Developing a Digital Payment Systems in Bangladesh

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Abstract

Digital payment systems play a crucial role in developing an efficient payment system in both developed and developing countries. Given the benefits of digital payments, Bangladesh Bank has upgraded and digitized its payment and settlement system remarkably over the past few years. The paper discusses on present digital payment system in Bangladesh, its advantages, disadvantages and limitations. Policy Recommendations to digitize domestic payment system are: developing a unique identification program in a centralized database that both public and private sector players can access to verify identities, implementing strict monitoring systems to prevent illegal money transaction, establishing an appropriate consumer protection framework, promoting product understanding and consumer education, improving regulatory environment, implementing interoperability among the platforms, Promoting merchant acceptance infrastructure, leveraging existing networks quickly to far-reaching areas, digitizing all government receipts & payments and merchant payments, and adopting appropriate cyber security measures.

Keywords: payments system, digitalization, regulations, regional cooperation.

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1. Introduction

Payment system plays a crucial role in managing market economy and implementing monetary policy. The healthy growth of financial market is achieved through a safe and efficient payment and settlement system. By delivering the financial services in the rural and remote areas, payment system helps financial inclusions and boosts up economic momentum and development. According to the Section 7A (e) of the Bangladesh Bank Order, 1972; one of the main functions of the Bangladesh Bank (BB) is - "to promote, regulate and ensure a secure and efficient payment system". In fulfilling this mandate, BB has been working to develop efficient payment systems for the stability of the financial system and the efficiency of the monetary policy operations. Over the past few years, BB has upgraded and digitized its payment and settlement system remarkably. Successful adoption of modern technology for both retail and large value payments has revolutionized the whole payment system. Mass people are enjoying more freedom of choice in their payments. The new payment channels have also reduced the cost of doing business in the country.

A report (November 2016) produced by Better Than Cash Alliance revealed that government entities, businesses, and individuals make only 12 percent of payments by value (equating to $44 billion of $367 billion total annual payments), and only 6 percent of payment by volume (around 260 million of 4.4 billion total payments) by electronic means. According to the mentioned report, 31 percent of government transactions, 97 percent of business payments and 97.5 percent of individual payments are being made in cash. This illustrates significant potential for further digitization of all types of payments to help build a digital payments ecosystem in Bangladesh.

In this context, highlighting the major benefits of digital payments this paper describes the state of the present payment system and some stylized facts about digital payment in Bangladesh. The paper also identifies specific challenges to digitize the county's payment system, and offers some specific actions that may be taken to facilitate the spread of digital payments in Bangladesh.

2. Literature Review

The literature on the digital payment systems is not very common. This is relatively new concept developed around the world. Besides, cross boarder digital payments is relatively new topic and very few studies are found on this issue. Currently, there are many regions around the world desire to create close economic spaces owing to the strong interrelation among the neighbouring countries. This opens several opportunities for innovation and

growth within the region. For example, South African Development Community (SADC) Payments Project is a collective initiative of 15 member countries in South African region. Single Euro Payments Area (SEPA) is an initiative undertaken to achieve greater economic and political alliance in the EU (European Union). The GCC-Net (Gulf Cooperation Council's Net) is a single ATM network linking all the GCC National Switches.

Uddin and Akhi (2014) analyzed the electronic wallet "e-wallet" system for Bangladesh. They argued that traditional business models are increasingly coming up against their limits, whereas e-wallet is a convenient, easy-to-use and secure payment system. They identified Authentication (digital signature, finger prints, two steps verification, password or smartcards etc.) as the main issue that should be taken care of for electronic payments system in Bangladesh. Goyal (2015) examined the role payment systems in South Asian integration. The author expressed that as payment systems become more sophisticated and their capabilities converge in the region, they can more actively facilitate trade. Author also opined that the existing Asian Clearing Union can be revitalized using developments in payment systems. Changes include faster settlement using real time flow, reduction in transaction costs and expansion of facilities offered. A study conducted by a2i Program of Prime Minister Office, Bangladesh found that the digitization of G2P payment of the six social safety net programs would save an estimated US$146 million annually which was 44 percent of the total operating cost, or 3 percent of the total budget of the six safety net programs studied.

3. Benefits of Digital Payments

Digital payments have lots of upsides. The major benefits of digital payments systems are:

Increase transparency

Cash payments are subject to leakage. Payments may not be reached to recipient in full or may be reached to fake recipients particularly in case of government transfer payments. Cash-based transactions are often prone to errors, such as double-billing or charging late fees when bills have actually been paid on time. In contrast, the traceability of the payment is improved with digital payments. First, recipients have digital records of the payments. Second, it generally requires more stringent identification documentation.

Lower costs

Recipients of cash payments often have to travel bank branch or government office to receive a remittance or government transfer or make a bill payment. This results in

significant travel time and expenses. This is further costly in terms of income forgone while traveling and waiting to collect a payment. Digital payments can be made quickly and efficiently which decrease overall costs.

Increase risk management

Digital payments can strengthen informal insurance networks. Digital network help people to tackle shocks by collecting money from friends and relatives in worse time. Digital payments allow governments and NGOs to reach the affected people rapidly and effectively.

Improve speed and timely delivery

In contrast to a cash payment, digital payments can be virtually instantaneous, regardless of whether the sender and receiver are in the same town, district or country. This means that employees are paid on time. In emergency situations speedy and timely delivery is important.

Increase security

Recipients of cash payments are often vulnerable to street crime. Digital payments can be held more securely than cash payments. Recipients can store value in his/her accounts or e-wallets, and cash out smaller amounts at their convenience or directly transfer funds onwards to pay for bills.

Increase financial inclusion

Digital payments are an important tool for financial inclusion as they provide financial services to poor at lower cost. Digital payments are often the first entry point into the financial system for individuals. Financial institutions see their cost of services is high and products are not suitable for unbanked people. Digital payment is well suited to address these unbanked people.

Increases women's economic participation and empowerment

Digital payments can contribute to increase women's economic participation and empowerment. Digital payment is often allows the recipient to conceal the payment from other household members or friends who may place demands on the use of the money.

Increase credit information and fewer non performing loans

The inclusion of digital payments data in consumer credit files can be used for credit assessment. This information allows lenders to distinguish between bad borrowers and good borrowers.

Improve Agricultural productivity and ensure food security

Digital payments can help farmers to improve agricultural productivity and ensure food security. Digital payment connects farmers more closely to their buyers and suppliers. It can help farmers to sell their crops quickly with higher prices. It also allows farmers to access needed credit, agricultural inputs and subsidies provided by the government.

