

Mobile Payment System and its Development in Bangladesh

Mobarak Hossain¹, Mohammad Jamal Hossain², M. Samsuzzaman², M. Tarikul Islam²

¹Department of Computer Science and Engineering, Asian university of Bangladesh, ²Faculty of Computer Science and Engineering, Patuakhali Science and Technology University, Dumki, Patuakhali

ABSTRACT

Mobile payment services are now most emerging cohesive information services which has huge market demand. With the increasing number of mobile phone user, it is a suitable scheme for subscribers for performing transaction. Mobile payment is widely accepted and used in China, Japan, Malaysia and other different countries. This paper analyzes the present situation of mobile payment in Bangladesh, define the superiority and mechanism of self-regulating third-party based mobile payment systems and probable solution for overcoming existing problems and development of effective mobile payment.

Keywords: Mobile Payment, Independent Third-party, Mobile Banking, m-Commerce, Mobile Financial Services

1. INTRODUCTION

The financial inclusion is the delivery of reasonable service of m-banking to a specific group of people related to the achievement of vital social and economic goals of a nation. For leading GDP growth, financial services draw credit into mobile banking system. It proliferates the development of national capital, encouraging entrepreneurship. For building new jobs it helps to develop the seriousness of a nations private sector. These growths decrease the nation's whole income fairness, quicken poverty lessening and increasing income rate among lowest paid population. Mobile payment is the payment systems and actions of using cell phones, notebook computers, PDAs, and additional mobile communication terminals and device for completing the payment procedure of shopping and other, business transitions bank transfer through SMS, WAP, IVA etc. Mobile payment service is distant mobile payment value added service conducted by mobile operators as well as financial organizations for the outcome of mobile communication technology invention and comprehensive service of financial organizations also it turned the mobile phones into credit payment instruments. The time and space limits of old-fashioned commerce is overcome by mobile payment and more nearby to the dealers. In section 2, we describe the existing mobile payment system in Bangladesh. In section 3, we describe the limitation of mobile payment system in Bangladesh. In section 4, we describe the barrier to the development of e-commerce payment system. In section 5, we describe what should we to do to develop mobile payment system in Bangladesh, and in section 6, we give conclusion.

The total number of Mobile Phone Active Subscribers has reached 129.584 million at the end of February 2017 [1].

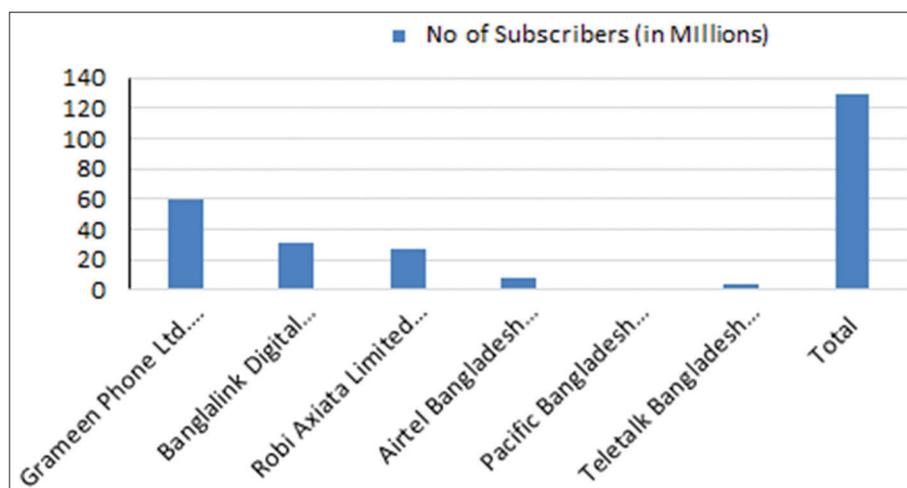


Figure 1: The Mobile Phone subscribers in Bangladesh

Among the mobile subscribers nearly all connections are prepaid. 3G is launched in late of 2012 has brought an opportunity of fast development of internet and mobile app access through the country. About 6% of mobile subscribers were using 3G since 2014 as the number grew at a very high rate of 232% across the past years [2]. User of mobile internet has increased about 40% after serving 2G & 3G networks mobile data services.

In Bangladesh only few mobile payment services are provided by mobile phone operator and only 3% of the total subscribers use mobile payment service. The market of mobile payment industry is at the state of flourishing development with the increasing of global customers using 3G, 4G smart phones which is equipped with mobile internet along with messaging tools. The mobile payment revolution brings a significant change of propels payment styles as well as make a numerous amount of new business probabilities. The mobile payment systems can be a viable solution to existing cash or credit/debit cards in next few years.

