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## BANKING THE POOR THROUGH MOBILE TELEPHONY: UNDERSTANDING THE CHALLENGES FOR EXPANSION OF MOBILE-BASED FINANCIAL SERVICES IN PERU\*

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### INTRODUCTION

This paper summarizes the findings of a study analyzing the ecosystem for deployment of Mobile Financial Services (MFS) in Peru. The study was part of an effort to examine that ecosystem in four countries in the region, analyzing them from a comparative perspective. The countries chosen are in an early phase of MFS development and show great potential for MFS deployment, and the goal was to gain an understanding of both the conditions for and the bottlenecks affecting MFS expansion. Besides Peru, the study covered El Salvador, Guatemala and Paraguay, resulting in four case studies (one per country) and a comparative analysis based on those case studies.

The studies were made possible by support from the Institute for Money, Technology and Financial Inclusion at the University of California, Irvine, as well as the Regional Dialogue on the Information Society (*Diálogo Regional para la Sociedad de la Información*, DIRSI) and the Proyecto Capital.<sup>1</sup> These latter initiatives are supported by the Ford Foundation and the IDRC and are among the activities of the economics area of the Institute of Peruvian Studies (*Instituto de Estudios Peruanos*, IEP).

This study adapted the Telecommunications Regulatory Environment (TRE) methodology (LIRNEasia, 2008), which involves surveying key stakeholders about their perceptions.

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\* The complete document is available at the Capital Project: <[www.proyectocapital.org](http://www.proyectocapital.org)>.

1. This study and the others will be available on the Web sites of DIRSI (<[www.dirsi.net](http://www.dirsi.net)>) and the Proyecto Capital (<[www.proyectocapital.org](http://www.proyectocapital.org)>).



Questionnaires were sent (and responses received) between September and November 2012, which was the time frame for this and the other case studies. Each study was carried out by a local team, coordinated by the DIRSI project and implemented by the IEP.

## POTENTIAL OF MFS

In economics, the importance of providing financial services to the lowest-income population is a given. There are many barriers, however, including high infrastructure costs, requirements for opening accounts, the limited number of financial institutions and services, etc. MFS are emerging as an alternative for overcoming these obstacles. MFS are financial services, such as transfers, withdrawals, etc., provided by mobile telephony. The key is that these services take advantage of the existing penetration of mobile telephony, which, because it reaches the bottom of the income pyramid, solves the infrastructure problems inherent in serving this population. This significantly lowers costs, as well as some of the other barriers mentioned above. Optimism about this potential is reinforced by prior experience in several developing countries.

In recent years, Peru has seen a notable increase in mobile telephony penetration in households at various socio-economic levels, including low-income households and those in rural areas.<sup>2</sup> It has also had one of the highest levels of investment in the region. The financial sector also shows some improvement, although it lags in several key indicators. Since

2. For example, according to the telecommunications regulatory agency, the *Organismo Supervisor de la Inversión Privada en Telecomunicaciones* (OSIPTEL), the mobile density increased from 32 to 103 lines between 2006 and 2011, while the percentage of households with access to mobile telephony grew from 30 percent to 80 percent of the total during the same period.

2005, Peru has had a conditional cash transfer (CCT) program known as Juntos, which offers the possibility of using MFS for those transfers.

In this context, MFS show great potential for increasing financial inclusion on Peru. The purpose of this study was to analyze the MFS ecosystem, which is key for MFS deployment. This summary will begin by describing some indicators of investment in the financial sector.

## INVESTMENT INDICATORS

Peru's financial sector is led by the Central Reserve Bank of Peru, as well as by the Office of the Superintendent of Banking and Insurance (Superintendencia de Banca y Seguros, SBS). In general, various key indicators for the sector have shown positive evolution in recent years. The structure of the sector has not changed, but there has been an increase in assets. Our main interest, however, is in financial depth, as well as in access to and use of the financial system.