4. Payment Systems of other SAARC Countries

The Board for Regulation and Supervision of Payment and Settlement Systems (BPSS), a sub-committee of the Central Board of the Reserve Bank of India (RBI) is the highest policy making body on payment systems in the country. The State Bank of Pakistan (SBP) has been playing a key role as a regulator, operator and facilitator of National Payment Systems. The large value payment system in Pakistan facilitates clearing and settlement of interbank payments, government, and corporate securities and other critical financial transactions. On the other hand, retail payment system has become crucial for the provision of digital financial services to the general public. The Royal Monetary Authority of Bhutan (RMAB) implemented Cheque Truncation System in 2007 and Electronic Funds Transfer and Clearing System (EFTCS), which consisting of three electronic payment system i.e. National Electronic Clearing System Credit (NECS Credit), NECS Debit and National Electronic Funds Transfer (NEFT), in 2010. While NECS enables interbank single debit and multiple credit/ multiple debit and single credit transfers, NEFT facilities one to one interbank funds transfer among its member banks. Bhutan implemented Bhutan Financial Switch (BFS) in 2011 to enable interoperability of ATMs and POS. Bhutan Immediate Payment Service (BIPS) was launched in 2017 which captured major chunk of retail payments. Currently, process is ongoing for inter-connection between BFS and National Financial Switch (NFS) of India to enable cross-border interoperability of RuPay cards issued by commercial banks in the ATM's and PoS terminals in India and Bhutan. Payment systems of Sri Lanka mainly fall into two categories – Large Value Payment Systems (LVPS) and Retail Payment Systems and Instruments (RPSI). The RTGS System is the payment system which falls into the category of LVPS. The RPSI on the other hand are many and varied. These systems can be further classified as paper based systems and electronic fund transfer systems. Cheques are the most widely known and freely used retail payment instrument among the general populace. However, payment cards, mainly comprising of debit and

credit cards, are gaining ground fast as a speedier method of making retail payments. The Sri Lanka Inter-bank Payment System (SLIPS) is an online interbank electronic fund transfer system catering mainly for low-value payments (up to Rs 5 million). Mobile banking and internet banking are relatively recent phenomena. The Common Card and Payment Switch (CCAPS), consists of five sub-switches, was established in 2003 under the brand name "LankaPay" with the objective of creating a single platform for electronic retail payments in Sri Lanka.

The existing retail payment systems of Nepal are Nepal Clearing House Ltd. (NCHL), Smart Choice Technologies (SCT), Nepal Electronic Payment System (NEPS) and Interbank Payment System (IPS). NCHL is electronic cheque clearing system which supports cheque clearing system. SCT and NEPS are shared ATM Networks which facilitates the processing of card transactions. IPS is operated by NCHL which facilitates interbank payments, direct debit and credit credits. The larger value payments are still processed manually through cheques. The threshold for large value payments for cheque clearing currently stands at Rs 100 million. While NCHL clears cheque denominating between Rs 100 million and Rs 300 million through Electronic Cheque Clearing (ECC) system, Nepal Rastra Bank (NRB) clears cheque denominating more than Rs 300 million manually. NRB is also in a process to establish RTGS for critical and large value payment processing in order to enhance effectiveness and smoothness in payment systems. In Maldives, currently all inter-bank transactions are executing via the Maldives Real Time Gross Settlement (MRTGS) system and the Automated Clearing House (ACH) system, which are both operated by the Maldives Monetary Authority (MMA). The MRTGS system processes and settles urgent, high value inter-bank transactions. Meanwhile, the ACH system is a session based clearing system for low value batch transactions consisting of three components, namely, direct credits, direct debits and cheque imaging and truncation. Payments through card and mobile banking have become increasingly popular and dominant electronic means of payment in the Maldives

5. State of the Payment System and Some Stylized Facts about the Digital Payments in Bangladesh

BB has undertaken various efforts on development of the country's payment systems since 2006. Bangladesh Automated Cheque Processing System (BACPS) started its live

operation since 2010. Later on, Electronic Funds Transfer (EFT), National Payment Switch Bangladesh (NPSB), e-Commerce, Mobile Financial Services (MFS), m-Commerce and Real Time Gross Settlement (RTGS) system joined the BACPS. These payment platforms are briefly described in the following sections.

Bangladesh Automated Clearing House (BACH)

BACH has two components - the Automated Cheque Processing System and the Electronic Funds Transfer. Both the systems operate in batch processing mode. Transaction instruments or instructions received from the banks during the day are processed at a pre-fixed time and settled through a single multilateral netting figure on each individual bank's respective book maintained with the BB.

Bangladesh Automated Cheque Processing System (BACPS)

BACPS uses CIT (Cheque Imaging and Truncation) technology for clearing the paper-based instruments, i.e. cheque, pay order, dividend & refund warrants, etc electronically. There are two clearing sessions available under BACPS, cheque valued Taka 5,00,000 (five lac) or above are eligible to be cleared in High Value (HV), while cheques of any amount may be cleared at a Regular Value (RV) clearing session. The clearing cycle has been brought down to t+1 for regular value cheques and t+0 for high value cheques throughout the country.

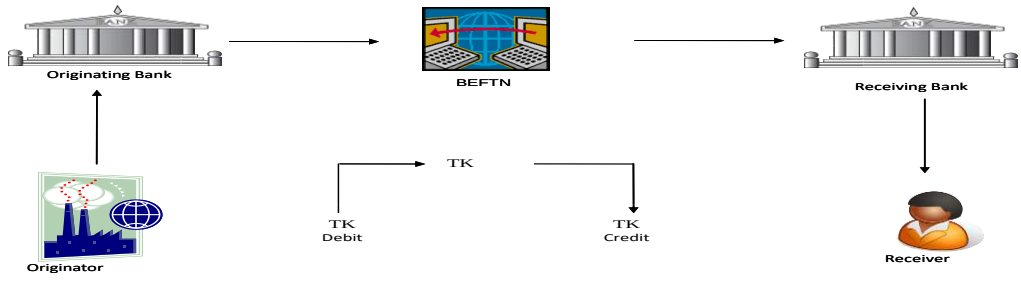
Bangladesh Electronic Funds Transfer Network (BEFTN)

BEFTN facilitates interbank payment, clearing and settlement of electronic credits as well as debits. BEFTN started its 'Live Operation with credit transactions in 2011 with a view to encouraging paper-less electronic payment methods. The network started its operations with debit transactions from September 15, 2011.

EFT Credit Transaction:

In EFT credits, the Originator instructs his/her bank to debit his/her account and transfer the fund to a Receiver's account. Payroll, dividends, refund payments, Business to Business payments and Government Benefit payments are some examples of EFT Credit transactions.