2. EXISTING MOBILE PAYMENT SYSTEM IN BANGLADESH

Mainly there are four patterns are operating so far [3].

2.1 Mobile operator Oriented Mobile Payment System

Different Mobile Operator gives different payment service which are given bellow Table 1

2.2 Bank-oriented Mobile Payment System

The country's central bank 'Bangladesh Bank' Currency Management Department permits mobile financial services(MFS) on 22 September 2011 which were then revised on 20 December 2011 [4]. After the introduction of the MFS rules this sector has improved in a significant way. All of the MFS products are run by banks or their affiliates. About 28 banks are allowed for MFS by Bangladesh Bank and among them 19 banks started operation on MFS. In detailed investigation only 10 of the banks start operation and are providing MFS services. Rest of the banks are still working for confirming their platform, strategies and business model for MFS service.

Those banks that already have MFS products on the market include:

- bKash by BRAC Bank Limited
- Rocket by Dutch-Bangla Bank Limited
- MYCash by Mercantile Bank Limited
- mCash by Islami Bank Bangladesh Limited
- FSIBL FirstPay SureCash by First Security Islami Bank Limited
- IFIC Mobile Banking by IFIC Bank Limited
- UCash by United Commercial Bank Limited

Table 1: Mobile operators and payment services

Operator	Mobile payment services
GRAMEENPHONE	Bill Pay to pay utility bills MobiCash ticketing service for train
BANGLALINK	Train ticket Mobile Banking Mobile cash remittance Partners with post office mobile money order
TELETALK	Utility Bill Payment for BTCL subscribers, Implemented Online Registration System for SSC and HSC candidates, Implemented University Admission Process for public Universities .so one can buy and pay for University Admission Form. Electricity Bill Payment
ROBI	SMS bill payment services for post-paid and top-up for pre-paid customers, Mobile ticketing Robi cash
CITYCELL	Launched moneybag Dhaka WASA for mobile-based water and sewerage bill payments. Citycell One post-paid bill payment just by sending an SMS or just by logging into the Bank website. The services available through Mobile Banking Mobile bill payment SMS Banking

- OK banking by ONE Bank Limited
- Trust Bank Mobile Money by Trust Bank Limited
- Hello by Bank Asia Limited

Main advantages of MFS are the involvements of effective financial operation and management, highly customers trust and maturely payment system. Banks manage to make bindings between the users' cell phone numbers and their bank accounts by providing complete and flexible security system to ensure safety in payment procedure. Using the experience of account management, the local banks has started cell phone bank services with the existing large number of customers in low cost and highly trust.

Money transfer is now digital; an electronic prepaid card system has lunched by Bangladesh Bank that has a mobile payment option. Trust Bank Ltd also get permission as a settlement bank by central bank for digital money transfer and now 23 banks are linked with Q-cash network. Through mobile operator Banglalink's outlets Dhaka Bank has stated distributing foreign remittance.

Being a combination of mobile communications and e-currency the mobile phone banking services make both financial services in hand at any time any place and enrich the banking service content. Banks can provide traditional and innovative services with the mobile banking service system at a more secure and efficient way. It is becoming a powerful tool after ATM, POS or Internet due to being unique to the personal characteristics and getting more attentions from international bankers.

2.3 E-commerce Platform Oriented Payment System

Those who serve Internet content provider (ICP) are mainly known as E-commerce platform that provides online trading platform for trades. They create virtual network space for business to ensure guarantee of security. All the successful e-commerce based companies have their own payment systems in home and abroad where payment system and payment brands can share the original resources that reduce operating cost as well as it can be a profitable source for the organizations. Mobile commerce is now a developing industry. Many of the local E-commerce group has entered in the business battlefield by transforming from traditional payment systems to wireless payment systems. Internet Payment Gateway to facilitates E-commerce in Bangladesh was introduced by Dutch-Bangla Bank Limited (DBBL). The card can be used in any DBBL authorized e-Merchants in contradiction of their purchase of goods and service by the Visa/MasterCard card holder. DESCO electricity bills can also be paid. For facilitating purchase of ticket, payment of bills/fees and IPO subscription through the Internet Payment Gateway DBBL is working with airlines, railways, Utility companies, educational institutions and Stock Exchanges. Bangladesh's first e-commerce banking platform has launched by BRAC Bank Ltd. (BBL) in alliance with Visa which creates an opportunity to use Visa cards for Bangladeshi citizens for shopping online.

