MAINSTREAMING AND UPGRADING IDENTITY AND PAYMENTS INFRASTRUCTURE TO IMPROVE THE GOVERNMENT-TO-PERSON (G2P) DELIVERY PROCESS

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SUMMARY

Digital financial services (DFS) have revolutionised the delivery of financial services by cutting down transaction costs while at the same time reaching out to various poor and marginalised groups who have long been excluded from the formal financial sector. Considering the enormous role that DFS can play for financial inclusion, policymakers and financial regulators around the world have provided enabling environments for the relevant digital technologies (fintech) and business models. The Government of Bangladesh—under its overarching policy objective of delivering government services to citizens through the widespread use of technology (known as Digital Bangladesh)—has introduced multiple initiatives aiming to boost economic growth through financial inclusion with the aid of DFS.

The rapid growth of mobile cellular phone usages in Bangladesh in conjunction with regulatory changes allowing banks to establish subsidiaries offering financial services through mobile phones has made it possible for mobile financial services (MFS) to become an important means of promoting financial inclusion. Another big policy push for promoting financial inclusivity through DFS was the reform initiatives undertaken to transfer government-to-person (G2P) payments for social security schemes directly to beneficiaries using either their bank or MFS accounts.

Bangladesh has also made advances in identification and payments infrastructures to let DFS flourish. The national identification (NID) database—originally initiated for issuing voters' ID—currently registering about 110 million adult citizens and sufficient for meeting basic customer due diligence requirements has been made available for establishing an electronic know your customer (e-KYC) ID verification system, boosting the expansion of DFS through fast customer onboarding and reduced cost. This is already playing an important role for mobile financial inclusion. However, 8 per cent of the adult population is reported to be not in the NID database. When the non-adult population group is considered, 32 per cent of Bangladeshi citizens do not have a digital ID. Achieving a full ID coverage of the population can be particularly helpful for women, poor and vulnerable groups who are more likely to be outside of the formal financial system and are in need of various social security support.

Upgrading of the NID database should also include amending or updating any personal information as it has been reported that wrong dates of birth have made many elderly citizens ineligible for such social security benefits as old age allowances. One critical challenge confronting Bangladesh's social protection system is to develop a single social registry of beneficiaries drawing on from separate databases maintained by various ministries. The use of ID of individual beneficiaries can help establish a robust single registry.

Bangladesh's DFS ecosystem suffers from the absence of a universal payment gateway, which impedes progress towards a greater financial interoperability. While interoperable payments system allows cost-effective transactions across platforms with a single account, lack of it in Bangladesh has contributed to such phenomena as market concentration, preselection of DFS providers for G2P delivery, and customer inconvenience. At present, for various social security payments, beneficiaries are asked to open accounts with specific service providers. Interoperability, on the contrary, will allow them opting for their choice of service providers in receiving the payments. The existing national payment switch only offers interoperability among banking institutions. To address this problem, the central bank is currently developing an Interoperable Digital Transaction Platform (IDTP). Interoperability will not let service providers consider their customer base as captive, encouraging them to innovate new and improved services.

Establishing a prudent and coherent regulatory framework for DFS is extremely important, as, amongst others, both the central bank and telecommunication regulators, can have the competence and scope for regulating cross-cutting aspects of MFS. While the Bangladesh Bank is the apex regulatory body for all financial institutions and any entity operating in the financial area, at least one DFS provider is currently using a separate legal framework. This does not ensure a level playing field for all service

providers. Some stakeholders highlight the need for a regulatory sandbox for encouraging innovation although its suitability would depend on regulatory objectives and the capacity of the regulator, among others. Potential entrants often find it difficult to enter the market with new services due to the absence of regulations that enable private piloting of such facilities. DFS can be an extremely powerful enabler of financial inclusion when innovation can bring in appropriate services to meet the needs of the women, poor and vulnerable groups along with those of the overall economy.

Despite the remarkable progress achieved over the past decade, the growing gender gap in financial inclusion is a concern. Although there are efforts to improve the situation through the digitization of G2P in largest transfer schemes that target rural, poor, marginal, and vulnerable women, there exist significant room for making the overall DFS architecture more gender inclusive. This includes, amongst others, digitisation of G2P payment and wages for women, regular collection and evaluation of gender disaggregated DFS data, dealing with systemic challenges that exclude women from participating in digital financial services (e.g., because of a gender gap in ID coverage, gender differences in access to phones, exclusion from social protection schemes, etc.) and expanding the existing product space of female DFS users.

Policy Recommendations

Overall, discussions and findings from the paper highlight certain areas where further policy attention is needed to exploit the full potential of DFS. These are:

Upgrading ID Systems:

- Achieving a full ID coverage and making the ID system more accessible to providers of social security programmes.
- The complete digitalisation of the G2P payment system, linking the beneficiary targeting of social security/enrolment to NID along with operationalising the National Household Database for addressing exclusion and inclusion errors in beneficiary selection.

Establishing Interoperable Payment Systems:

- Establishing economywide interoperability to ensure seamless and cost-effective transaction across platforms with a single account for greater customer convenience and inclusion.
- Developing a commission structure for G2P payments for MFS providers

Streamlining Regulations to Support Inclusive DFS:

- Streamlining a prudent regulatory framework for a level-playing field for service providers and creating an enabling environment for promoting innovative services.
- Advancing women's financial inclusion in DFS through evidence-backed and gender-centric interventions as well as encouraging development of gender-sensitive financial services.
- Introducing an effective and inclusive grievance redressal system as core to the identity infrastructure that will help pave the way for greater security and trust in the digital ecosystem.

I. INTRODUCTION

Over the past decade or so, digital financial services (DFS) have revolutionised the delivery of financial services while at the same time reaching out to various poor and marginalised groups that have long been excluded from the formal financial sector. There is growing evidence that financial inclusion – defined as having access to financial products and services by individuals and businesses to meet their needs such as transactions, payments, savings, credit, and insurance in a responsible and sustainable way (World Bank, 2020) – is important for promoting growth, can help reduce poverty and inequality, and generates substantial benefits for women and poor adults (Demirguc-Kunt et al., 2017; Sahay et al. 2015; Kim et al. 2018). Yet, about one-third of the world's adults – and a much higher proportion of the people in many developing countries – lack access to even the most basic transaction account that would allow them to send and receive payments safely let alone avail other services (e.g., savings, insurance, and credit services) enabling them to expand economic activities and mitigating risks (World Bank 2020). It is in this backdrop that innovations in technology and business models have led to the rise of DFS with tremendous potential of expanding the delivery of financial services to the poor. Through such innovative technologies as mobile-phone-enabled solutions, electronic money transfers and digital payment platforms, DFS can drive down costs for customers and service providers and make available more tailored financial services even to remote and usually underserved populations.

Considering the enormous role that DFS can play for financial inclusion, policymakers and financial regulators around the world have provided enabling environments for the relevant digital technologies (fintech) and business models to flourish. This has resulted in the rise of the share of adults with an account from 51 percent in 2011 to 69 percent in 2017.[1] Despite a wide variation in account ownership across the developing countries, there are prominent examples of DFS significantly improving the access to financial services. In India, for example, the share of adults with an account more than doubled to 80 percent between 2011 and 2017. In many developing countries, DFS has emerged as a powerful instrument for last-mile banking facilities taking advantage of the growth in mobile financial services (MFS). Twenty-one percent adults in Sub-Saharan Africa held a mobile money account in 2017 – up from 12 percent just three years ago, when such accounts were concentrated largely in East Africa but since then have spread to other regions.

Bangladesh has also been striving to improve the access to financial services by its millions of adults who have long been outside the formal banking system. Initially, efforts were made in bringing people under the formal financial system by encouraging them to open bank accounts. Then, the Government of Bangladesh, in partnership with other stakeholders, introduced multiple initiatives aiming to promote financial inclusion with the aid of DFS. The country's Seventh Five-Year Plan (FY2016-2020) and the Bangladesh Bank's Strategic Plan 2015-2019 both emphasized financial inclusion as a means for broad-based economic growth and poverty eradication. To advance its financial inclusion objectives, the government established a dedicated department within the central bank, articulated regulatory guidelines for mobile financial services (MFS), and launched a mandatory mobile phone SIM card reregistration campaign. The overarching policy objective of 'Digital Bangladesh' for delivering government services to the citizens through the widespread use of technology has also helped spread DFS.