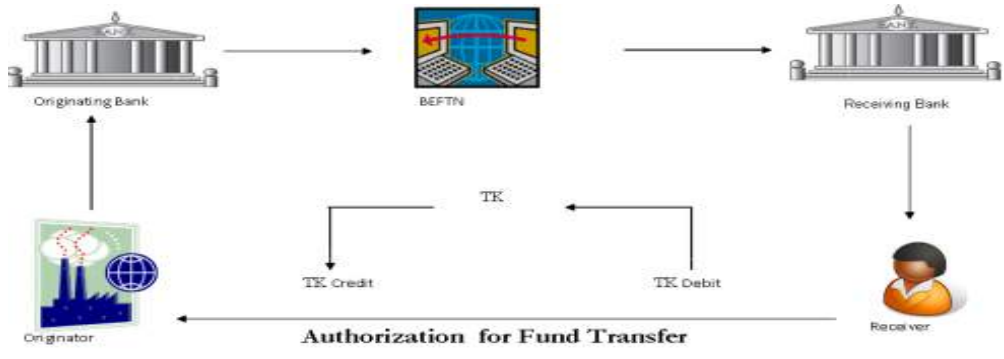
Transaction and Fund Flow of EFT Credit:



EFT Debit Transaction:

In EFT debits, the Originator instructs his/her bank to collect payment from a receiver often on a recurring basis. Utility bills, loan installments, insurance premiums are the example of EFT debit transactions.

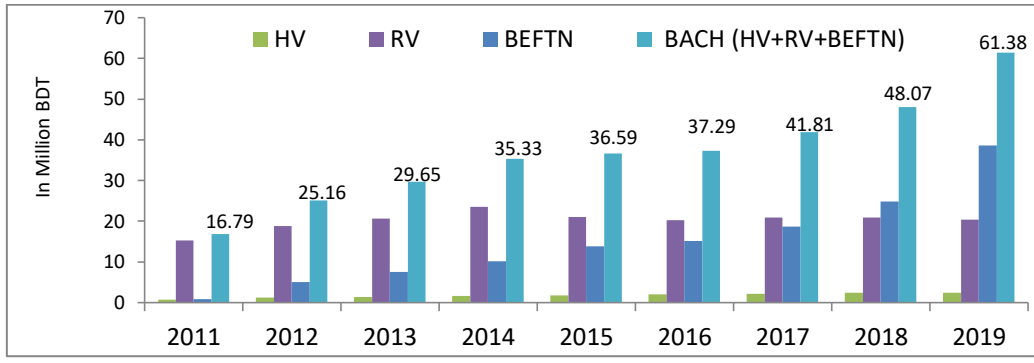
Transaction and Fund Flow of EFT Debit:



Transaction Status through BACH

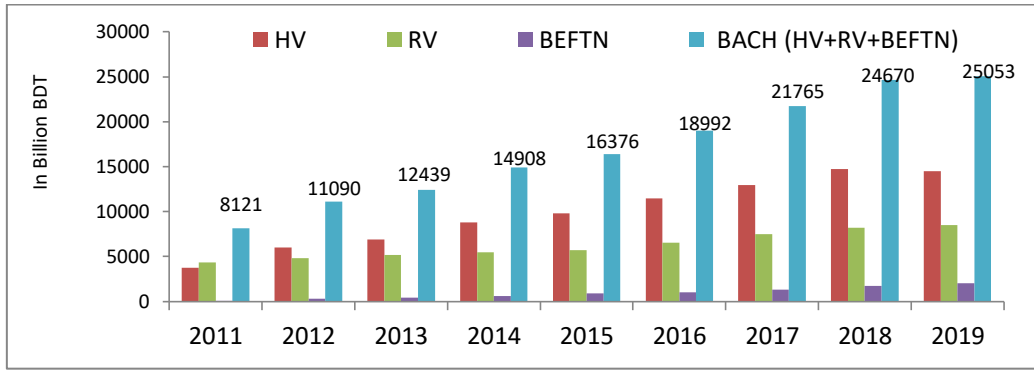
Transaction profile through BACH showed a steady growth over the years. In 2019, total 61.38 million items amounting to Taka 25053 billion were transected under BACH. Of which, 20.36 million regular cheques, 2.40 million high value cheques and 38.61 million EFT cheques valued at Taka 8520 billion, Taka 14480 billion and Taka 2052 billion respectively. The average monthly transaction through BACH also increased over the years. In 2019, on average monthly around 5.11million instruments were processed through BACH which valued at Taka 2088 billion (Annexure 1, Table-1, and Figure: 1 (a) and 1(b)).

Figure 1 (a): Number of Transaction Processed in BACH



Notes: HV=High Value, RV=Regular Value, BEFTN= Bangladesh Electronic Funds Transfer Network, BACH= Bangladesh Automated Clearing House.

Figure 1 (b): Amount of Transaction in BACH



Notes: HV=High Value, RV=Regular Value, BEFTN= Bangladesh Electronic Funds Transfer Network, BACH= Bangladesh Automated Clearing House.

Mobile Financial Services (MFS)

With the ability to deposit or withdraw and send or receive funds to mobile account, MFS system has become an important part of the financial system in Bangladesh. Banking service in Bangladesh is traditionally branch-based concentrated mainly in the urban areas. As of December 2019, there are about 10578 bank branches of 59 banks. Core banking solution i.e. online banking is not available in all branches of all commercial banks. Thus customers need to come to bank-branches due to limitation of online as well inadequate alternative delivery channels of banking services. As of December 2019, there are 20181877 Card, 10924 ATM and 58527 POS terminal throughout the country with

significant concentration in urban areas. Vast majority of the population live in the rural area and outside the coverage of traditional banking services. Number of bank account is 106.6 million (December 2019) in the country whereas the number of mobile user is 165.6 million (December 2019). Since mobile users have a better geographical distribution, mobile financial service is thus a critical aspect of the country's financial inclusion.

Rapid countrywide expansion of mobile phone networks and modernization of the country's payment systems and IT infrastructure have opened up opportunities for mobile phone based off-branch financial services delivery to the underserved population. MFS becomes a key driver of financial inclusion in transferring money from urban to rural, from privileged to under privileged to fuel the rural economy and in unblocking the advancement opportunities for the un-served and the underserved.