2.4 Independent Third-party Oriented Wireless Payment System

Mobile operators, banks and other various resources are integrated into the wireless payment system by the Independent third-party wireless payment services providers. For the cellphone user they can provide more security and specialized

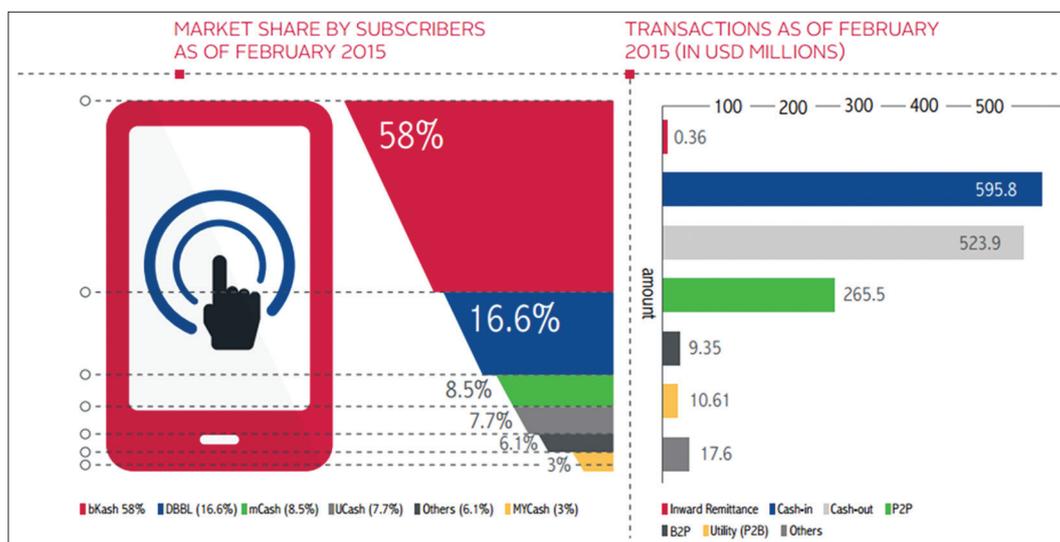


Figure 2: Market share and Transaction of MFS[5]

payment services. The payment authentication and payment confirmation of transactions are accomplished by a third-party wireless payment services by integrating mobile operators' network resources. The local wireless payment market is in early development stage and has a huge opportunity to explore the market although various companies are trying to promote their business relying on their own strengths [6]

The mechanism of independent third-party oriented wireless payment system is shown in following Figure 3.

In 2000, IT Consultants Limited was established in Bangladesh which was the local leader in the rapidly evolving arena. The largest Bank driven independent ATM network in Bangladesh is provided by it for Transaction Processing. Currently the company delivers Q-cash ATM, credit and debit card processing services and POS sharing of over 25 banks, POS sales & support, ATM sales & support, KIOSK-Deposit machine sales & support, Biometric ATM Solution, SMS Solution and Remittance management services[7]. Over 10,000 post offices branches across Bangladesh of 26 member banks offers essential payment services of over 100 million people via its hub. In last few years many third party payment systems integration and a rapid growth of service provider is investigated. By integrating the advantages and resources of financial institutions and mobile operators they provide wireless payment services for the market.

3. LIMITATION OF EXISTING MOBILE PAYMENT SYSTEM IN BANGLADESH

- Bill pay service provided by Grameenphone to pay utility bill is limited within several areas.
- Excess service charge by mobile operator, for example
- Ticketing service given by Grameenphone is limited to several regions.
- In mobile banking system in Bangladesh banks are associated with specific mobile phone operator. So other customers who have other operator can't get mobile payment service.
- PayPal mobile payment system is not supported in our country like other countries where most transactions are completed through the big payment platform.
- In other countries like Japan, China, Kenya which are leader for mobile payments widely use NFC technology with smart poster, NFC tag, for mobile payments to complete bank requirements of customer. But in our country, thus technology is not used for payment.

4. OBSTACLES TO THE GROWTH OF WIRELESS E-COMMERCIAL PAYMENT

Although mobile payments are increasingly used in some countries, Bangladesh is also adopting in mobile payment rapidly, despite their potential to add value for consumers and streamline the payments system.

M-commerce market is growing rapidly in a broader sense but still, it has some barriers which should be overcome.