The rapid growth of mobile cellular phone usages in Bangladesh in conjunction with the government's regulatory changes allowing banks to establish regulated subsidiaries offering financial services through mobile phones has made it possible for MFS to become an important means of promoting financial

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[1] This is based on the information provided in the Global Findex Database. Since account ownership in high-income countries has been nearly universal, the growth in account ownership is mostly due to developing countries alone. The Findex database defines account ownership as having an individual or jointly owned account either at a financial institution or through a mobile money provider.

inclusion. MFS that can be accessed through cheapest feature phones with unstructured supplementary services data (USSD) facilities have encouraged many poor people in remote areas to open basic transaction accounts. Between 2011 and 2017, the financial inclusion in Bangladesh – as measured by the World Bank's Global Findex – rose from 32 per cent to 50 per cent. Although behind many of its comparators such as India, Kenya, Sri Lanka, etc., it can be inferred that the above-mentioned improvement in financial inclusion in Bangladesh would have taken almost two decades in the absence of DFS.[2] In 2019, MFS transactions in Bangladesh accounted for $51.1 billion with such transactions almost doubling over the past three years. There are approximately 80 million registered MFS accounts, with the number of users making transactions at least once a month is around 25 million. At the grassroots, almost 80 percent of the population now have a financial access point within 1 km of their home. Survey data suggest two-thirds of the population below the per capita daily $2.50 poverty-line are MFS users (FII, 2019).

Another big policy push for promoting financial inclusivity through DFS was the reform initiative undertaken to transfer the government to person (G2P) payments directly to beneficiaries using either their bank or MFS accounts. The National Social Security Strategy, adopted in 2015, envisaged direct transfers not only to help promote inclusion of the poor and marginalised people into the formal financial channel but also to pave the way for their access to various financial services like savings schemes, loans, insurance facilities, etc. It would also prevent leakages, simplify administrative procedures dealing with transfers, and reduce welfare payments delay. With the wider availability of e-transfers and mobile cash transfer services across the country, the G2P payment offers a much better and effective alternative to traditional cash transfer systems.

Bangladesh has also made advances in DFS infrastructure. This is reflected in building a vast digital identification (ID) database, establishing an electronic know your customer (e-KYC) ID verification system, and setting up payment system to facilitate transactions among the primary banking institutions. These are already playing an important role for digital financial inclusion. However, this paper argues that the existing infrastructure for DFS can exert further benefits through their suitable upgradation and by making the payment systems integrated and interoperable. This in the process can also streamline and strengthen the digitization and delivery of G2P payments. In particular, this paper focuses on three key pillars of the DFS ecosystem, i.e., identity, payments and regulations and highlights the scope of improvement in each of these of areas that can further enhance inclusivity, improve delivery of services and promote innovations benefiting the customers.

II. IDENTITY INFRASTRUCTURE FOR DIGITAL FINANCIAL SERVICES

- **Digital ID system and its importance**

A well-developed ID infrastructure can play an important role in financially inclusive development. A unique identity helps individuals to access basic services and entitlements including healthcare, social protection benefits, etc. A robust ID system should be non-exclusionary while protecting personal information and responding to the needs of individuals as well as different public and private sector institutions. The importance of a unique legal identity system has been emphasized in Sustainable Development Goals (target 16.9), calling all UN member states to provide legal identity for all citizens.

A variety of ID systems are in operation. Some of these are foundational ID systems such as population registers and national IDs, birth certificates and passports while others are functional for specific purposes, for example, voter registers, social protection registers, tax IDs, driver's licenses, property

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[2] The existing literature on the relationship between growth and financial inclusion is diverse. Data on 43 African countries suggest, for every 5 per cent GDP growth, financial inclusion grows by 0.96 per cent ((Evans & Osi, 2017).

and land registers, etc. The starting point for any operational and secured digital financial system is a robust and comprehensive identification infrastructure. As countries around the world including Bangladesh are increasingly relying on digital infrastructure to deliver essential public and private services, foundational digital identification has become critical to access them.

The primary factor for financial inclusion in many countries is to have access to a basic financial account – either with a bank or non-bank formal financial service provider. Financial institutions and service providers need to carry out a proper Customer Due Diligence (CDD), which can be efficiently done by using digital identity platforms. The objective of such verification, authentication and record-retention of new customers is to prevent, amongst others, identity theft, financial fraud, money laundering, and terrorist financing. A digital ID system fulfils the CDD requirement within the shortest possible time and also happens to be cost-effective.

- **Existing ID system and DFS in Bangladesh**

In Bangladesh, the central system of identification is the National Identification (NID) Number. Although there are instruments such as birth certificates and passport issuance numbers, the NID has become the single most important medium of verified identification. The National Identity Registration Authority Ordinance 2008 states that the voter identity cards provided by the Election Commission will be considered as national identification cards. The Election Commission has developed a central electronic database with all the relevant information of citizens along with their photographs, signatures and biometric data. The Commission updates the list of voters (national identification list) periodically, and the most recent list (2020) has gathered data for Bangladeshi nationals aged 16 years and above. As of March 2020, 109.8 million adult citizens were registered in Bangladesh's national ID database (Bangladesh Election Commission, 2020).

According to the World Bank ID for Development database, about 32 percent of the Bangladesh population is not registered in the national ID system, of which 49 percent are female. The same data suggest that 8 percent of the population above the cutoff age of 18 years are not included in the national identification database.

There are provisions for the population outside the national ID database to get registered in the system. Anyone can apply for NID registration in Upazilla Election Commission Offices by submitting relevant documents and validating a proper reason for missing the registration. Bedsides, this paper-based application process, any individual of age 16 or above can apply for NID registration online.[3] These two methods can also be used by any citizen to address erroneous information on their existing NIDs.

Bangladesh's national identification process became digitized in 2016 with the introduction of smart cards. These cards hold unique biometric information (fingerprints, iris, and other relevant personal data) of individual citizens along with the conventional identification information. The government's push for NID digitization has been a catalyst for spreading digital financial services (DFS). Mobile financial services (MFS), agent banking, e-wallets, etc. – all are components of the DFS infrastructure. Currently, 16 companies are providing mobile financial services through more than 380,000 MFS agents. Value of daily MFS-based transaction has more than doubled (from just around $100 million to above $202 million) between December 2016–October 2020. And the number of unique MFS account holders have tripled to almost 5.3 million during the same period.[4].

From the perspective of financial inclusion, a unique and universally accessible digital ID system can be used for real-time identity verification and cost-effective customer onboarding through e-KYC

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[3] Anyone can apply using this website https://services.nidw.gov.bd/.

[4] Information obtained from the Financial Express, March 13, 2020. https://thefinancialexpress.com.bd/views/the-dfs-ecosystem-in-bangladesh-1584113440 and https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php

(electronic know your customer) mechanisms to open financial accounts. As part of simplifying documentation requirements for digital financial services, Bangladesh introduced the e-KYC system in the beginning of 2020. For DFS/MFS providers, maintaining conventional KYC and CDD practices used to be difficult due to improperly registered mobile phone SIM cards, lack of identification documents and absence of ID verification tools. Now, the ICT division manages the "Porichoy" portal, which is connected to the Election Commission (EC) NID database, enabling public and private organizations to verify the NID cards of their potential customers for a small fee. If verified, all necessary information of the KYC is automatically filled with both the customer and agent being notified about the opening of the new account through encrypted SMS services.

Not only e-KYC resolves the issue of ID verification, it also eases the account opening process of the population with a limited educational background. This helps reduce cost and time during enrolments. Pilots undertaken to establish e-KYC show that the cost of customer onboarding is reduced 5–10 times and the growth of the client base achieved at around 25 per cent in comparison with the traditional onboarding and KYC methods (BFIU, 2020). The e-KYC system saves onboarding time from 4–5 days to just 5–6 minutes. This drastic reduction of onboarding costs incentivises financial institutions to serve previously unbanked consumers with small revenue streams. At the same time, the system has potentially empowered millions of unbanked citizens with options like self-registration/self-opening of financial accounts. However, for the people excluded from the NID database and/or without a registered sim card, financial inclusion remains a problem.

While e-KYC has been hugely successful in onboarding low-value accounts using the digital NID data, Bangladesh's ID infrastructure needs upgrading. A section of the adult population, as mentioned earlier, is excluded from the database. Furthermore, there are also issues about the quality of data. For example, many people born before the early 2000s' do not have birth registration certificates and many senior citizens do not know their actual birthdates.[5] As a result, the NID registration of many citizens has been conducted with a guesswork. In addition, there have been many cases where NIDs have been issued with wrong addresses and wrong/misspelled names. These problems have some consequences for the social security system. It has been found that many elderly citizens are not eligible for the old age benefit scheme due to wrong date of birth on their NIDs. The same problem has also made non-eligible people to receive the support (Razzaque et al, 2020 a). While there are options to address these problems, many poor and vulnerable people either are not aware of those or do not find those accessible.

- **ID infrastructure and digitised G2P delivery for social security schemes**

Digital ID can be utilised to make direct G2P payments for social security programme beneficiaries. Direct G2P transfers can significantly reduce administrative and time costs while ensuring efficiency, accountability, and transparency of the social security system. A safe and accessible digital ID infrastructure can reduce the exclusion of beneficiaries and reduce possible leakages associated with transfer payments. Mapping the digital ID to the eligibility record of citizens in social benefit schemes can avoid the problem of duplication of beneficiaries (World Bank, 2018).