The permitted Mobile Financial Services in broad categories are as follows:

- Disbursement of Inward foreign remittances (Only the domestic part of transaction, no cross border transaction is permitted);
- Cash-in and cash-out using mobile account through agents, bank branches, ATMs and Mobile operator's outlets;
- Person to business payments. e.g. utility bill payments, merchant payments;
- Business to person payments. e.g. salary disbursement, dividend and refund warrant payments, vendor payments etc;
- Government to person payments. e.g. elderly allowances, subsidies etc;
- Person to Government Payments e.g. Tax, Levy payments;
- Person to Person Payments (One registered mobile account to another registered mobile account);Other Payments like microfinance, overdrawn facility, insurance premium, DPS, etc.

Till to date, a total of 28 banks and 1 subsidiary have been awarded with MFS licenses, although only 16 banks and one subsidiary are currently offering MFS. Transaction vis MFS expanded enormously over the years. During 2014-2019, transaction of MFS was higher by 4.7 times in terms of volume and 4.2 times higher in terms of value. The number of agents, registered customers and active account were also increased significantly during the period. At the end of December 2019, the total number of

registered MFS customers stood at 79.51 million, being served by almost 971620 agents nationwide. In 2019, the number of transactions via MFS was 2589.81 million valued at Taka 4344.90 billion (Annexure: Table 2, and Figure: 2, 3 and 4). Bkash and ROCKET are the two most prominent players in MFS industry in Bangladesh. The present market share of different services through MFS shows that the highest transactions are cash in transactions of 36 percent followed by cash out 33 percent, P2P 24 percent, B2P 2 percent, merchant payment 2 percent and utility bill payment (P2B) 1 percent.

Figure 2: No. of Agents, Customers and Active Accounts in MFS in Bangladesh

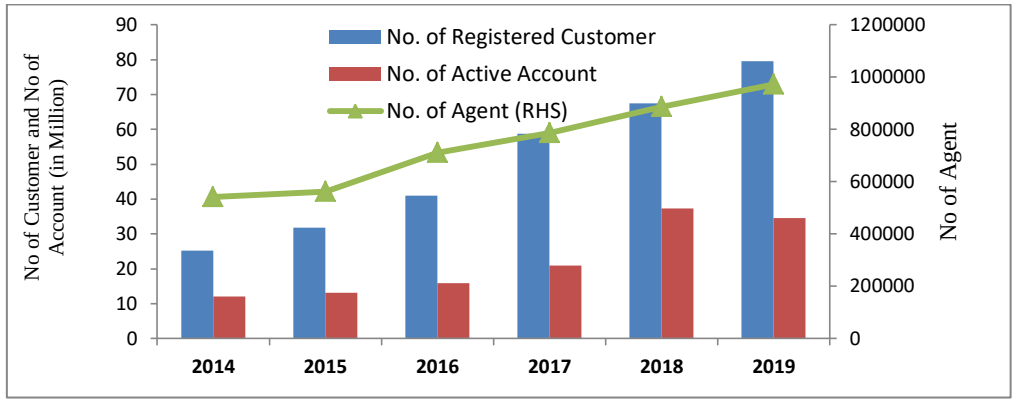


Figure 3: Trends of MFS Transaction in Bangladesh

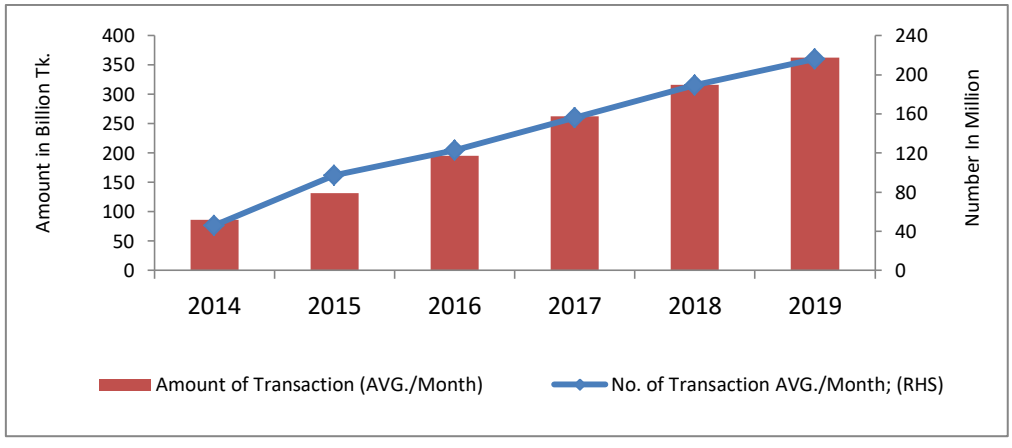
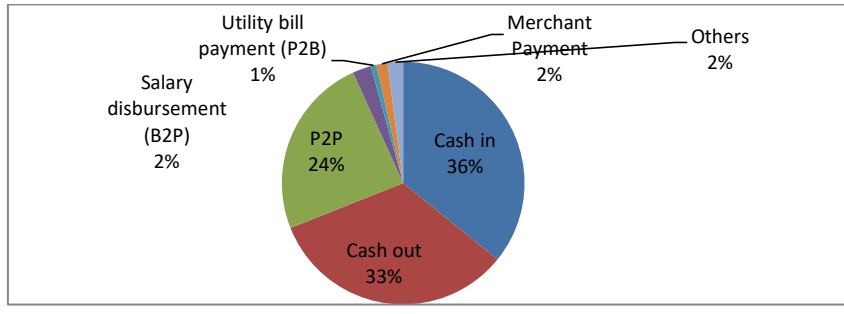


Figure 4 : Market Shares of Different Services in MFS (in December 2019)



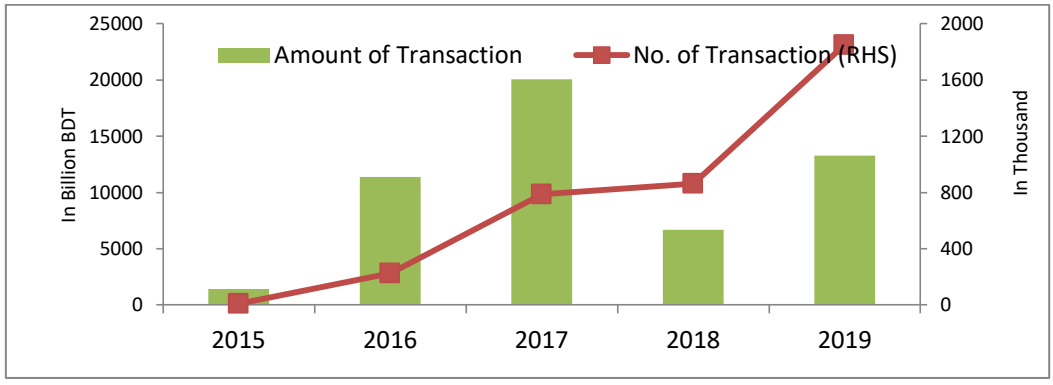
Currently, an individual may deposit maximum amount of Taka 30,000 in MFS account each day and Taka 2 lakh monthly. The transaction ceiling of person to person under MFS in Bangladesh is as follows:

