

SECTOR ASSESSMENT (SUMMARY): PAYMENT SYSTEM

Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. Mongolia's current financial payment system was set up in 2009 with support from the World Bank. The system comprises interbank and retail payment infrastructure. The government recognized that the payment system would need further development to address technical limitations and to meet new requirements as the market and policy evolved. Current challenges include (i) the need to meet rapid growth in transactions; (ii) high cost of processing; (iii) the limited access available to the rural population; (iv) software limitations; (v) fragmented services; (vi) security risks; (vii) a need to standardize; (viii) a need to update the legal/regulatory framework; and (ix) a need to set up an appropriate institutional framework.

2. According to the National Electronic Transaction Center, total interbank transactions rose from 1.82 million with a value of MNT7.90 trillion in 2007 to 3.39 million with a value of MNT13.3 trillion in 2010, representing increases of 86% in volume and 68% in value. The volume of low-value interbank transactions increased in volume by 30%. Payment card transactions rose by about 132% in terms of value and 157% in volume, based on Bank of Mongolia (BOM) research. These comprised point-of-sale (POS), point-of-banking (POB), and ATM transactions). By mid-2011, Mongolia had more than 2 million cardholders, about one-quarter of whom were active users. The cardholders in rural areas accounted for about 25% of total users. About 60% of the population employ debit cards, typically with one bank and limited use, but only about 2 % of the population uses credit cards. As of mid-2011, the card service network offered 410 ATMs, 4,956 POS terminals, and 2,076 POB terminals that are shared by all network participants. The card infrastructure is still underdeveloped in the rural areas, however.

3. The cost per transaction of about MNT233 in 2010 under the current system was almost 20 times the MNT12 equivalent figure in the Republic of Korea. Mongolia is making the transition from paper- and card-based payments services to next-generation payment systems based on electronic transfers and has yet to feel the benefits of the economies of scale. Remittance costs remain high, which negatively affects emigrants and their families. The average cost for emigrants to send \$200 home from other countries in East Asia and in the Pacific was estimated to be \$19 in the third quarter of 2011, the second highest cost in the world. Moving from brick-and-mortar branch banking to branchless banking will help reduce the high cost of maintaining branches across large geographical areas

4. The low-value payments system is an in-house product at the BOM and does not provide direct debits. Banks have to list and key in every recipient's fund transfer information. This means, for example, that corporate users with many customers have to issue bills and collect fees for monthly utility bills or subscriptions, which is very time-consuming and costly. Neither the central bank accounting system nor the central bank bills system allows for collateral management within the payment system, exposing banks to avoidable settlement risks. The central bank accounting system does not register trades or the transfer of reserves between member banks in foreign currencies except the US dollar and the renminbi. The general ledger system is outdated and needs to be replaced

5. Regarding other forms of payments, some operators, such as GrapeCity, a financial solution provider, have implemented most of the core internet-mobile banking systems of the commercial banks. Mobicom, the largest mobile phone operator, provides such services as mobile settlement and money transfer to its mobile customers through a subsidiary and is gradually expanding its network. Mobile banking services are provided by nine commercial banks and a few nonbank financial institutions. Interoperability will likely emerge as an issue,

and a common integrated platform will be needed as early as possible to avoid costly and unnecessary up-front investments. Several banks and mobile network operators have implemented proprietary, closed-loop mobile financial services systems. International experience has demonstrated that such systems tend to create monopolies that deters new entrants, eliminates competition, and result in unfair pricing. This gives greater impetus to the need to make competing systems in Mongolia interoperable as soon as possible.

6. Risks stem from an incomplete backup system. A backup system is available but not connected with the individual banks' systems in case of a system failure. The backup data center located at the National Electronic Transaction Center next to the BOM offices is also highly inadequate. It lacks electrical, security, and air conditioning facilities for stable operation of servers and communications and network equipment. The system also needs to be strengthened to be able to withstand computer attack and to reduce other information and communication vulnerabilities. With the move to electronic transfers, the system needs to be protected against identity theft, hacking, phishing, and viral attacks. Many of the cards now in circulation still use magnetic stripes and not the more secure integrated circuit based Europay, Mastercard and Visa (EMV) system.

7. New products and services are being introduced and others are being proposed. For better control and ease of use, these systems need to be standardized. The easiest way would be to follow international practice. In some countries, however, standards that better reflect national characteristics and the realities of the domestic financial environment have proved to be more appropriate. These systems use their own customized message standards based on global standards. By establishing standards before new technology is commercialized, financial organizations and companies avoid duplication of investments and unnecessary expenses.

8. Financial institutions other than commercial banks are supervised by the Financial Regulatory Commission. The Information, Communications Technology, and Post Authority (ICTPA) is the government authority responsible for the introduction and application of base technologies related to electronic payment and settlement services. Accordingly, legislation directly affecting financial transactions, such as the e-commerce law and the e-signature law, has been prepared by the ICTPA. Given that the public will use digital signatures for financial transactions, having these two authorities share responsibility for overseeing some electronic transactions could be inefficient.