Bangladesh adopted a National Social Security Strategy (NSSS) in 2015 with the objective of undertaking, amongst others, three major institutional reforms: (i) strengthening the digital G2P systems that promote financial inclusivity; (ii) developing unified single registry management and information system (MIS) for social security programmes (SSPs); and (iii) strengthening the processes for selecting benefit recipients. Implementation of each of these reforms is dependent on having and making use of a robust ID system. Many beneficiaries and potential recipients remain unregistered in

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[5] Birth registration documents are now mandatary for enrolling in primary education and they can be used as proxy of NID for minors or adults who do not have NID.

the NID database while some have not been able to preserve their identity cards and now find it difficult to obtain replacements. As mentioned above, there is evidence of improper documentation of age leading to targeting errors in the old-age benefit scheme. Until now, only a few SSPs have operationalised fully digitised G2P system, in most cases using preselected MFS providers. Many ministries are yet to convert their beneficiary lists into required digital format while most of them are operating on separate platforms instead of an integrated database.

Identifying the people who are eligible for social security benefits remains a major challenge for the policymakers. The mid-term implementation of the NSSS suggests that the exclusion error – defined as the number of eligible people not covered as a proportion to the number of all eligible individuals – estimated from the National Household Income and Expenditure Survey 2016 is a staggering 71 percent. On the other hand, the inclusion error – defined as the ineligible recipients as a proportion to total programme recipients – is estimated to be 46.5 percent. The resources wasted due to these errors could be used to lift an additional 10.7 million people belonging to 2.6 million households out of poverty (Razzaque, et al., 2020 b). Several reform activities are currently underway to streamline the SSP beneficiary selection process. The Finance Division, Ministry of Finance, has designed a single social registry MIS system that would integrate all individual SSP MIS into a central platform – known as the Single Registry. Using digital ID (NID) in integrating beneficiaries from separate registries to one comprehensive list can facilitate the process. This should also help tackle the problem of leakages due to any duplication of beneficiaries in the list. In the process of compiling the beneficiary list, persons without NID can be identified and assisted to bring them under NID coverage. It is estimated that 8–10 percent of social security beneficiaries either do not have NID or are yet to access their smart cards with biometric information (Baur-Yazbeck & Roest, 2019). On the other hand, potential beneficiaries who do not possess NID should also be brought under registration.

The NSSS suggested establishing a National Household Database (NHD) incorporating proxy means test (PMT) scores for ranking households based on their income and asset ownership status. Once ready to use, all ministries can use PMT scores in cross validating the eligibility of the recipient household. The NHD is yet to be made operationalized to support the selection process. There will also be the need for updating the NHD database on a regular basis as household/individual economic situations change over time. Otherwise, the PMT constructed for one particular year will soon become obsolete to be used for targeting mechanisms.

Until now, only a handful of ministries have been successful in preparing digitized management information systems. A notable example is due to the Employment Generation Programme for the Poorest (EGPP) scheme, run by the Ministry of Disaster Management and Relief (MoDMR).[6] The Ministry of Women and Children Affairs (MoWCA) allows new users/potential beneficiaries to apply online. Amongst others, the Ministry of Social Welfare has established its MIS partially for three of its largest programmes, viz. old age allowance, programme for the widow and destitute women, and disability benefit programme. Amongst others, the Ministry of Liberation War Affairs and the Ministry of Fisheries are updating and digitising their respective beneficiary lists, while the Ministry of Primary and Mass Education (MoPME) has prepared a database of primary school stipend recipients. Most ministries do face problems in maintaining and updating the MIS because of capacity constraints and various administrative issues. Overall, the G2P for SSP implementation experiences thus provide some important insights and lessons for improving identification documentation for direct transfer to beneficiaries.

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[6] The MIS and beneficiary list for this project can be accessed from here:
http://mis.egpp.gov.bd/Reports/Beneficiary/PrintBeneficiaryList.aspx

- The registration process of different social security programmes can be made easier if the beneficiaries only required the NID number and the Election Commission provided access to data for cross-validation while ensuring security of its database.
- Coverage of NID should be made universal. For minors and non-adult citizens, provisional ID registration can be introduced which can be later updated when they apply for the smart card as adults.
- Having access to the smart card broadens the horizon for beneficiaries, while access to the database with biometric information generates strong benefits to the service providers.
- A comprehensive and regularly updated NHD database backed by NID and connected with the single registry MIS is required to overhaul the beneficiary selection and enrolment processes.
- To upgrade and digitise conventional spreadsheets and database, government agencies and ministries require better information sharing, shared MIS resources, and coordination.

III. INTEROPERABLE DIGITAL FINANCIAL SERVICES FOR A GREATER IMPACT

Availability and adaptation of technology means the past decade has seen a significant transformation of the digital payment systems. A payments infrastructure encompasses such elements as the underlying ICT system, governance regulations, membership guidelines, operating procedures, risk management and business rules including pricing of payment services. A national payment system (NPS) controls how participants at all levels — from individuals to financial institutions to government agencies to international participants — exchange value within an economy and across national borders. When the NPS is developed up to the stage, facilitating seamless transactions across various digital and conventional platforms, financial interoperability is achieved.

While DFS and mobile wallets have contributed towards achieving greater financial inclusion in the developing world, the interoperability of payments system has emerged as a new frontier for service providers, fintech experts, and regulators. Countries have been able to establish DFS with various degrees of interoperability with further experiments and developments continuing to take place. In DFS, interoperability stands for the ability of separate financial payment mechanisms or systems to connect and complete transactions seamlessly among themselves. This reduces transaction costs by clearing the need for intermediaries. It helps consumers perform universal transactions and payments seamlessly regardless of service provider. Regulators and policymakers opt for interoperability for its potential for greater financial inclusion of the poor and marginalised (Arabehety, et al., 2016).

- **Stages of interoperability and Bangladesh's situation**

One could consider four broad stages of interoperability. The first usually involves transactions among the primary banking institutions. Apart from conventional cheque clearing methods, Bangladesh introduced the National Payment Switch (NPSB) in 2012. In addition, the emergence of Electrical Fund Transfer Network (EFTN) and Internet Banking Fund Transfer (IBFT) have helped develop interoperability in the country beyond ATMs and POS machines.

Bangladesh has just started the second stage of interoperability which allows transactions among different DFS providers.[7] Currently, a few MFS providers are under a central bank regulated network facilitating transactions between themselves. With the upcoming upgrades of the NPSB, more MFS providers are expected to join the network by 2021. The third stage involves interoperable payments between banking institutions and DFS providers, implying that consumers can carry out transactions between their bank and MFS accounts. In Bangladesh, some preliminary progress has been made in this respect (e.g., mother banks and their MFS subsidiaries became operational in 2019). The central

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[7] In 2019, BRAC bank incorporated a system, which allowed customers to send money to bKash and Rocket accounts using internet banking facility.

bank is trying for the advanced level of third stage interoperability through NPSB. The fourth and final stage involves complete interoperability among all financial platforms within an economy. At this level, an individual with a single financial account (DFS/mobile wallet/conventional bank account) can do transactions across the economy. Major infrastructural difference between the third and fourth stages is the medium that makes interoperability feasible. The third stage is based on the supplier specific payments gateways or switch mechanisms. While this offers a wide range of services, users are often required to maintain multiple accounts or applications for separate transactional purposes. On the contrary, the fourth stage is based on a universal/unified payment gateway/platform connecting all financial institutions. This allows for improving customer convenience as they can use a single account for all transactions while enjoying the freedom of choosing any service provider. With fewer intermediaries, a complete interoperability is most effective in reducing transaction costs.

- **Important factors to ensure interoperability**

Three major components have been identified for the facilitation of financial interoperability (Arabehety, et al., 2016). These are (i) technology adaptation; (ii) developing a business model; and (iii) governance and regulatory factors. To develop an adequate level of financial interoperability, all three components need to be properly addressed.

When technology becomes a barrier for market participants, intermediaries arrive to help overcome the constraints. Historical assessments of the financial system suggest that interoperability for conventional banking services is 'scheme-based' and banks join pre-defined payments services and pay the charges associated with such services as utility fees (Benson & Loftesness, 2013). For DFS, the scenario is quite different and defined by a range of factors. In some countries, the primary technological framework is developed or approved by central banks (e.g. NSPB of Bangladesh). The MFS providers join in such systems with other financial institutions to provide interoperability. In countries where the central system is non-existent, service providers rely on bilateral or multilateral agreements among themselves to develop partial interoperability.