	Frequency	Maximum Number	Ceiling (in Taka)
Cash in	Daily	5	30,000
	Monthly	25	2,00,000
Cash out	Daily	5	25,000
	Monthly	20	1,25,000
P2P	Daily	–	25,000
	Monthly	–	75,000

Bangladesh Real Time Gross Settlement (BD-RTGS) System

BD-RTGS is an electronic inter-bank payment settlement system where transfer of funds takes place from one bank to another on 'real time' and on 'gros' basis. Settlement in `real time" means transaction is not subjected to any waiting period. `Gross settlement" means the transaction is booked in central bank's account on one to one basis without netting with any other transaction.

Figure 5: Trends of RTGS Transactions in Bangladesh



It is worthwhile to mention that more than 7000 online branches of scheduled banks are connected (As of June 2018) to this system out of existing 11000 bank branches in the country. The system is allowed to handle only high value (Taka 1 lac and above) local currency transactions and domestic foreign currency transactions are expected to be executed soon. The transactions with RTGS showed overwhelming growth since inception. The number of items processed through RTGS rose from just only 8.83 thousand in 2015 to 1848.48 thousand in 2019. Similarly, the amount transaction through RTGS during the period was also roughly 10 times higher which rose from Taka 1387 billion in 2015 to Taka 13261 billion in 2019 (Annexure 1: Table-3, and Figure 5).

National Payment Switch of Bangladesh (NPSB)

In order to facilitate interbank electronic payments originating from different channels like ATM, POS and internet, etc., BB introduced NPSB in 2012. The main objective of NPSB is to act as a mother switch and to connect all child switches (owned and operated either by bank or a non bank entity) ultimately to create a common platform for the switches which settle the electronic payment in Bangladesh. As of January 2020, 53 banks are operating card based electronic payment process in Bangladesh. Among those, interbank ATM transactions of 52 banks, POS transactions of 51 banks and IBFT (Internet Banking Fund Transfer) transaction of 24 banks are being routed through NPSB. Other banks are also likely to join NPSB soon.

NPSB is contributing to popularize card-based electronic payment in Bangladesh. As a result, cards and various card-based payment terminals are growing very fast (Annexure 1, Table-4). The transactions of interbank ATM, POS and IBFT through NPSB are also

growing rapidly. In 2019, NPSB has processed 30696 thousand transactions amounting to Taka 211251 million. It is observed that, during the period 2015-2019, the transaction values of ATM and POS were 4.3 and 75.0 times higher respectively. During the same period, NPSB transaction was 4.2 times higher in terms volume and 5.1 times higher in terms value (Annexure: Table 5, and Figure 6 (a)-6(e).