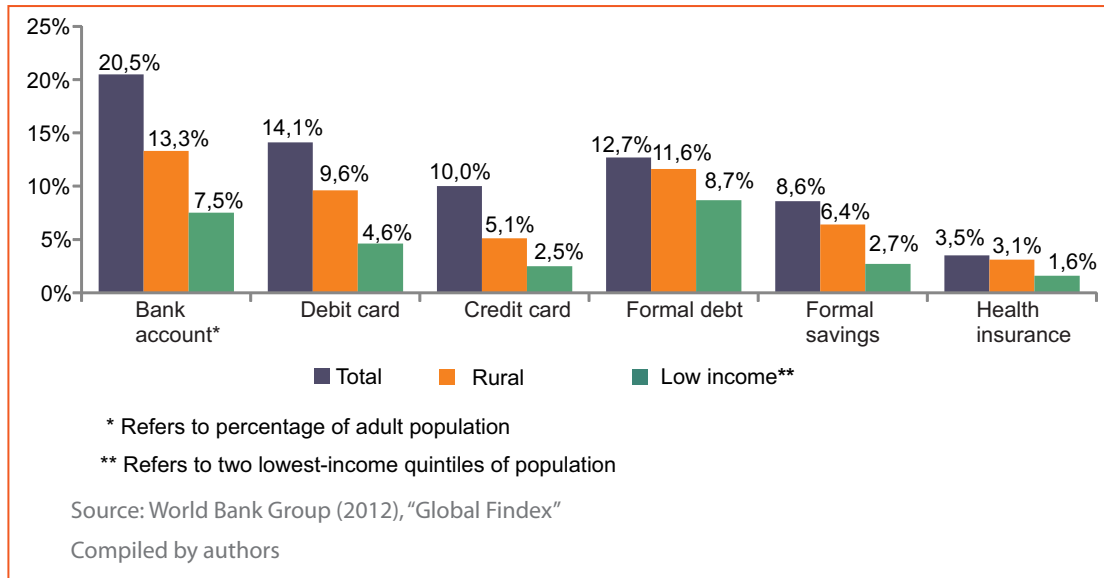
Financial depth has increased somewhat, although it still lags in comparison to the region as a whole. Bank loans (as a percentage of GDP) increased from 18.1 percent to 27.0 percent between 2006 and 2010. That indicator for deposits increased from 22.6 percent to 30.3 percent during the same period, according to the SBS. Similarly, use of the financial system has increased, although it remains low. Between 2006 and June 2012, the number of debtors per 1,000 adults increased (from 183 to 278), as did the number of depositors (from 559 to 939), according to the SBS. Figure 1 shows several indicators of financial access. The differences in use by urban and rural populations, as well as by income quintiles, are notable. Indicators of financial access show a clear upward trend, with bank branches per 100,000 inhabitants increasing from 4.40 in 2005 to 58.7 in



2011 (IMF, 2012), while the number of ATMs per 100,000 inhabitants increased from 11.49 to 29.58 during the same period. Indicators

of bank branches and ATMs per 1,000 kilometers show a less favorable evolution, however, reaching markedly lower levels.

Figure 1: Financial use in Peru (% of population with account), 2011



## METHODOLOGY

The methodology used is an adaptation of the TRE methodology (LIRNEasia, 2008), which involves surveying key stakeholders in the sectors about their perceptions of important dimensions for MFS deployment. These dimensions are divided into three environments established a priori, based on a literature review: (i) institutional environment, (ii) market environment, and (iii) end-user environment. The first consists of six dimensions, the second of five, and the third of three; the 14 dimensions are explained in Appendix 1. A questionnaire was sent to the identified experts,<sup>3</sup> who were asked to score each dimension of the MFS ecosystem using a Likert (1932) scale ranging from 1 (very ineffective) to 5 (very effective). A dimension is considered effective if scores higher than the threshold of 3.

3. Experts were identified by the local team in each country, following implementation of the methodology.

Key stakeholders were divided into three categories: (i) those directly affected by the regulation of the sectors involved, (ii) those who analyze the sector from a broader perspective (e.g., consultants from financial institutions), and (iii) those interested in improving the public sector (e.g., academics and research organizations). Questionnaires were sent to members of the three categories, and the number of responses differed by category. Because it is desirable for the categories to have equal weight when calculating the final result, the responses were weighted, with greater weight given to each response in categories with fewer responses. Appendix 2 shows the number of experts identified, the number of responses received and the weight given to each.