2. Government's and ADB's Sector Strategy

9. The project is consistent with the National Development Strategy of the Government based on the Millennium Development Goals that call for strengthening the financial system, banking and financial services. An efficient payments mechanism is critical to the smooth functioning of the financial markets. It is recognized that a disruption in the operation of the payment system can precipitate a systemic crisis in the financial system itself. The Strategy also calls for reducing urban-rural disparities that the project supports. The development of the payment system is a priority for 2013. The project is likewise consistent with ADB's Country Partnership Strategy for Mongolia, 2012–2016 that seeks to promote financial inclusiveness and sustainable growth, address infrastructure gaps specially those required for connectivity, support innovation and provide access to finance and basic services.¹ Moreover, it forms part of financial sector development that is an identified core area of operation under ADB's Strategy 2020. The project will build on ADB's experience and lessons gained from previous ADB operation in Mongolia's financial markets, including those related to banking sector infrastructure and mobile banking services.²

¹ ADB. 2012. *Country Partnership Strategy: Mongolia, 2012–2016*. Manila.

² The availability of the components needs to meet industry standards (99.98%) and that the utilization of these components meets the objectives of the systems, i.e., financial inclusion, etc.

3. ADB Sector Experience and Assistance Program

10. ADB has given considerable assistance in support of the transformation of Mongolia's financial sector. The key achievements of previous and ongoing ADB loans and TA projects for financial sector reform in Mongolia include the restructuring and privatization of state-owned banks, development of an interbank market, further strengthening of banking legislation and regulations, and development of a basic framework and infrastructure for the non-bank financial sector. ADB's performance in assisting the government reform the Mongolian financial sector has been rated by the Country Assistance Program Evaluation 2008 as "successful," "relevant", "effective", and "efficient", and its sustainability "likely." The overall positioning of its financial sector strategies for the evaluation period has likewise been assessed as "satisfactory"

11. Mongolia faces a growing demand for electronic transactions-related services. Payment and transfers can be on cellular phones, which, in a country at the size of Mongolia, could greatly reduce transaction costs. A study conducted by Moody's Analytics in 51 countries over a 6-year period shows that electronic card usage spurs economic growth by improving efficiencies in commerce and contributes to increased consumption and production, job creation that expand personal incomes thereby generating growth. It is estimated that global Gross Domestic Product grew an additional 0.2% per year than it would otherwise have from electronic card usage.³ The proposed project will provide a comprehensive solution to meet all payment service needs in Mongolia.

(i) Interbank Payments Infrastructure

12. While retaining the current core real-time gross settlement (RTGS) system, a central securities depository will be set up under the proposed project that will enable participants in an RTGS to make full use of government securities pledges to the operator of the RTGS, thereby providing essential collateral management that is missing in the current system. It will be based on delivery versus payment, as required under the core principles. The current general ledger system, which has fairly limited scope, will be replaced with a system with greater functionality to consolidate the statutory accounts of individual banks with the accounts of BOM and integrate with the other systems in the interbank infrastructure. The central bank accounting and central bank bills systems will be replaced by (i) a proper foreign exchange trading system that will facilitate domestic and international foreign exchange trading, auctioning, and swaps based on payment-versus-payment settlement in the RTGS; and (ii) a money market trading system that will facilitate interbank borrowing and lending transactions, including repos with the BOM, on a documents-versus-payment settlement basis in the RTGS.

(ii) Retail Payments Infrastructure

13. While the current financial transfer switch (FTS) will remain intact, the low-value payments system will be replaced by an automated clearing house that will allow direct debits not possible under the current system and will act as an electronic network for financial transactions to process large volumes of direct debit and direct credit transactions.

14. **Card system infrastructure upgrading.** The FTS is capable of supporting card and merchant management and EMV cards and hybrid cards, but these functions have yet to be made active. Consequently, the electronic fund transfer at point of sale/ATM switch will be upgraded to become EMV compliant.⁴ The upgrade will include a card system to manage all

³ M. Zandi and V. Singh. 2010. *The Impact of Electronic Payments on Economic Growth*. Moody's Analytics.

⁴ EMV is a global standard for credit and debit payment cards based on computer chip card technology. EMV Company is owned by American Express, JCB, Mastercard Worldwide, and Visa. According to EMV, more than 1.5 billion EMV compliant chip-based payment cards were in use worldwide at the end of 2011, along with 21.9 million active EMV terminals. EMV cards accounted for 45 % of all payment cards and 76 % of all payment terminals worldwide.

card-issuing and merchant-acquiring functions and a merchant management system to manage the complete merchant life cycle from account establishment through settlement. This will give the card system infrastructure a common platform.