The next factor of developing a business model or commercial feasibility of interoperability is something unique for DFS. The model of interoperability has to be profitable enough for MFS providers, mobile network operators (MNOs), payment service intermediaries, and retail agents. At the same time, the system itself must provide adequate incentives to users in order to maintain an active and sizeable customer base. In the conventional banking sector, financial services communicate with each other in secured mechanisms (scheme-based, network-based, or parallel system) by default to ensure interoperability (Benson & Loftesness, 2013). However, the same cannot be said for MFS providers as MNOs are connected in the system. Therefore, service fees or profit-sharing with MNOs becomes the default option. Just like elsewhere, Bangladeshi MFS providers are also required to pay the MNOs for using their networks. As it stands, MFS providers can charge up to 1.85 per cent of the transaction value as fees. Until June 2019, MFS providers used to share 7 per cent of their profits with MNOs. However, under new directives (BTRC, 2019), the profit-sharing model was annulled, and the industry moved towards the "as per usage" model. For each 90-second transaction session of unstructured supplementary services data (USSD), MNOs can charge specific amounts (Box A).[8] Another significant portion of the service charges goes to the payment gateway providers (often more than one per transaction), which depends on the bilateral arrangements between the respective parties.

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[8] Unstructured supplementary service data (USSD) is communications service controlled by MNOs. In developing countries, where access to internet is either limited or too expensive for vast majority, USSD is the key mechanism for MFS transactions. Main reason behind using USSD is it enables providers to transfer authenticated information at a low cost and they can be sent via any mobile network which will be more secured than SMS. As access to internet becomes cheaper, the significance of USSD in MFS transactions may decline in the future (Hanouch & Chen, 2015).

Type of service	Charge of MNOs (for every 90 seconds)
Revenue generating transactions	0.85 Tk
Non-revenue generating transactions	0.40 Tk

- MFS providers will be charged for unsuccessful USSD transactions that have failed because of the issues that are not caused by the MNOs.
- List of revenue and non-revenue generating transactions are pre-defined by the BTRC.
- Each successful transaction will include two SMSs.
- Fees mentioned above are not applicable for airtime purchase/mobile balance recharge. Those fees or commissions are to be dealt through bilateral agreement between MNO and MFS providers.
- No fees will be required to check MFS account balance.

Source: Based on BTRC (2019).

Even with advances in peer-to-peer mobile payment technologies through digital applications, retail agents continue to be the backbone of DFS infrastructure in a cash-based economy like Bangladesh (Pelletier, et al., 2014). Retailers bear the primary risk of managing cash at outlet points till depositing them into a bank. Therefore, MFS providers need to ensure the profitability of retailers. As a result, they charge as high as Tk 20 ($0.24) to cash-out per Tk 1,000 (approximately $12). Cashing-out costs are higher in such comparator countries as Kenya, Pakistan, Tanzania, and Uganda than those of in Bangladesh (Figure 1). In conventional banking terms, the associated transaction costs are extremely high (FID, 2017). As profits are squeezed among various parties, ensuring interoperability in the absence of a centralised system leads to a further breakdown of the existing margins.

Figure 1: Fees paid to the retail agents for cashing out US$10
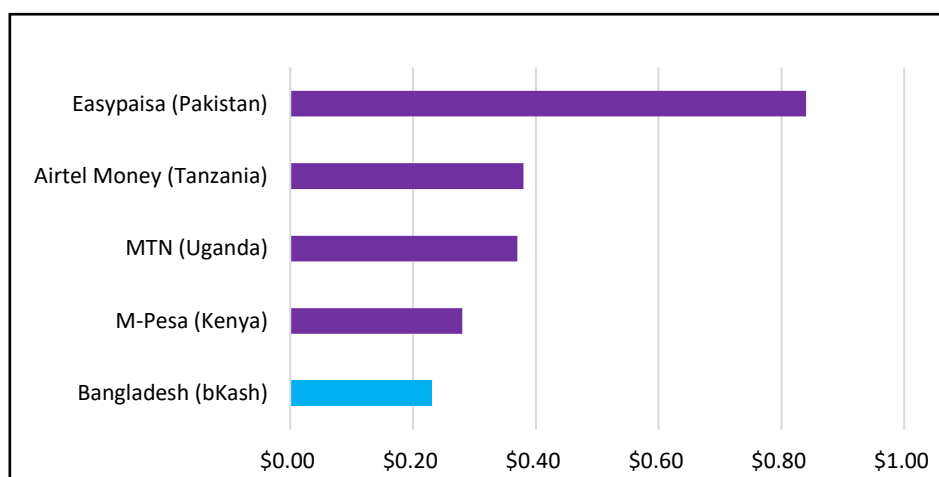
Source: Authors' presentation based on official fees charged by individual service providers

When the profitability for interoperability is considered, the existing model of MFS business and market dynamics are major inhibiting factors. Despite the size and huge underlying potentials, the growth in the Bangladeshi MFS market, until now, has mainly been fuelled by mass inclusion of large segments of the unbanked population. However, the innovation in the ecosystem has been quite slow. Cash-in, cash-out and P2P transactions account for close to 94 per cent of all transactions, and revenue generation is highly reliant on the first component. Under these circumstances, any MFS provider seeks to ensure a pool of consumers or money within its revenue generation model and outward transactions mean the wherewithal of resource generation is going out of their system. Therefore, major MFS providers are reluctant about interoperability, while smaller entities are more interested in making it

happen. It has been argued that the concentrated MFS market in Bangladesh limits the demand for interoperability as most consumers have an account with the dominant most service provider (Mujeri & Azam, 2017).

- **Interoperable Digital Transaction Platform**

The Interoperable Digital Transaction Platform (IDTP) is a platform service for interoperability in the financial sector set for the future. The Application Programming Interface (API) of IDTP will be used by fintech entities to make financial transactions, transfers, e-commerce, bill payment, merchant payments, remittance exchanges, etc. Bangladesh Bank has signed an agreement with the Department of ICT of GOB to develop IDTP in 2020. If implemented properly, IDTP will create a bridge of transactions between various payment service participants, such as customers, merchants, MFS providers, banks, and payment system operators. Through IDTP, Bangladesh Bank wants to achieve MFS-MFS interoperability by mid-2020 while for interoperability of MFS to any banks is anticipated to be completed by early 2021.

- **The potential impact of Interoperability**

It is of interest to know the potential impact of economy-wide financial interoperability. However, the quantification of impact is not an easy task. Generally, it is recognised that interoperability offers benefits to consumers, businesses and the economy (CGAP, 2019). Given the scale of the market, it can help reduce transaction costs and increase efficiencies through shared infrastructure. Interoperability can greatly enhance financial inclusion as it allows an individual with any bank or DFS account to access all platforms reducing the need for managing cash. It also helps the government as it can save on printing cash without compromising financial liquidity in transactions (CGAP, 2012). It has been reported in a 2008 study of interoperability in Latin America by the World Bank Payments Systems Group that interoperability in Brazil could result in a saving of 0.7 per cent of GDP (IFC, 2015). Furthermore, there has been evidence of a 1-per cent increase in card usage translates into an average GDP growth of 0.24 per cent across a sample of 51 developed and emerging countries.[9]

Beyond quantitative assessments, the potential benefits of full interoperability are well known. It maximises consumer convenience as economywide transactions are possible with a single account. Not only can customers conduct payments using multiple channels (card, internet, USSD, etc), they can also enjoy simplified payment processes through the use of aliases (single payment address), QR codes and personal choice of smartphone applications.[10]

Interoperability can enhance competition amongst DFS providers, promoting them to offer innovative and better services to their customers. This, in turn, can promote financial inclusion (Baur-Yazbeck & Roest, 2019). Bangladesh's current mechanism of G2P transfers for social benefits requires beneficiaries of various schemes to open accounts with a specific MFS provider preselected by the concerned ministry. In the absence of interoperability, it generates a captive customer base for service providers. On the other hand, the user-centric freedom of choosing a preferred platform removes the necessity of opening multiple accounts. Therefore, rather than only vying for being a hand-picked service provider of delivering G2P transfers to locked-in customers due to a specific social safety net

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[9] Zandi, M & Singh, V. (2010). The Impact of Electronic Payments on Economic Growth. Moody's Economy. Obtained from: http:// betterthancash.org/wp-content/uploads/2012/09/Moodys-WhitePaper-March-2010-Cards-contribute-to-GDP.pdf

[10] This stage has been achieved in India through the three-layered stack system where individuals require only one payment address in any designated financial institution; vendors can use a single recipient point using only one QR code regardless of the service provider; and customers' choice of smartphone application to be used in transaction does not rely upon his/her respective banking institution.

scheme, MFS/DFS providers under interoperability will compete for wining customers through better quality and innovative products and services.