To understand the results, which are based on perceptions, a prior assessment was done of both the telecommunications and financial sectors. The latter included an assessment of the ecosystem for MFS, which is especially im-

portant for understanding the results. The following section explains the latter assessment and key results.

## MFS ECOSYSTEM AND MAIN RESULTS

MFS are not provided in Peru. During the study period, legislation for the issuing and management of electronic money was signed into law. The main purpose of this document is to analyze the ecosystem for MFS, or the conditions that promote investment and deployment of these services. Based on the literature review three areas were identified for evaluation: (i) institutional environment, (ii) market environment, and (iii) end-user environment. Each is divided into several dimensions.

### Institutional environment

The institutional environment analyzes characteristics associated with regulatory aspects and the role of the main public agencies involved. It is evaluated based on six dimensions:

First, regarding **financial sector regulation for MFS**, Peru had no specific regulations when the study began, but progress was made with draft legislation on electronic money. The draft included creation of Electronic Money Issuing Enterprises (*Empresas Emisoras de Dinero Electrónico*, EEDE), which would mean that the MFS would not have to be linked to an existing bank account. It also included provisions in line with legislation against money laundering and financing of terrorism, for protection of savings (a guarantee fund), reserves for encumbrance (optional), access to personal data (optional), etc.

**Financial sector regulation for financial inclusion** shows progress, although it does not constitute a comprehensive strategy. It includes the concept of basic accounts, which would have fewer requirements for opening. It

also allows the use of shared facilities, meaning, for example, that microfinance institutions could use the Banco de la Nación's platform to expand their reach.

There has been little progress in **telecommunications sector regulation for MFS and financial inclusion**. Agencies in that sector have not participated in any aspect.

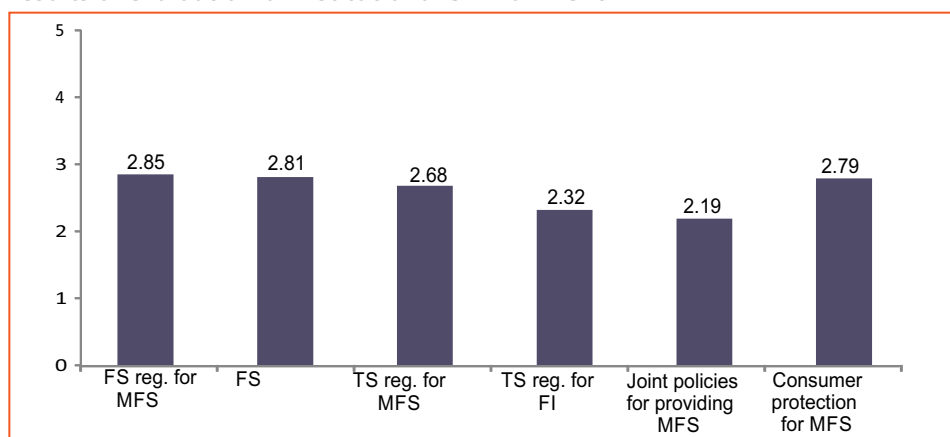
Related to that, **coordination and joint policies for providing MFS** are highly deficient, as there is no inter-sector coordination. The SBS has drafted all regulations, without coordinating with operators or agencies in other sectors.

Finally, consumer **protection in MFS** is included in MFS regulations, but those did not exist when the study began. At that time, the only agency involved was the national Institute for Defense of Competition and Intellectual Property (*Instituto Nacional de Defensa de la Competencia y de la Propiedad Intelectual*, IN-DECOPI), which handled consumer complaints in general, which is not efficient for specific issues related to MFS.

Regulation is clearly still in an initial phase, as many changes occurred during the study period. Peru lags in all dimensions, especially those related to the telecommunications sector, where regulation is non-existent. This corresponds with Figure 2, which shows the score of each dimension in this environment, according to the TRE methodology, in which none exceeds the efficacy boundary.