15. **Ensuring interoperability in internet payment system.** The FTS switch will be extended to provide for an internet payment gateway that will allow for an integrated electronic settlement system that is not tied to any bank system. Bank-based payment services put a ceiling on online transactions because they are limited by each bank's individual capacity.

16. **Establishment of mobile payments system.** The interoperable mobile payment system will be set up primarily to avoid the limitations of competing payment platforms that are not interoperable. The system will have cloud-based architecture that will provide nonintrusive integration of the member banks and a fully integrated network connection to the mobile network operators.

17. To support the operation of the retail payments infrastructure, the project will set up a shared one-time password service that will generate a different number for every transaction considered and be a powerful tool in validating customers for financial transactions. The certifications for use of e-signatures will be used by the BOM. A national database to authenticate recipients under the system will be implemented by the ICTPA. The project will upgrade the data center to ensure that the system has high availability and to provide for disaster recovery.⁵ The project will conduct business continuity planning to manage risks and ensure disaster preparedness to protect the system and information. The project will also provide technical support to set up and operate an EMV center of excellence that will be used by all banks in Mongolia; and undertake business continuity planning, involving consultancy and technical assistance aimed at developing an up-to-date business continuity plan.

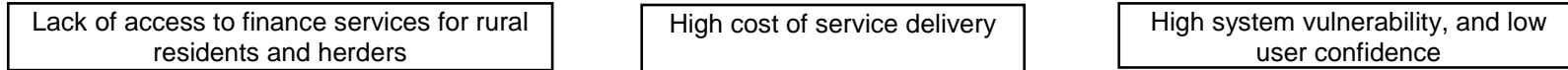
(iii) Legal and Regulatory Framework

18. The changes to the regulatory framework components required are mandated participant bank connection to the interbank payment systems infrastructure and mandated Interoperability for all card or mobile account issuers / operators intended to ensure viability of the system; regulations designed to centralize authority of the BOM in overseeing the payments system and define rights, obligations and role of participants including consumer protection and address the identification and verification obligations of financial institutions and permit non-face-to-face account opening and transactions; finally, failure to settle rules and survivors' pay rules are to ensure that payments made in real time are settled during the next automated clearing house and/or RTGS session. The law on e-signatures has been passed while a payments Law is under consideration by parliament.

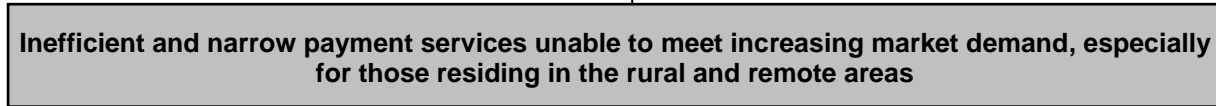
⁵ The target is tier 3 grade availability, which requires that a system is available 99.982% of the time year-round (0.4–1.6 hours per year of failure time) and is capable of real-time maintenance and inspection of data facilities without downtime. Tier 3 grade or above is a specification of the International Data Corporation tier classification of the Uptime Institute, a policy research institute in the United States that specializes in research of the critical computing environment (the computer room, the server room, and the data center).