Figure 6 (a): Trend of ATM Transaction

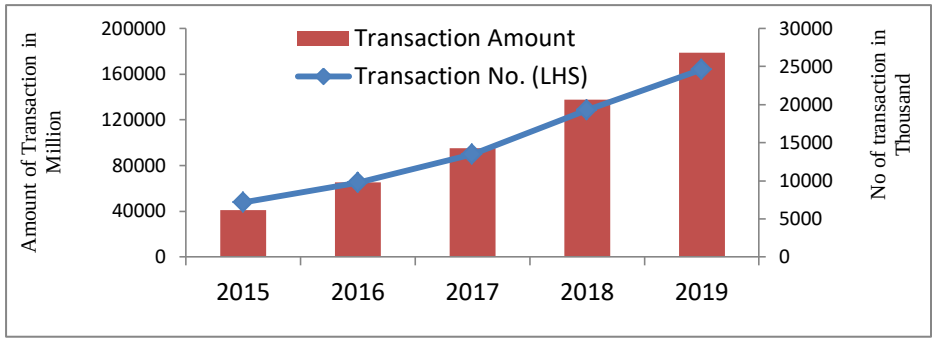


Figure 6 (b): Trends of POS Transaction

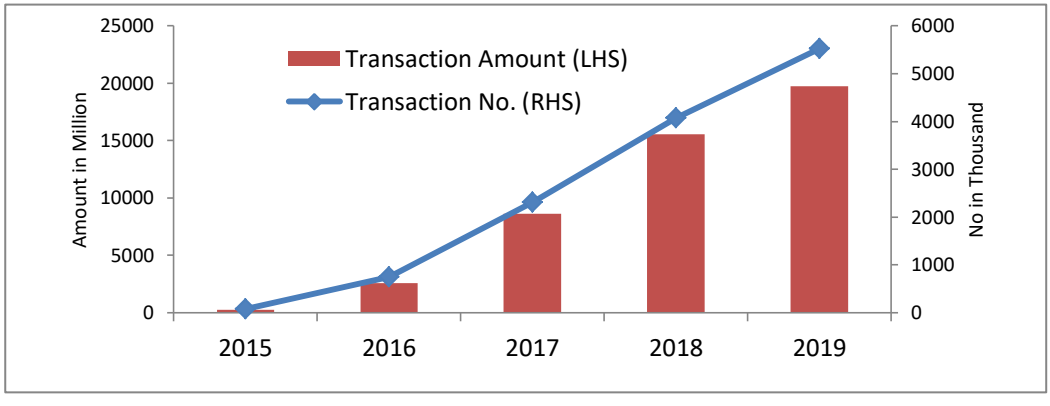


Figure 6 (c): Trend of IBFT Transaction

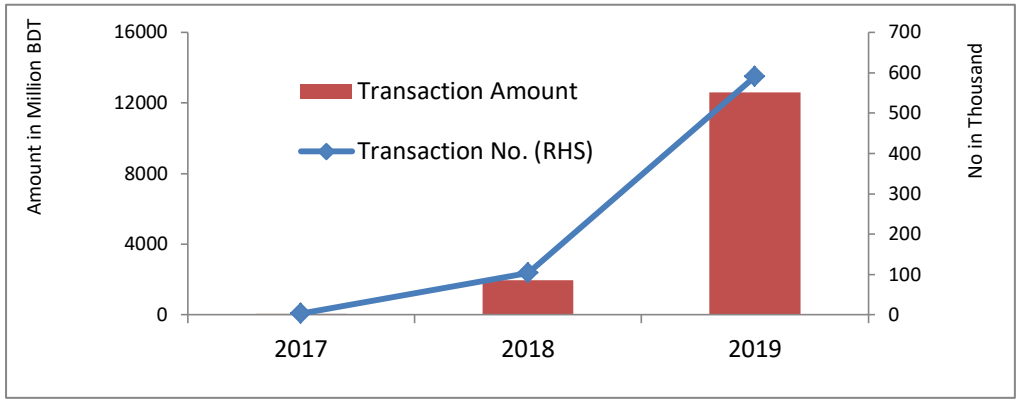


Figure 6 (d): Trend of Transaction in NPSB

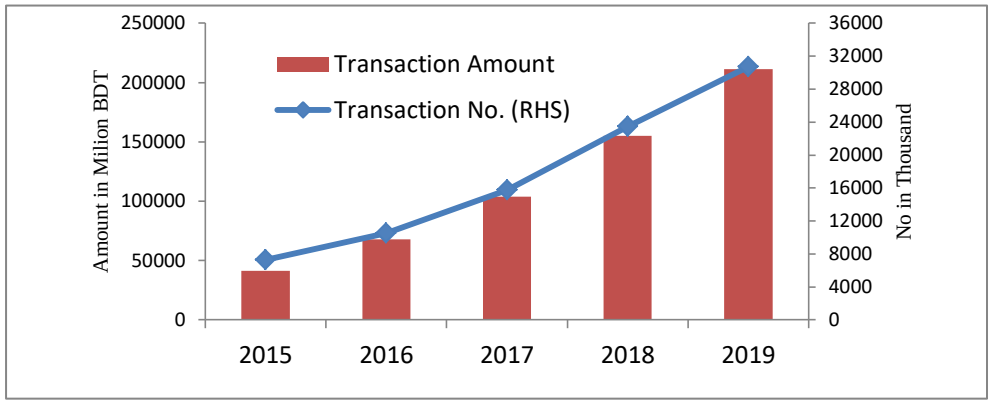
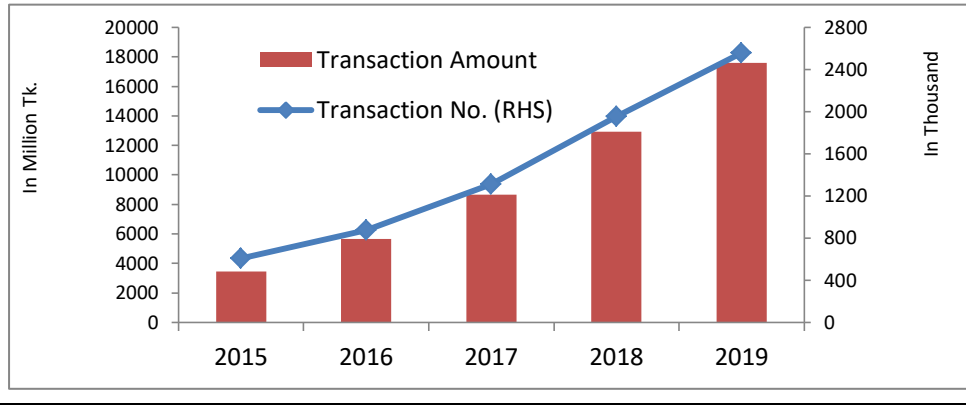


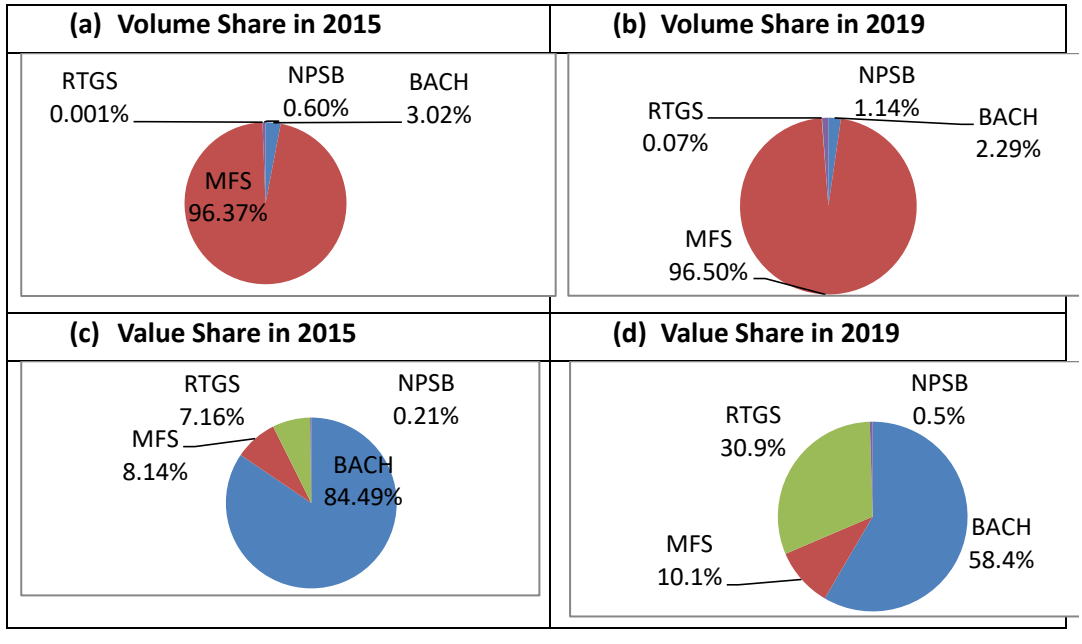
Figure 6 (e): Average Monthly Transaction of NPSB



Relative importance of the Payment Platforms of Bangladesh

Figure 7 and Annexure 1, Table-6 show the relative market share of various payment platforms over time. It is observed that the dynamics of shares of the most of the payment services, except BACH, showed rising trends over the years. In terms of number of transactions, the share of MFS far outweighed other payment services, which was 96.5 percent in 2019. In terms of value, BACH contributed the largest share of 58.4 percent transaction, followed by RTGS 31 percent transaction, and the share of MFS was roughly 10 percent in 2019. It is also mentionable that different payment platforms are facilitating different types of payment needs of the customers. RTGS meets the need of large value payment while BACH serves for both large and small payments. The NPSB and MFS mainly deal with small ticket size retail payments. Therefore, though MFS cleared 96 percent of transaction, its value share was relatively less due to its smaller ticket size nature of transaction.