Figure 2: Results of evaluation of institutional environment



### Market environment

Evaluation of the market environment examined aspects associated with competition among private operators, the degree of innovation and catalysts for development of the MFS ecosystem. This environment was divided into five dimensions:

First, **competition in the financial sector** shows that concentration in the industry is relatively high and stable. For loans, the three largest banks had a market share of 75 percent in 2006 and 73 percent in 2012. For deposits, the indicator was 79 percent in 2006 and 73 percent in 2012, according to data from AS-BANC.

**Competition in the telecommunications sector** shows high concentration, with an upward trend. According to OSIPTEL, the market share of the two main operators rose from 74.1 percent in 2005 to 95.8 percent in 2011. This is one of the highest levels of concentration in the region.

**Innovation in the telecommunications sector** is dynamic; the three operators have deployed 3.5G networks to offer broadband services.

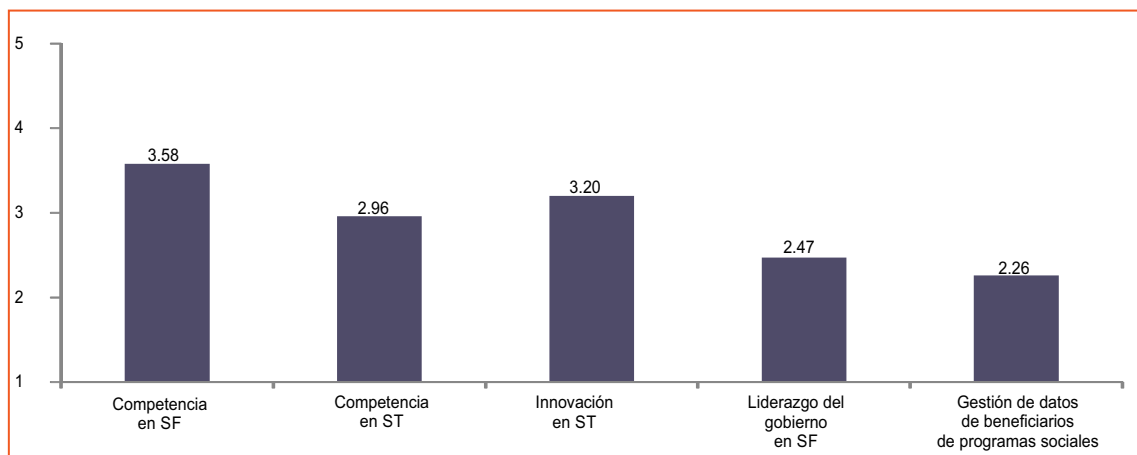
**Government leadership on MFS** is very lax, as there has been no consideration of linking

MFS with CCT programs. These programs use the Banco de la Nación as a platform for delivering transfers, without including the possibility of MFS.

Finally, **systems for management of data about beneficiaries of social programs** include the Household Targeting System (Sistema de Focalización de Hogares, SISFOH), which has a General Register of Households (Padrón General de Hogares, PGH). This contains socioeconomic information about beneficiaries of these programs.

Based on this information, it seems clear that the first three dimensions are dynamic and conducive to MFS expansion, although competition in the telecommunications sector is slightly below the efficacy boundary. Dimensions related to the government's role lag behind, however, with almost no progress. This assessment coincides with the results of the TRE evaluation, in which only the first three surpass the efficacy boundary, as shown in Figure 3.

Figure 3: Results of evaluation of market environment



### End-user environment

The end-user environment emphasizes the role of agents and infrastructure for MFS. It is divided into three dimensions:

**Support infrastructure for non-bank correspondents (agents)** shows considerable evolution since regulations were implemented. The number of corresponding tellers increased from 1,689 in 2009 to 12,846 in 2012. These are concentrated in the capital and other major cities, however. The Banco de la Nación also has 536 branches and more than 1,000 ATMs nationwide.