- **High mobile internet broadband charges:** Several survey results show that the terrify charging of mobile broadband is not flexible. In Bangladesh, most of the mobile broadband users choose a fixed monthly package with limited data rate that is sufficient for browsing newspapers, instant messaging, e-mails but not sufficient for gaming and streaming videos online. Again if the monthly package exhausted, subscribers have to pay extra charge[8]. This high cost of data is a key difficulty for rapid development as the main users are young they are very much price sensitive. For the development of wireless payment system, the price of mobile broadband should be reduced.

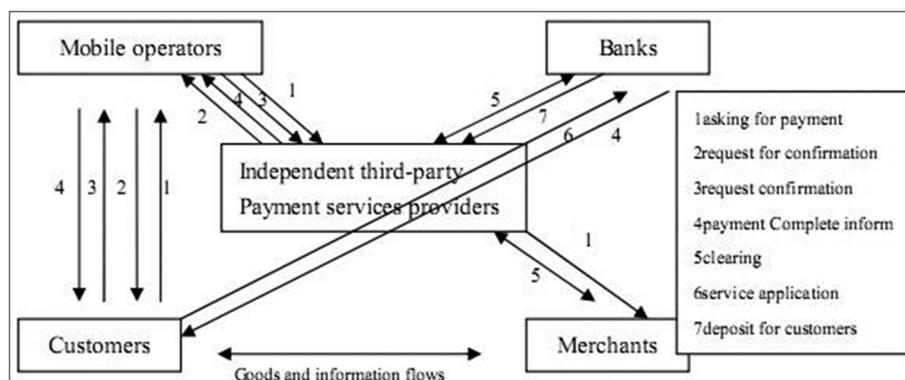


Figure 3: Appliance of independent third party oriented mobile payment system[3].

- Security innovation and application for wireless payment: The payment terminals of the mobile payment systems have the security problems. As the computing power of the cell phone is low due to its low memory and low calculating ability so it is difficult to configure many complex encryption algorithms. So data confidentiality can't be ensured. So how to increase data processing capability of cell phone terminal should be considered by all the numbers of the industry chain.
- Although in Bangladesh, mobile payment system is limited, but this limited service is not widely accepted by the mobile subscriber. For this reason, financial service provider and the mobile operator are not aggressive about enhancing the mobile payment service.
- According to the Daily Star, Bangladesh's central bank recently said that only financial institutions are allowed to provide financial services. Such kind of restriction is the barrier to improve the m-payment service for any country.

5. WHAT SHOULD WE TO DO TO APPLY MOBILE PAYMENT SYSTEM IN BANGLADESH

- Different industries, network service provider, mobile operator, financial service provider, government agencies should come forward to improve m-payment system.
- In CellBazer[9], one of the successful mobile based market place, customers can't pay directly via mobile because of a lack of secure and trusted of payment, for complete transaction method where in other countries, like Japan, China, ebay or amazon (another e-commerce Platform marketplace) can get information and pay for products via mobile. So including cellbazar other online shopping marketplace should provide efficient payment solutions for customer.
- NFC technology should be used for development of mobile payment in our country.
- PayPal mobile payment system should support in Bangladesh.
- In shopping mall of different countries just like Japan, China, customers can pay for choice of good directly through mobile. In Bangladesh, mobile payment system should be conducted in every shopping mall like other countries.