In fact, the issue of letting SSP beneficiary choose their preferred MFS/DFS provider has long been considered in Bangladesh. Thus, the Social Protection Budget Management Unit-MIS (SPBMU-MIS) was envisaged with the objective of integrating all MISs of different line ministries. Through SPBMU-MIS, the identification of the beneficiaries would be validated once more. The SPBMU MIS is linked with Bangladesh Bank's Integrated Budget and Accounting System (iBAS++). Once the budget for any programme is ready for disbursement, the money should be directly channelled to beneficiaries. This step is important because it removes intermediaries, even within the formal banking channel thereby saving transaction costs. When properly implemented, funds can be directly transferred from the treasury to individual account without requiring an intermediary commercial bank holding the money before beneficiaries have withdrawn it. According to this architecture, the recipients have complete freedom to choose the mode of receiving the allowances. The options include direct transfers to MFS/bank accounts or receiving payments through post offices. Bangladesh Bank's direct delivery of G2P transfers along with achieving a complete interoperability will be a major catalyst in making digital financial services more effective and fostering financial inclusion.

Interoperability is not without risks, however (IFC, 2015). The system involves complexities at technical, commercial and operational levels that need to be managed jointly by the participants. There is also the cost of technology adaptation which includes developing the universal payments gateway. Although in some countries this initiative has been taken by private entities, it is being developed as a public good in Bangladesh. Banks and MFS providers will have to upgrade their internal systems to connect with the gateway. The involved costs can generally be recouped without much difficulty given that access to a universal gateway overcomes the need for intermediaries, thereby reducing some of the transaction costs. Interoperability can also lead to greater competition among service providers, thereby resulting in more cost-effective transactions for users. It could potentially open the doors for new services such as insurance, microcredit, and credit that cannot be accessed without conventional banking operations in Bangladesh. Therefore, potential gains from economy-wide interoperability are massive and it is likely to enhance the overall economic efficiency of the financial system.

IV. The role of regulations in promoting DFS

The emergence of mobile financial services has created an unprecedented demand for prudent and proactive regulatory practices (Perlman, 2018). The DFS regulatory framework is a complex architecture given that there can be several public entities (e.g., central banks, and microfinance and telecommunication regulators) with competence and scope for regulating cross-cutting aspects of mobile banking. The situation is often further complicated as some DFS providers cannot be strictly defined within the existing legal framework and require different treatments from traditional banking institutions or NBFIs (Malady, *et al.* 2018).

Bangladesh's MFS growth until now has largely been due to the millions of traditionally unbanked people using their mobile phones in sending money with the G2P social security disbursements contributing to it. After this initial growth, the market demand for developing new digital financial services is on the rise. In this backdrop, the role of regulatory policies is now more important than ever in strengthening DFS activities and to help foster the much-required innovations to extend the range of services to customers.

- **Key regulations for DFS in Bangladesh**

As per the Article 7A(e) of the Bangladesh Bank Order (1972) and Section 4 of Bangladesh Payment and Settlement Systems Regulations 2009, Bangladesh Bank issued an MFS guideline in September 2011.[11] This guideline rules out the option for non-bank financial institutions, multinational entities as well as cellular phone network providers to operate or initiate MFS activities. All MFS providers were to be listed as subsidiaries of banks. NGOs, mobile network operators (MNOs), and postal services were allowed partnering up with banks to provide agents or retail points for MFS. Apart from introducing the bank-led model of MFS, the 2011 guideline also provided specific regulations about prohibiting cross-border transactions, transaction limits, service charges, interest rate charges, anti-money laundering compliance, risk mitigation measures, record retention policies, grievance redressal, and security issues. Amended several times, the guideline allowed freedom to exercise interoperability between customers' mobile and bank accounts (of the same bank only), as well as transactions between service providers affiliated to different banks. By issuing the *Bangladesh Mobile Financial Services (MFS) Regulations 2018*, the Bangladesh Bank replaced previous guidelines and amendments.[12]

The 2018 regulations provide detailed definitions of MFS, MFS products, operational modalities, and various other issues (Box B).[13] Major changes and clarifications have been related to the bank-led model of MFS, which requires a parent commercial bank to hold at least 51 per cent share. The parent bank may own the full operation of the MFS subsidiary or form partnerships with other banks or non-bank financial institutions, fintech companies, and NGOs with experience of working in the financial market except MNOs.

Box B: Highlights of the Bangladesh Mobile Financial Services (MFS) Regulations, 2018

- Only the bank-led MFS model allowed, where parent banks must hold at least 51 per cent in equity. NBFI, fintech, NGOs or national/international entities with experience of working in financial market can be equity partners.
- Mobile Network Operators (MNOs) are not allowed to take part in MFS ownership. But they can remain intermediaries/ distributors in the service delivery chains.
- Two or more banks can jointly form an MFS subsidiary, but ownership in more than a single subsidiary is not allowed.
- Under all circumstances, MFS providers are prohibited to lend from their own funds.
- MFS providers can only act as agents of banks/NBFI (regulated by the Bangladesh Bank) and NGO/microfinance institutions (licensed by the Microfinance Regulatory Authority) in disbursing loans or accepting repayments on behalf of the concerned principals.
- Account holders are free to mobilise funds from MFS accounts to deposit accounts at commercial banks.
- Agents are not allowed to take part in any transactions other than cash-in/cash-out.
- MFS providers must follow the ICT act 2006 and the Bangladesh Bank 2010 ICT guideline for banks to ensure security. In addition, the system will include critical properties such as *Authorisation, Confidentiality, Integrity* and *Non-repudiation*. **Error! Bookmark not defined.**
- Greater emphasis on MFS subsidiaries/parent banks to design their systems in fostering highest possible level of interoperability (including MFS-other MFS, MFS to deposit accounts, MFS to parent banks as well as other banks).

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[11] This can be found from the Department of Currency Management and Payment System (DCMPS) Circular No. 08 /2011.

[12] Full regulation can be found at Payment Systems Department Circular No 04/2018: https://www.bb.org.bd/mediaroom/circulars/psd/jul302018psdl04e.pdf

[13] According to the official definition, MFS refers to E-money services provided against a particular mobile/cell phone number of a client (termed as mobile account), where the record of funds is stored in the electronic general ledger. These services can be drawn down through specific payment instructions to be issued from the bearer's mobile phone or through alternative digital process or device by ensuring authenticity of the transaction. However, unlike e-money products, 'cash-in' and 'cash-out' and other services, as permitted by Bangladesh Bank at agent locations, are allowed for MFS accounts.

- **The issue of a dual regulatory framework**

One of the most striking features of Bangladesh's DFS regulation is the existence of a dual regulatory framework. The Bangladesh Post Office (BPO), which is a service entity of the Ministry of Posts, Telecommunications, and Information Technology (MoPTIT) and regulated by the Bangladesh Telecommunications Regulatory Commission (BTRC), runs an MFS named Nagad, which is not subject to any regulations set out by the Bangladesh Bank. This is because the *Post Office Act 2010 (Amendment of the 1898 Act)* and the *Post Office Act 2018 (draft)* enable the BPO to undertake national and international electronic money transfer services (EMTS). It defines EMTS as a money order sent via "mobile phone" or "mobile technology". EMTS can be used for all financial transactions including (but not limited to) the provisions for social security programmes, disbursing wage-salaries, payment for e-commerce and any other payments that can be done through cash money. The BPO started e-money transfer in 2010 and launched its own MFS services (jointly owned by Third Wave Technologies) in 2019.

Therefore, while the central bank is the apex regulatory body for all financial institutions and any entity operating in the financial or monetary field, Nagad uses a separate legal framework to remain outside of Bangladesh Bank's regulations. This leads to varying provisions for Nagad and other MFS providers. For example, Nagad started off with a higher daily and monthly transaction limits (Table 1). The Bangladesh Bank raised the transaction limits from 20 May 2019 onwards. In March 2020, the Bangladesh Bank increased the transaction limits further to Tk 200,000 per month in response to the Covid-19 crisis. Still, the new limits remained much lower than the those enjoyed by Nagad, which also does not have to maintain Bangladesh Bank-specified standards on authorisation, confidentiality, integrity, and non-repudiation. Given its unique origin within the Bangladesh Post Office, Nagad is often seen as an entity using public resources and infrastructure for operation and promotional purposes that are not available to others in the market. In April 2020, Bangladesh Bank issued a temporary no-objection certificate for Nagad's operations initially for a six-month period.[14] Later, the same status was extended further. As it stands, Nagad has been given time until the end of June 2021 to fulfil the conditions of the central bank to become a full-fledged mobile financial services provider.

Table 1: Transaction limits for Nagad and other DFS providers

Transactions	DFS providers (January 2017-May 2019)		Nagad		Other DFS providers (Since May 20, 2019)		COVID-19 special response (Not applicable for Nagad)
	Daily limit	Monthly limit	Daily limit	Monthly limit	Daily limit	Monthly limit	Monthly limit
Cash-in	15,000	100,000	250,000	500,000	30,000	100,000	200,000
Cash-out	10,000	50,000	250,000	500,000	25,000	75,000	200,000
Send money	10,000	25,000	250,000	500,000	25,000	75,000	200,000
Maximum transaction	2	20	5	25	5	25	25

Source: Based on official information from Nagad and other DFS providers

Notwithstanding the pitfalls, Nagad has brought some competition to one of the most highly concentrated MFS markets in the world. The services and innovations offered by it are good for consumers, at least in the short and medium-term. It is the first MFS in Bangladesh to introduce E-KYC, which perhaps pushed the Bangladesh Bank to come with E-KYC guidelines. Apart from offering a

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[14] Further information can be found here https://www.dhakatribune.com/business/2021/03/16/nagad-gets-three-more-months-to-win-full-bb-licence.

competitive rate on basic transaction services, it offers the highest interest rate on savings (7% per annum for a sustained deposit above Tk 5,000) among MFS providers.