Problem Tree—Mongolia: Payment System Modernization Project

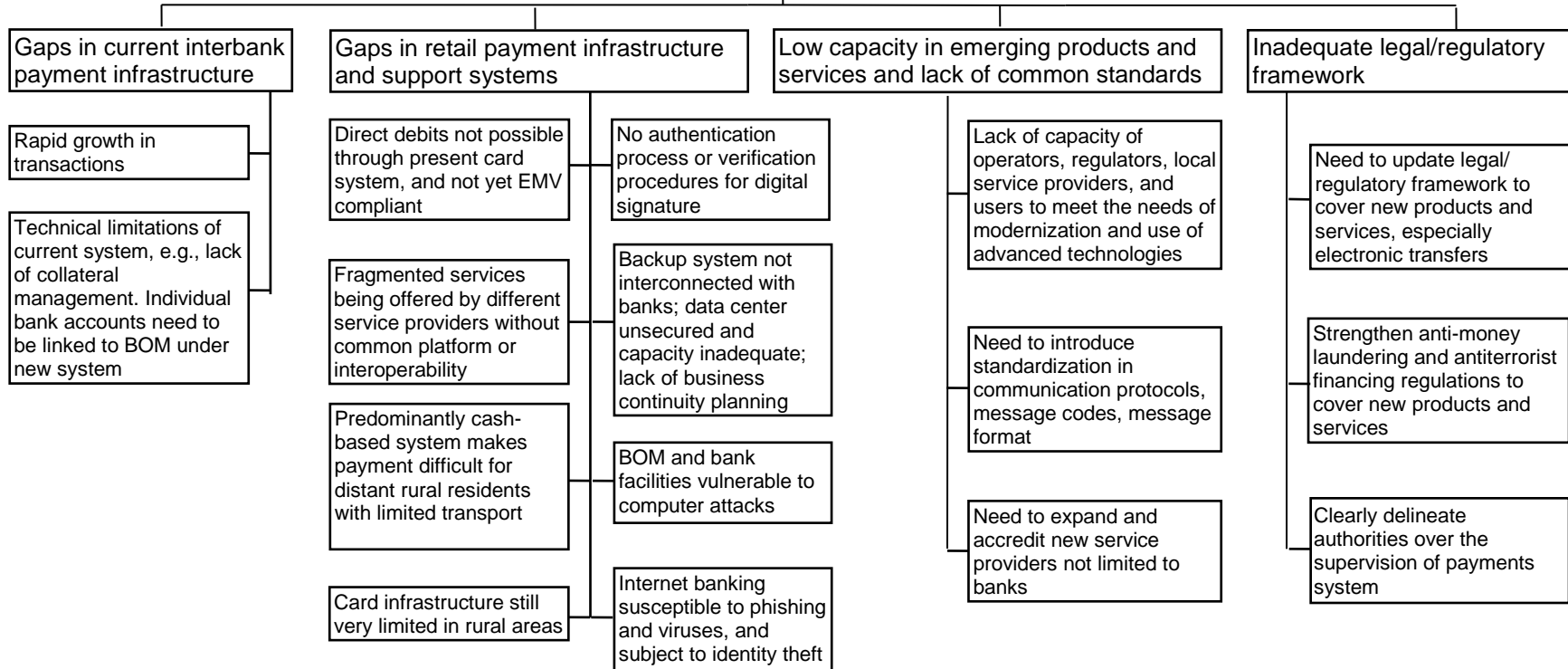
Effects



Key Problem



Causes



Sector Results Framework (Financial Sector 2012–2015)

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contribution	Indicators with Targets and Baselines	Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
<p>Establishment of a national full service payments system that provides efficient and broader payment services to meet increasing market demand from all sectors, especially in the rural areas, and strengthens financial markets to support innovation and increased access to finance. It will also help promote private sector development, as access to finance is the biggest constraint cited by MSMEs in the country, and help reduce poverty and inequality by providing improved access to finance by the rural poor.</p>	<p>Optic fiber connectivity in rural areas reaches 100% by 2015, from 85% in December 2012.⁶</p> <p>Market penetration in rural areas reaches at least 50% for payments via electronic transfers, i.e., through mobile and internet payments</p> <p>Number of active cardholder users reaches 50% of total cardholders by 2015, from 22% in 2013. Rural penetration also increases, from current 4% to at least 25%.</p> <p>No. of POS terminals, now at 19% in rural areas outside Ulaanbaatar, increases to 30% by 2015</p> <p>Number of ATMs double overall by 2015 and reaches at least 50% in rural areas. Baseline (2013): 410 ATMs, of which 28% are outside the city.</p>	<p>Key components of full national system established</p> <p>Capacity to operate and maintain the system put in place</p> <p>High availability, business continuity, and disaster recovery plan prepared and ready for implementation</p> <p>Legal and regulatory framework developed and in accord with evolving market needs</p>	<p>The payments ecosystem is developed and nurtured and is composed of a network of organizations and individuals, including financial institutions, suppliers, distributors, agents, customers, competitors, and government agencies.</p>	<p>Planned key activity areas</p> <p>Development of inclusive financial markets, focusing on providing greater access to financial services for poor and vulnerable households and developing microinsurance</p> <p>Pipeline projects with estimated amounts</p> <p>Working with the Bank of Mongolia and the Ministry of Finance to develop an efficient deposit insurance scheme that will serve the banking sector better and reduce government exposure</p> <p>Strengthening corporate governance systems and associated regulatory capacity</p> <p>Ongoing projects with approved amounts</p> <p>Supporting the development of a government bond market by helping to establish an auction mechanism and platform for secondary market trading</p> <p>The trade finance program provides guarantees and loans in support of international trade</p>	<p>Planned key activity areas</p> <p>number of microfinance accounts opened increases by 5% per year up to 2015.</p> <p>Pipeline projects</p> <p>Deposit insurance scheme established</p> <p>Corporate governance of commercial banks strengthened through capacity and institutional building</p> <p>Ongoing projects</p> <p>The auction mechanism and the platform for secondary market trading developed for the government bond market</p> <p>The amount supported by the trade finance program provides guarantees and loans in support of international trade increased</p>

MSME = micro and small and medium-sized enterprises, POS = point of sale.

Sources: ICTPA figures and World Bank. 2012. *Mongolia: Access to Finance*. Technical note. June. Washington, DC.

⁶ ICTPA figures.