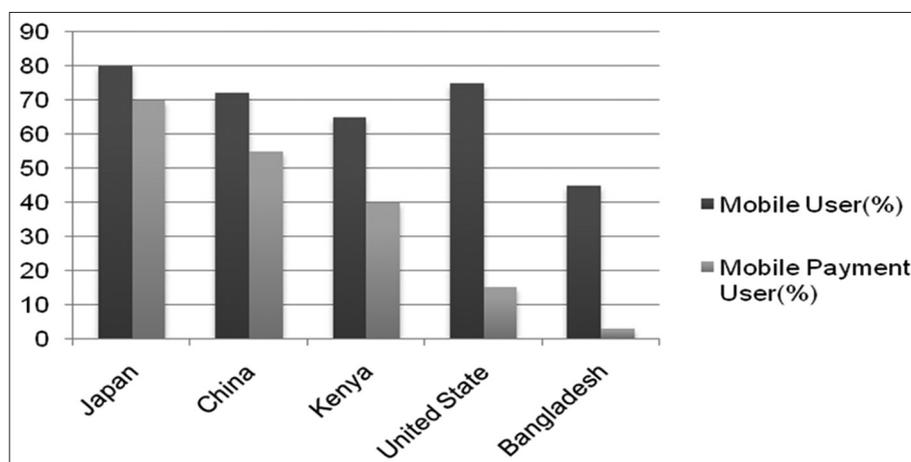


Figure 4: Global Statistics of Mobile Payment Service in World

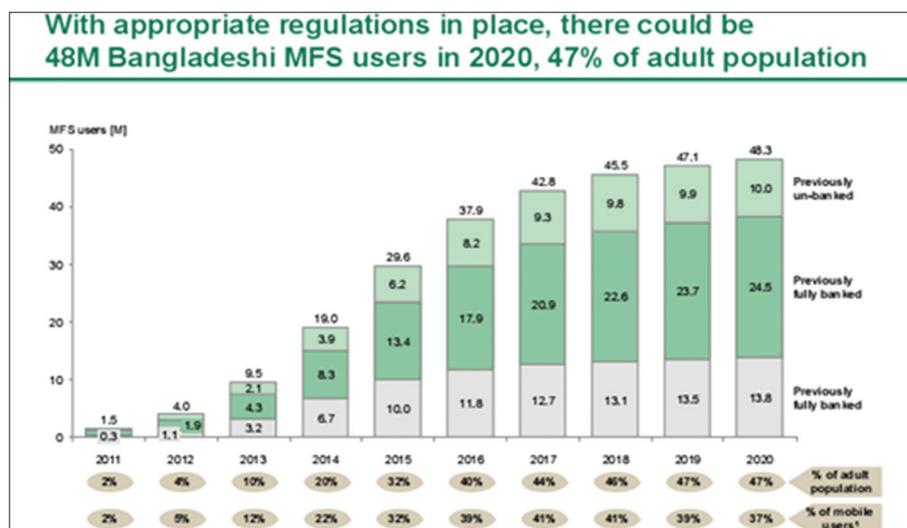


Figure 5: Reduction in number of un-banked

- The service charge for mobile payment given by mobile operator should be decreased.
- Security of mobile payment system should be developed.
- The co-ordination among network service provider, mobile operator, and financial service provider should be increased.
- The people should realize the better use of mobile payment in our country.

Given that this sort of supportive environment is in place, the potential number of MFS users has been projected until 2020. By 2020, 47 percent of all adult Bangladeshis—from the un-banked to the fully banked—could be MFS users, thereby reducing the number of un-banked by 10 percent. While the current financial inclusion rate of 55 percent should gradually increase to 59 percent by 2020, driven by overall development and economic growth, the additional 10 percent inclusion from MFS means financial inclusion in the country could reach 69 percent by that year.

6. CONCLUSION

In this paper, a brief discussion on how to increase the penetration rate of wireless payment services and the process of converting large number of cell phone users to end-users for MFS for mobile operators and wireless payment services providers are presented. Mobile payments are increasingly used in different countries; they have not been adopted widely in Bangladesh. We analyzed the current deadlock on the mobile payment market and give limitations that exist presently in Bangladesh and finally give some solution to improve the mobile payment market. Hope in the near future mobile payment will come as another future for Bangladesh.

REFERENCES

- [1] BTRC, “Mobile phone subscribers bangladesh February-2017,” 2017.
- [2] G. Intelligence, “<https://gsmaintelligence.com/markets/240/dashboard>.”
- [3] L. Shifeng and C. Rong, “Wireless E-commerce Payment and its Development in China,” in *Information Science and Management Engineering (ISME), 2010 International Conference of*, 2010, vol. 1, pp. 554-558: IEEE.
- [4] B. Bank, “<http://www.bangladesh-bank.org/mediaroom/circulars/circulars.php>.”
- [5] J. Parvez, A. Islam, and J. Woodard, “Mobile Financial Services in Bangladesh,” *USAID, mSTAR and fhi360*, 2015.
- [6] H. News, “http://www.hawker.com.bd/news_details.php?news_id=106403&news_category_id=19&val_lan=1.”
- [7] Ameinfo, “<http://www.ameinfo.com/250385.html>.”
- [8] L. Nan, “Three bottlenecks of wireless payment in China,” *Communications World Weekly*, 2009.
- [9] A. Zainudeen, R. Samarajiva, and N. Sivapragasam, “CellBazaar: Enabling m-commerce in Bangladesh,” *Information Technologies & International Development*, vol. 7, no. 3, pp. pp. 61-76, 2011.