Nagad's way of operation has important implications for the overall DFS ecosystem in Bangladesh. The relaxed regulatory provisions for it have put other service providers in a disadvantageous position. Recent attempts to align Nagad's operation with BB guidelines is a move towards the right direction. But until it achieves proper MFS license from the Bangladesh Bank, competition will remain uneven for the rest of the providers. Therefore, to ensure a healthier DFS ecosystem in Bangladesh, it is imperative that all service providers are held accountable against same regulatory standards.

- **Key regulatory issues for improving the DFS ecosystem**

a) Ensuring the singularity of regulation: As can be inferred from the above, ensuring a common regulatory system will be extremely important. Apart from ensuring fair competition, it will set a standard for future entrants. Consider a hypothetical situation where a global technological brand (e.g. Google Pay) wants to operate in the financial market of Bangladesh. This is a DFS provider, which should be regulated by the Bangladesh Bank. However, Google or any other internet-based technology brand's operation in the country is only regulated by the BTRC. As a result, it will generate further obstacles in ensuring a level-playing field for competition in the DFS ecosystem.

While it would ideal and practical to have a single regulator, there could be contexts for splitting responsibilities between different regulators. As technological giants are unanticipatedly evolving to offer financial services, it may not be possible to regulate them through a single entity. Therefore, in financial services regulations, Bangladesh could alternatively focus on the concept of "same business, same risks, same rules." This means that regardless of licensing origin, firms that engage in similar businesses with similar risks must be subject to same regulatory standards. Doing so may help to prevent providers and entrants from "shopping" for the regulator with the least stringent rules (or regulatory arbitrage).

b) Introducing regulatory sandboxing: Regardless of various developments and efforts, basic transactions have remained the primary revenue-generating component of DFS in Bangladesh. Therefore, there is a need for developing DFS-based innovative financial services rather than simply concentrating on governance and legal frameworks (Buckley & Malady, 2015). To support innovation and novel fintech models of business, local regulatory bodies require agreeing upon a single 'regulatory sandbox'. This can help regulators closely monitor digital products, services and business models in a testing environment while enabling firms to bring innovations to market more quickly and readily. The existing model of DFS innovations is based on case-by-case assessments by the Bangladesh Bank. These assessments require a lot of time and the selection of the cases for sandboxing support can be arbitrary. Lack of regulatory sandboxing also allows for uneven distribution of attention from regulators, resulting in further obstacle against competitive market practices.

So far, innovative services related to G2P or DFS have been limited. MFS providers are yet to develop a system that can fully substitute extended savings facilities offered by the conventional banking sector. Most G2P recipients cash-out their allowances within 1–3 days of disbursements reaching their accounts. Loans through DFS is still not possible due to lack of access to the Credit Information Bureau (CIB) database. In the absence of sandboxing, regulators often use piloting of programmes. While developing and administering such piloting projects require a lot of resources, getting clearance of a pilot can take from six months to several years. Ideally, regulatory authorities should prepare comprehensive and detailed sandboxing guidelines for any service provider willing to introduce new fintech services.

Sandboxing may not be the only solution in this regard. Depending on objective and environment other alternatives can be considered including ad hoc test-and-learn approaches, rule changes, and

regulatory reforms — at least until a proper sandboxing guideline has been set in place (Jeník & Duff, 2020). It needs to be remembered that sandboxing has limitations and require more resources from the regulator than typical supervision. But stakeholder consultations undertaken for this policy initiative found overwhelming support from local experts, service providers, market practitioners and government officials that Bangladesh's DFS ecosystem requires sandboxing to expedite innovative financial services.

c) Service charges for social security related G2P delivery: One key issue that is yet to be settled between the MFS providers and government is the service charges for G2P delivery. The annual cash transfer through SSPs (about $4.5 billion) is just about the monthly average MFS transaction in Bangladesh. However, it is the sizeable market base that a provider inherits by winning an SSP delivery agreement. As there is no fee for delivering G2P of SSPs, the incentive for demanding interoperability is low and all transactional costs are subsidized by the delivery firm. This generates a perverse incentive structure, in which service providers, especially the new entrants, focus on to capitalise the opportunity of being an exclusive service provider of a certain social security benefit scheme. Despite no monetary benefits at all and the need for bearing the transaction costs, MFS firms are ever so keen to become the service providers as it provides them with a ready-made customer base of a considerable size. However, this is not a sustainable business model for delivering G2P social security allowances. In the absence of new services and growth of the sector, case-by-case or tender-based selection of service providers for each SSP results in the accumulation of financial accounts which only remain active during the months of transfer. Ideally, it will be important to achieve a fully interoperable system in which the SSP beneficiaries should be able to choose their preferred means (either bank or MFS accounts) for receiving the transfer.

Designing incentives for G2P delivery is a difficult task. It must consider the interest of the beneficiaries while keeping the providers healthy enough to allow them to cover their costs. In Zambia, beneficiaries pay only cash-out fees for G2P allowances, which is the revenue for providers. In some states of India, the government pays about 2 per cent of the transaction limit to conventional banks for G2P transfers, but for MFS providers, this margin is even smaller (Baur-Yazbeck, Chen, & Roest, 2019). To ensure a swift system, the Government of Bangladesh must take a proactive position to design the incentives and business model for G2P delivery process.

d) Promoting gender-sensitivity in DFS: While DFS is widely perceived as a means for advancing gender equality, the evidence from many developing countries seems to suggest that lack of proactive policy stances could actually end up with an even greater inequality between men and women (Rockefeller Foundation, 2020). Bangladesh is also an example of widening gender gap in financial inclusion and active DFS users. Women are less likely to own a cell phone and the product space for them is extremely limited (UNCDF, 2018). In addition, a big proportion of the women is unable to read messages in English, while financial services in Bengali or with easy graphical directions can only be accessed through the more expensive smartphone-based applications.[15] While more than half of the women accountholders consider female agents to be better service providers, more trustworthy, and more approachable than their male counterparts, just 1 percent of MFS agents are women (World Bank, 2018). In addition to these, there are social norms and structural factors that also discourage women's ownership of cell phones and formal financial accounts including DFS. An econometric assessment utilising country-specific data show that women in Bangladesh is experiencing a large financial inclusion gap despite having identical levels of education, income, labor force participation, and other endowments compared to their male peers (Navis, 2020). This could be due to patriarchal social norms that restrict women's agency, autonomy and social or financial independence.

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[15] According to some female MFS users with language barriers, use of simple emoticons or other graphical presentation in transaction related messages can ease accessibility (Gooley, 2018).

Addressing such multifarious challenges is not an easy task. To improve the product space for women, service providers can be given sandboxing or investment support/incentives. For example, development of health insurance for uninsured pregnant mothers, business loans, microcredit facilities, special services accounting for addressing language barriers (with voice/emoticon) etc. can be supported by the government. To increase the availability of female MFS agents, one possible option could be to use policy directives in engaging a certain proportion of newly acquired agents to be women. In addition, requirements for gender-disaggregated demand-side data collection and sharing rules can be considered to develop specific services and/or generate information for future policy making to promote women's participation.

V. Policy Recommendations

Policy initiatives backed by implementation measures have helped Bangladesh make significant progress in improving access to financial services. The digitalisation of the national identification database and extending its usage to remote ID verification for opening basic transactions accounts either with banks or MFS providers have greatly reduced the cost and time of customer onboarding and made the process quite simple. While all forms of digital transactions are on the rise, it is the rapid expansion in mobile financial services (MFS) that has become the most important driver of financial inclusion in the country. Bangladesh has developed a strong base of financial service providers that include a vast network of MFS agents and agent banking points covering rural and remote areas. There has also been a strong policy push for transferring all social security payments directly to beneficiary accounts. Many of the largest social security payments already target women as beneficiaries and funds for the primary and secondary school stipend programmes are usually transferred to mothers' accounts. These measures significantly improve the financial inclusion of women.

Despite the above-mentioned progress made, there are certain areas where further policy attention is needed to exploit the full potential of DFS in ensuring a high level of financial inclusion including a greater participation of women. Some of these issues are highlighted below.