Figure 7: Comparison of Market Share of Payment Platforms



Payment Systems Operator (PSO) and Online Payment Gateway Service Providers (OPGSPs)

As a growing economy, e-commerce and online purchases are gradually getting popular and increasing in the country. OPGSPs play a crucial role for settling the payment leg of e-commerce and online purchases. Considering the market demand, BB has permitted 05 (five) organizations to work as PSO to facilitate the payment leg of the e-commerce and online purchases. Banks are now allowed to offer the facility of receiving remittances against small value service exports in non-physical form such as data entry/data process, off-shore IT service, business process outsourcing etc. The exporters of the above services will be able to receive their overseas payments through the OPGSPs.

E-Commerce and M-Commerce facilitation

BB has issued directives to the banks for starting e-Commerce activities among the country. BB has permitted transfer fund up to TK. 5,00,000 from one clients account to another clients account lying in the same bank using internet/online facilities subject to the fact that it will fully comply with prevailing money laundering prevention legislations. In order to ensure IT security for online and e-commerce transactions BB has mandated for the banks to introduce 2FA (Two Factor Authentication) for card not present transactions valuing Tk 5000 and above. In order to start M-Commerce in Bangladesh, mobile network operators have been given permission to sell railway tickets and tickets of cricket matches organized by the BCB (Bangladesh Cricket Board) using mobile technology. Three Telcos have got permission for m-Commerce related transactions.

Legal & Regulatory Frameworks

BB published a number of legal and regulatory documents to provide legal and regulatory support for electronic transfer of funds:

- "Bangladesh Automated Cheque Processing Systems (BACPS) Operating Rules and Procedures" in January 2010.
- "Guidelines on Mobile Financial Services for the Banks" in September 2011.
- "Guidelines on Agent Banking for the Banks" in December 2013.
- "Bangladesh Payment and Settlement Systems Regulations (BPSSR), 2014" in May 2014.
- "Bangladesh Electronic Funds Transfer Network (BEFTN) Operating Rules" in May 2014.
- Bangladesh Mobile Financial Services (MFS) Regulations, 2018

Other Payment Systems Initiatives

- BB has finalized the draft Payment and Settlement Systems Act 2017 which is now under process for approval.
- Steps have also been taken to bring amendment in certain provision of Negotiable Instruments Act, 1881 and Bankers Book of Evidence Act, 1891.
- BB is working closely with the government organizations for introducing online VAT payment system.
- BB has arranged several seminar, rally and road-show at different divisional cities as a part of awareness raising campaign.

6. The Bottlenecks/Challenges of Digital Payment System in Bangladesh

There are so many positive developments happened in last couple of years to upgrade and digitize the national payment system of Bangladesh. However, there are also some bottlenecks and challenges that need to be fine tuned and resolved to develop the payment system further. The major challenges are:

Safety and reliability

Maintaining confidence and reliability is a major challenge for digital payment. Digital payments could have adverse effects if it does not work properly. Payment delays or agents' liquidity problem can undermine entire program. People may fail to trust on the new system. Digital payment mechanisms must have security breaches, proper dispute resolution mechanism and fraud management policies.

Probable cyber crime

Cyber security has remained a matter of concern for many banks. Some banks are still lag behind in using two-factor authentication to protect consumers' accounts. Usage of biometric security technology is still limited in Bangladesh. Lack of qualified IT manpower and lack of knowledge among clients about cyber crime also pose risks to digital payment system.

Interoperability of bank and nonbank financial service providers

Lack of interoperability among MFS, banks, and other platforms is a significant barrier to developing a digital payment system. Moreover, monopoly situation in MFS market, where market leader (Bkash) captures about 90 percent of market share, is also a big challenge. It may be mentioned that there are only 38077 POS and 9586 ATMs, and in

total only 47663 acceptance points in the country, whereas mobile banking has more than 811073 acceptance points. Therefore, convergence of MFS and card system may be considered so that mobile and card can complement each other.

Physical infrastructure

Providing access to financial services or cash-in/out points and ensuring sufficient liquidity at access points remain the core challenges in moving toward digital payments. The lack of electricity, towers, mobile network, and poor roads and transport networks are bottlenecks for digital payment services in rural areas. Leveraging new technologies such as mobile phones, ATMs, POS terminals and online services, and modernizing existing infrastructure can be an effective way to reach rural people.

Consumer education

Educating people about the digital payment service is a challenge. Many recipients may not understand cash-out process or how to use an ATM. These people might not be comfortable with using a digital payment system. Recipients must be educated about using and remembering their PINs (personal identification numbers), have to understand how much money they receive, not to share their PIN and what to do if something went wrong.

Money Laundering and Financing of Terrorism Issue

Preventing suspicious transaction, ML (money laundering) and TF (terrorist financing) via digital payments is a major challenge. OTC (Over-the-Counter) transaction remains a dominant part of MFS in Bangladesh. As OTC customers do not have KYC (Know Your Customer) information, they may facilitate untraceable transfer of illicit money. Preventing use of MFS Channels to settle Hundi is also a challenge for Bangladesh.

Policy Recommendations to Digitize Domestic Payment System

The following measures may effective to expedite our journey from cash to digital payments:

- Developing a unique identification program in a centralized database that both public and private sector players can access to verify identities,
- Implementing strict monitoring systems to prevent illegal money transaction,
- *Establishing an appropriate consumer protection framework,*
- *Promoting product understanding and consumer education,*

- Improving regulatory environment **,**
- Implementing interoperability among the platforms,
- Promoting merchant acceptance infrastructure,
- Leveraging existing networks quickly to far-reaching areas,
- Digitizing all government receipts & payments and merchant payments, and
- Adopting appropriate cyber security measures.

7. Conclusion

Transparency, speed, and costs are the primary motivation for end-users of a payment system. These goals are not easy to achieve. For improvements, we need to develop a payment platform that offers high quality payment services not only domestically but also across the borders. However, working with a diversified group requires a careful balance between innovation, new technology, and expectations of the end users.

Establishing a efficient electronic payment platform in the country we need to promote fast, safe, and efficient means of payments system. A common digital platform would enhance the efficiency of cross-border payments by increasing the speed and reducing the cost of transactions. However, before Bangladesh joins such a platform, it is essential to further modernize the domestic payment infrastructures and interoperability, harmonizing the rules and regulations, and standardizing technical processes across the cross boarder nations.

