones, a vast majority of them remain unbanked or under-banked in Sri Lanka. If they use m-banking, they would be able to overcome the opportunity costs

relating to geographic access to bank branches.

The objective of this study was to explore the potential of using mobile money systems in Sri Lanka to extend financial facilities to the poor so as to smoothen their economic activities. The findings of the study reveal that although mobile phones have rapidly penetrated in Sri Lanka during the last decade covering rural areas where there is acute poverty and lack of access to formal banking institutions, they are hardly used for financial transfers and payments. As a result, the country has been losing opportunities to use mobile phones to extend financial facilities to the poor who do not have access to formal finance. The study also reveals that there is considerable potential to popularise mobile money systems in the country in the backdrop of the extensive use of mobile phones. The lack of awareness about mobile banking acts as a major impediment to the expansion

of mobile money systems. The application of mobile banking is largely limited to commercial bank customers in Sri Lanka, making it an additive model. Our focus group discussions reveal that most of the bank customers are unaware of such facilities. A major reason for this could be that mobile banking is not widely publicised. In Sri Lanka, the mobile phone operators are yet to launch mobile transaction systems. The mobile transactions platform needs to be harnessed in the country without further delay to overcome the problem of financial exclusion in the country.

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