- **Achieving a full ID coverage, and making the ID system more accessible to beneficiaries of social security programmes**

Bangladesh has provided much of the digital financial infrastructure including the national ID database as a public good, facilitating the growth of DFS. The national identification system was initiated for providing the basis for voters' ID and then was subsequently made available for the purpose of expanding financial services, from which both the service providers and customers have benefited. However, 32 per cent of Bangladeshi citizens (including 8% of adults) do not have a digital ID. As social security benefit payments are being digitalised, all beneficiaries will require their bank or MFS accounts, for which lack of digital IDs could imply not receiving any benefits or not accessing mobile or digital financial services. Therefore, exclusion from the ID database needs to be considered seriously.

- The main policy target should be achieving a full coverage of NID for all national citizens. The Indian experience (popularly knowns as Aadhaar cards that provide universal identification for everyone, including non-adults[16]) could offer valuable insights for Bangladesh in this respect.

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[16] An individual of any age (including new-born and young children) can apply for Aadhaar cards. The enrolment for children is almost similar to that of adults although there will be no biometric data captured for children below the 5 years of age. A child's Aadhaar number will be issued by taking into reference of the parents. However, it will be required for the child upon turning 5 years and 15 years to update their biometrics of ten fingers, facial photos, and iris scan.

- Rural women, elderly citizens, marginal communities, homeless people, members of poor and vulnerable households are more likely to get excluded from the digital identification process. The government can consider establishing a special branch in election commission to encourage and secure continuous registration of these excluded people in the NID database. It will improve the overall inclusiveness of the ID system.
- In addition, beneficiaries of various social security benefits who are yet to be included in the NID database, should be offered a free and mandatory registration in the system. This process can be facilitated through the EC and local government authorities.

- **Introducing an effective and accessible Grievance Redressal System (GRS) for identity infrastructure**

The existence of inaccurate personal information in NID and its consequences including exclusion from social security programmes and/or difficulty in accessing other services that rely on individual identification are well acknowledged. The Election Commission website offers a section where ID related complaints can be lodged online. There is also an option to submit paper-based applications at upazilla EC offices. Similarly, for G2P and other social benefit issues, the government has introduced a central GRS portal to register citizen grievances. Although accessible through the internet and operational, it fails to accomplish the ultimate objective of the beneficiaries' making use of the platform itself. This is reflected in an extremely low number of complaints received through the GRS portal. Rural citizens – mostly women and people from poor, vulnerable and marginalised groups appear to remain excluded in the digitalised GRS process.[17] Several initiatives can be considered to address this issue:

- Along with the online portal, an accessible paper-based conventional mechanism for addressing ID related concerns and inaccuracies should be established and its widespread use can be campaigned at the local level.
- To receive ID related complaints and offer suggestions to the citizens, the EC can set up a separate toll-free hotline. In addition, offering general solutions through popular social media websites can be considered.
- A significant proportion of the population is either unaware of the existence of the GRS mechanism or reluctant to lodge complaints through it as they think the system can hardly help redress their problems. Therefore, awareness-raising campaigns should be undertaken at grassroot levels to popularise the system.
- After carefully reviewing the cases where people report that their information is not correctly captured, the related database upgradation should be undertaken promptly to boost public faith in the overall process.

- **Linking the beneficiary targeting/enrolment to ID and operationalising the National Household Database for addressing errors in beneficiary selection**

One critical issue facing Bangladesh's social protection system is the large targeting errors associated with the beneficiary selection process. This problem can be addressed through the effective use of ID and by developing a social registry of eligible poor and vulnerable households. The National Social Security Strategy (NSSS) suggested establishing a National Household Database (NHD) to incorporate proxy means test (PMT) scores for ranking households based on their income and asset ownership status. Operationalising this database has taken much longer than anticipated. Once ready to use, the line ministries should be able to use PMT scores in cross-validating the eligibility of the recipients in

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[17] According to various key informants and government officials, technological accessibility, limited educational attainment, and lack of awareness are primary reasons for not generating enough response through the existing online GRS portal.

their programmes. Currently, different ministries are using different registries and/or management information system for their beneficiaries. The use of NID number of individual beneficiaries can greatly facilitate establishing a single registry. Individual ministries should check any missing ID of beneficiaries and can help them obtain one. This will allow developing a robust registry for social protection programmes. Such an integrated MIS will improve targeting of beneficiaries, prevent leakages, avoid duplication, and bring efficiency into the delivery systems. In this context, it needs to be pointed out that the NHD database will have to be updated regularly as household situations change over time. Otherwise, the PMT scores constructed for one particular year will soon become obsolete to be used for targeting mechanisms.

- **Establishing interoperability to promote competition, improve customer choices and make DFS more effective with potentially greater financial inclusion**

One of the most pressing issues faced by Bangladesh's DFS ecosystem is the absence of a universal gateway for greater financial interoperability, which can connect all platforms and payment mechanisms throughout the economy. Without interoperability, consumers are often stuck with the same service provider or must maintain different mobile wallets, which can be quite inconvenient. Service providers may also consider their customer base as captive in the absence of such mechanism, making them reluctant about innovating new and improving existing facilities. When it is possible to make seamless transactions using payment platforms of different DFS/MFS providers, customers are more likely to choose based on value propositions. Interoperability thus can help make DFS much more impactful and promote financial inclusion. In India, Unified Payments Interface (UPI) has revolutionised DFS through interoperability.

Rather than just mandating interoperability by regulation (e.g. by specifying a timeframe in which payment services must become interoperable through the national switch), Bangladesh has also taken a realistic approach in which the relevant payment infrastructure – the Interoperable Digital Transaction Platform (IDTP) – is being developed by the central bank in which all commercial banks and MFS providers will participate. IDTP will allow for payments to be made across platforms seamlessly. As it stands, primary policy focus should be on properly finishing the development of IDTP and ensuring participation of all DFS providers in it. Introduction of IDTP will be a big leap towards ensuring interoperability in Bangladesh's financial sector.

- **Finalizing the commission structure for providing G2P payments**

The current approach of selecting service providers for social security transfers on a programme-by-programme basis does not provide a competitive monetary incentive for the market players. For every G2P transaction of Tk 1000, the service providers bear a cost of 1.4 per cent - 1.8 per cent, but they are not allowed to charge anything. It is therefore not a rational process, which only incentivises for exploiting the captive customer base. MFS providers are interested in social security schemes as they can then lock-in the beneficiaries in the absence of interoperability and it comprises the principal component of the existing MFS revenue generation model. This system thus also undermines the incentive for interoperability in the market. Ideally, the service providers should be allowed to charge fees and customers should be allowed to choose their preferred MFS/DFS service providers. Given that most of the beneficiaries of social security programmes belong to poor and vulnerable groups, the government can consider fixing service charges that can be subsidized through budgetary allocations. The provision of service charges combined with the upcoming interoperability will improve the competitive environment amongst services providers, encouraging them to offer innovative and quality services.

- **Streamlining a prudent regulatory framework for a level-playing field for service providers and creating an enabling environment for promoting innovative services**

Historically, Bangladesh Bank has been the solitary regulatory body in the financial sector. As technological firms venture into financial services, the responsibilities of different regulatory bodies overlap. With both the central bank and telecommunication administration having competence and scope for regulating cross-cutting aspects of MFS, establishing a prudent and coherent regulatory framework could become a difficult task. It is, however, extremely important to put in place an effective regulatory system that will ensure fair competition and a level-playing field amongst the service providers. Following actions can address the issue:

- While having a single regulator is traditionally the most desirable scenario, market dynamics may not allow it to function in the future. Streamlining the roles and responsibilities of different regulatory bodies is thus critical. There should be cooperation and collaboration amongst different regulatory authorities (including Bangladesh Bank, BTRC, BPO, Competition Commission, etc.) to devise a coherent institutional mechanism for regulation and conflict resolution.

- Regardless of the licensing origin, singularity of regulation must be protected. That means firms operating in the DFS arena must be subject to the same set of rules and legal standards. Service providers operating outside this singular framework must be brought within the accountability of overall system.

- In addition to these, encouraging innovation and developing guidelines for regulatory sandboxing or considering any other practical alternatives is to be considered as a priority for regulators. Potential entrants often find it difficult to enter the market with new services due to the absence of regulations that enable private piloting of such facilities. Any guidelines for innovation should also specify exit strategies and the prospects of scaling up the programme once piloting is run successfully. DFS can be an extremely powerful enabler of financial inclusion when innovation can bring in appropriate services to meet the needs of the women, poor and vulnerable groups along with those of the overall economy.