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Annexure 1

Table 1 (a) : Transaction Status in BACH

1. (a) Item Processed in BACH

(No. in Million)

Year	BACPS		BEFTN	BACH (HV+RV+BEFTN)	Ave./ Month
	HV	RV			
2011	0.68	15.30	0.82	16.79	1.40
2012	1.26	18.82	5.07	25.16	2.10
2013	1.37	20.69	7.59	29.65	2.47
2014	1.61	23.50	10.21	35.33	2.94
2015	1.81	21.02	13.76	36.59	3.05
2016	1.99	20.22	15.09	37.29	3.11
2017	2.22	20.95	18.64	41.81	3.48
2018	2.41	20.85	24.80	48.07	4.01
2019	2.40	20.36	38.61	61.38	5.11

1 (b) : Transaction Amount in BACH

(Amount in Billion Taka)

Year	**BACPS**		**BEFTN**	**BACH** (HV+RV+BEFTN)	**Average/Month**
	HV	**RV**			
2011	3732	4335	54	8121	677
2012	5977	4827	285	11090	924
2013	6877	5165	396	12439	1037
2014	8812	5497	598	14908	1242
2015	9795	5707	874	16376	1365
2016	11479	6518	994	18992	1583
2017	12969	7462	1334	21765	1814
2018	14733	8214	1723	24670	2056
2019	14480	8520	2052	25053	2088

Source: Bangladesh Bank.

Notes: HV=High Value, RV=Regular Value, BEFTN= Bangladesh Electronic Funds Transfer Network, BACH= Bangladesh Automated Clearing House.

Table 2 (a) : Present Scenario of MFS in Bangladesh

2 (a) Number of Agents, Customers and Accounts

YEAR	No. of Agent	No. of Registered Customer (in Millions)	No. of Active Account (in Millions)
2014	540984	25.19	12.15
2015	561189	31.85	13.22
2016	710026	41.08	15.87
2017	786460	58.79	21.00
2018	886473	67.52	37.30
2019	971620	79.51	34.65

2 (b) : Transaction of MFS

	No. of Transaction	**No. of Transaction (AVG./Month)**	**Amount of Transaction**	**Amount of Transaction (AVG./Month)**
	in Million	in Million	in Billion Taka	in Billion Taka
2014	549.48	45.79	1031.55	85.96
2015	1166.05	97.17	1577.73	131.48
2016	1473.24	122.77	2346.92	195.58
2017	1875.63	156.30	3146.62	262.22
2018	2272.75	189.40	3788.86	315.74
2019	2589.81	215.82	4344.90	362.07

Source: Bangladesh Bank.

Table 3 : Yearly Transaction through RTGS

Year	**No. of Transaction** (In thousands)	**Amount of Transaction** (In Billion Taka)
2015	8.83	1387.1
2016	225.82	11378.28
2017	785.29	20063.90
2018	863.35	6674.75
2019	1848.48	13260.95

Source: Bangladesh Bank.

Table 4: Total Number of Card, ATM and POS in Bangladesh				
Terminal	June 2017	June 2018	June 2019	December 2019
No. of Debit Card	10802217	12575605	15758977	18231093
No. of Credit Card	936148	1000474	1203427	1537202
No. of prepaid Card	205285	158526	277498	413582
Total Cards	11943650	13734605	17239902	20181877
ATM Booth	9246	9747	10722	10924
POS	36288	41130	52846	58527

Table 5 : Transaction through NPSB								
Year	ATM		POS		IBFT		NPSB (ATM+POS+IBFT)	
	No. in thousand	Amount in Million Taka	No. in thousand	Amount in Million Taka	No. In thousand	Amount In Million Taka	No. in thousand	Amount in Million Taka
2015	7197	41162	77	263	-	-	7274	41425
2016	9740	65418	742	2567	-	-	10482	67985
2017	13443	95335	2315	8622	3	42	15760	103999
2018	19261	137650	4077	15572	104	1953	23442	155174
2019	24578	178915	5527	19746	590	12590	30696	211251
Source: Bangladesh Bank.								

Table 6: Dynamics of Market Share of Payment Platforms				
a) Share (%) in Terms of Number of Transaction (Volume)				
Year	**BACH**	**MFS**	**RTGS**	**NPSB**
2015	3.0	96.4	0.0	0.6
2016	2.5	96.8	0.0	0.7
2017	2.2	97.0	0.0	0.8
2018	2.0	96.9	0.0	1.0
2019	2.3	96.5	0.1	1.1
b) Share (%) in Terms of Transaction Value				
Year	**BACH**	**MFS**	**RTGS**	**NPSB**
2015	84.5	8.1	7.2	0.2
2016	57.9	7.2	34.7	0.2
2017	48.3	7.0	44.5	0.2
2018	69.9	10.7	18.9	0.4
2019	58.4	10.1	30.9	0.5
Source: Bangladesh Bank.				

Annexure 2

Acronyms

ACH	Automated Clearing House
a2i	Access to Information
AML	Anti-Money Laundering
ATM	Automated Teller Machine
BACH	Bangladesh Automated Clearing House
BB	Bangladesh Bank
BACPS	Bangladesh Automated Cheque Processing System
BEFTN	Bangladesh Electronic Funds Transfer Network
BFS	Bhutan Financial Switch
BIPS	Bhutan Immediate Payment Service
B2P	Business to Person
CCAPS	Common Card and Payment Switch
CFT	*Combating the Financing of Terrorism*
CIT	Cheque Imaging and Truncation
ECC	Electronic Cheque Clearing
EFT	Electronic Funds Transfer
EFTCS	Electronic Funds Transfer and Clearing System
EU	European Union
GCC	Gulf Cooperation Council
G2P	Government to Person
HV	High Value
IBFT	Internet Banking Fund Transfer
IPS	Interbank Payment System
KYC	Know Your Customer
LVPS	Large Value Payment Systems
MFS	Mobile Financial Services
MMA	Maldives Monetary Authority
MRTGS	Maldives Real Time Gross Settlement
NCHL	Nepal Clearing House Ltd.
NECS	National Electronic Clearing System
NEFT	National Electronic Funds Transfer
NEPS	Nepal Electronic Payment System
NFS	National Financial Switch
NPSB	National Payment Switch Bangladesh
NRB	Nepal Rastra Bank
OPGSPs	Online Payment Gateway Service Providers
OTC	Over-the-Counter
P2B	Person to Business
P2G	Person to Government
P2P	Person to Person
POS	*Point of Sale*
PSO	Payment Systems Operator
PSPs	Payment Service Providers
RBI	Reserve Bank of India

RMAB	Royal Monetary Authority of Bhutan
RPSI	Retail Payment Systems and Instruments
RTGS	Real Time Gross Settlement
RV	Regular Value
SAARC	South Asian Association for Regional Cooperation
SADC	South African Development Community
SBP	State Bank of Pakistan
SCT	Smart Choice Technologies
SEPA	Single Euro Payments Area
SLIPS	Sri Lanka Inter-bank Payment System