- **Advancing women's financial inclusion using DFS**

Mobile money has expanded rapidly, reaching women and the poor. However, along with increased participation of women in MFS, the gender gap in financial inclusion is on the rise in Bangladesh – from 11 percentage points in 2011 to 29 percentage points in 2017. Women's limited ownership of mobile phones along with their limited financial and general literacy levels and difficulty in understanding instructions in English (for USSD based services on feature phones) and other socio-cultural norms explain this rising inequality. To address this situation, following policy approaches can be considered:

- Digitisation of G2P payments and ensuring social security benefits targeting women reaches them directly. Some of Bangladesh's largest social security programmes (allowances for the widow, deserted and destitute women; maternity allowances; child benefit; and primary school stipends) already target poor and vulnerable women as the main recipients. Complete digitization of social security transfers can contribute to tackling the widening gender inequality.
- Digitisation of wage payments in industries with high female employment, such as the ready-made garments sector can also help greater financial inclusion. In the aftermath of Covid-19, a large number of women workers were brought under the payment system through using MFS. This must continue and the practice should be extended to other sectors as well. Similarly, the government can encourage payment digitisation for women workers in the informal sector.
- A Supply-side driven financial inclusion itself cannot address other underlying factors that are inhibiting women's active participation in the DFS ecosystem. Gender-sensitive DFS policies and gender-centric regulatory interventions backed by gender-disaggregated demand-side data are

likely to be helpful instruments in this regard. Along with DFS providers, it is equally important for government entities to collect, update, and publish gender-disaggregated data (currently unavailable) for G2P programmes. Regular collection and evaluation of such data will support the improvisation of existing financial services as well as innovation of the new ones focussing on women's needs.

- Improving product space for female DFS users have been proven difficult in Bangladesh so far. Many women are reluctant to use financial services despite their access. Therefore, developing a sustainable female consumer base is necessary for overall growth and success of the DFS ecosystem. Analyses of gender disaggregated data can help assess profitability and business case for targeting women as clients, thereby helping to enhance the product space of diverse client segments.

REFERENCES

Arabehety, P. G., Chen, G., & McKay, C. (2016). Digital Finance Interoperability & Financial Inclusion: A 20-Country Scan. CGAP.

Baur-Yazbeck, S., & Roest, J. (2019). Case Study — The Future of G2P Payments: Towards an integrated infrastructure in Bangladesh. CGAP.

Benson, C. C., & Loftesness, S. (2013). Interoperability in Electronic Payments: Lessons and Opportunities. CGAP.

BFIU. (2020). Guidelines on Electronic Know Your Customer (e-KYC). Dhaka: Bangladesh Financial Intelligence Unit, Bangladesh Bank. Retrieved from https://www.bb.org.bd/mediaroom/circulars/aml/jan082020bfiu25.pdf

BTRC. (2019). Directives on Mobile Financial Services in Bangladesh. Bangladesh Telecommunication Regulatory Commission. Retrieved from http://www.btrc.gov.bd/sites/default/files/news_files/Directiives%20on%20Mobile%20financial%20Services%20in%20Bangladesh%202019.pdf

CGAP. (2012). Advancing Financial Inclusion for the World's Poor: Annual Report 2012.

CGAP. (2019, September). Interoperability: Why and How Providers Should Pursue It. Retrieved from www.cgap.org: https://www.cgap.org/research/publication/interoperability-why-and-how-providers-should-pursue-it

CGAP. (2020, January). New Approaches to Data Privacy and Protection. Retrieved from www.cgap.org: https://www.cgap.org/topics/collections/new-approaches-data-privacy-protection

D'Silva, D., Filková, Z., & Packer, F. (2019). The Design of Digital Financial Infrastructure: Lessons from India. Bank for International Settlements, Monetary and Economic Department.

Demirgüç-Kunt, A., Clapper, L., Singer, D., Ansar, S., & Hess, J. (2017). The Global Findex Database: Measuring the Financial Inclusion and Fintech Revolution. Washington, DC: The World Bank Group. doi:10.1596/978-1-4648-1259-0.

Evans, O., & Osi, A. R. (2017). Financial Inclusion and GDP Per Capita in Africa: A Bayesian VAR Model. Journal of Economics and Sustainable Development, 8(18).

FID. (2017). Catalysing Business Transformation: A Study on Mobile Financial Services for MSEs in Bangladesh: Prospects and Challenges. Dhaka: Business Finance for The Poor in Bangladesh.

FII. (2019). Bangladesh: Wave 6 Report, Sixth Annual Tracker Survey. Financial Inclusion Insights. Retrived from http://finclusion.org/uploads/file/reports/fii-bangladesh-wave-6-2018-report(2).pdf

Gooley, D. B. (2018, February 13). Delivering on the Digital Promise for Women in Bangladesh. Retrieved from https://www.womensworldbanking.org/insights-and-impact/delivering-digital-promise-women-bangladesh/

GPFI. (2016). Global Standard-Setting Bodies the Evolving Landscape. Global Partnership for Financial Inclusion. Retrieved from http://www.gpfi.org/sites/gpfi/files/documents/GPFI_WhitePaper_Mar2016.pdf

Hanouch, M., & Chen, G. (2015). Promoting Competition in Mobile Payments: The Role of USSD. CGAP. Retrieved from https://www.cgap.org/sites/default/files/Brief-The-Role-of-USSD-Feb-2015.pdf

IFC. (2018). Digital Access: The Future of Financial Inclusion in Africa. International Finance Corporation and Mastercard Foundation.

Jeník, I., & Duff, S. (2020). How to Build A Regulatory Sandbox: A Practical Guide for Policy Makers. CGAP. Retrieved from https://www.cgap.org/sites/default/files/publications/2020_09_Technical_Guide_How_To_Build_Regulatory_Sandbox.pdf

Kim, D.-W., Yu, J.-S., & Hassan, M. K. (2018). Financial Inclusion and Economic Growth in OIC Countries. Research in International Business and Finance, 43(C), 1-14. doi:10.1016/j.ribaf.2017.07.178

Malady, L., Buckley, R., Didenko, A. N., & Tsang, C.-Y. (2018). A Regulatory Diagnostic Toolkit for Digital Financial Services in Emerging Markets. Sydney: University of New South Wales.

Mujeri, M. K., & Azam, S. E. (2017). Interoperability of Digital Finance in Bangladesh: Challenges and Taking-Off Options. Institute for Inclusive Financeand Development (InM).

Navis, K. (2020, January 28). Unpacking the Gender Gaps in Financial Inclusion. Retrieved from www.cgdev.org/: https://www.cgdev.org/blog/unpacking-gender-gaps-financial-inclusion

Pelletier, A., Khavul, S., & Estrin, S. (2014). Mobile Payment Services in Developing Countries: Information, Trust, and Training: The ingredients for Retail Agents 'Success. International Growth Centre.

Pelletier, A., Khavul, S., & Estrin, S. (2019). Innovations in Emerging Markets: The Case of Mobile Money. Industrial and Corporate Change, 1-27.

Perlman, L. (2018). Role of the Telecommunications Regulator in Digital Financial Services. Retrieved from http://www.citicolumbia.org/wp-content/uploads/2018/11/Role-of-telco-regulator-in-DFS-for-publication.pdf

Razzaque, A., Ehsan, S. M., & Bhuiyan, M. I. (2020 a). Barriers of Accessing Social Protection Programmes for the Poor and Marginalised. In Compendium of Social Protection Research in Bangladesh (pp. 56-117). The General Economics Division (GED), Bangladesh Planning Commission.

Razzaque, M. A., Eusuf, M. A., Uddin, M., Rahman, J., & Akib, H. (2020 b). Midterm Progress Review on Implementation of the National Social Security Strategy. Government of Bangladesh, Bangladesh Planning Commission. General Economics Division (GED).

Rockefeller Foundation. (2020, September). The Great Equalizer or Divider: Technology for Gender Justice and Women's Empowerment. Retrieved from ww.rockefellerfoundation.org: https://www.rockefellerfoundation.org/rfbreakthrough/the-great-equalizer-or-divider-technology-for-gender-justice-and-womens-empowerment/

Sahay, R., Čihák, M., N'Diaye, P., Barajas, A., Bi, R., Ayala, D., . . . Yousefi, S. R. (2015). Rethinking Financial Deepening: Stability and Growth in Emerging Markets. International Monetary Fund. doi:10.5089/9781498312615.006

UNCDF. (2018). Gender Centrality of Mobile Financial Services in Bangladesh. UNCDF|SHIFT. Retrieved from http://sdghelpdesk.unescap.org/sites/default/files/2019-11/25.03.19-Report--Gender-Centrality-MFS-Bangladesh%20%281%29.pdf

Vidal, M. F., & Medine, D. (2020, July). Study Shows Kenyan Borrowers Value Data Privacy, Even During Pandemic. Retrieved from www.cgap.org: https://www.cgap.org/blog/study-shows-kenyan-borrowers-value-data-privacy-even-during-pandemic

Winstanley, D., & Hasan, M. K. (2018). Building a National Social Protection Management Information System: Preliminary Assessment. Dhaka: UNDP, Bangladesh.

World Bank. (2018). Closing the Gender Gap: Opportunities for the Women's Mobile Financial Services Market in Bangladesh. The World Bank Group. International Finance Corporation.

World Bank. (2020). Digital Financial Services. Equitable Growth, Finance and Institutions, The World Bank Group.