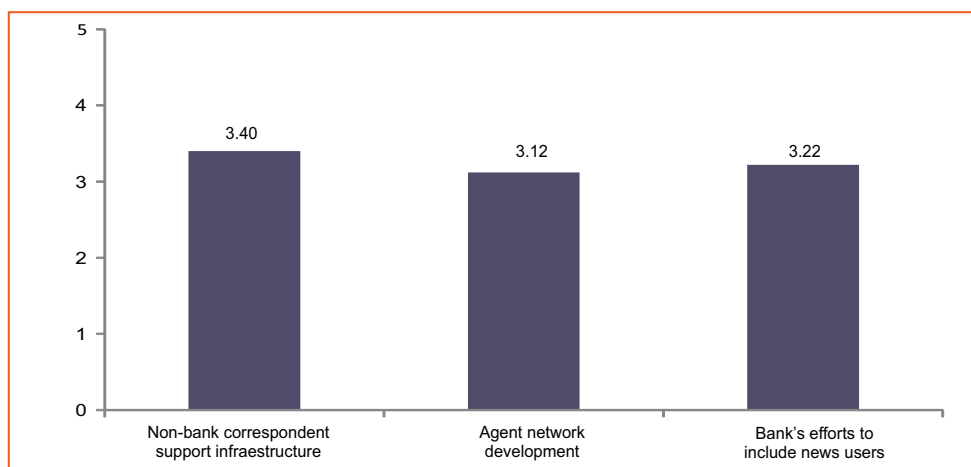
Similarly, **agent network development (penetration)** has shown sustained growth,

with points of service increasing from 10 to 69 per 100,000 inhabitants, according to the SBS.

Finally, **bank efforts to include/attract new users** reflect some initiatives, but no comprehensive strategy. In general, there is a preference for aiming strategies at people who are already using the banking system.

All dimensions therefore show improvements and relative efficiency, although that is not generalized. This coincides with the results of the TRE methodology (Figure 4), in which all dimensions are slightly above the efficacy boundary.

Figure 4: Results of evaluation of end-user environment



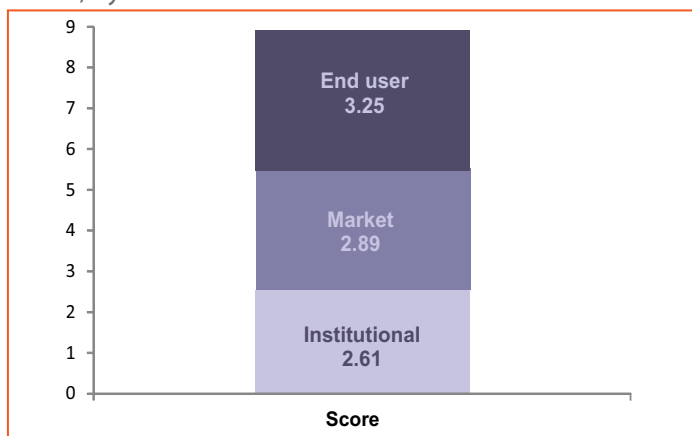


## Overall results

Finally, Figure 5 shows the overall results, with the average for each environment. As noted above, the institutional environment lags furthest behind, with no dimension exceeding the efficacy boundary. The very recent regulation, combined with the lack of coordination, are critical factors. In the market environment, the first dimensions are relatively positive for

MFS, but they are worse than the results in the other countries studied, especially in telecommunications sector competition, which does not surpass the efficacy boundary. The dimensions associated with the government are even less advantageous, which could be a barrier for MFS deployment. Finally, the end-user environment is the most highly developed, exceeding the efficacy boundary in all areas, without differences among the dimensions.

Figure 5: Evaluation results, by environment



## CONCLUSIONS

The purpose of this paper is to provide an overview of existing conditions for MFS deployment. This responds to the potential offered by these services because of the difference between mobile access and financial access. In the latter sector, the evolution of some indicators has been positive, but it still lags behind the region

In evaluating the MFS ecosystem, the prior assessment and the results obtained from adapting the TRE methodology coincide fairly well. The institutional environment is weakest, because MFS regulation was just beginning during the study period. In addition, the telecommunications sector has not been involved in the process; as a result, inter-sector coordination is practically non-existent. In the market environment, results are favorable in dimensions related to competition and innovation, although competition in the telecommunications sector remains slightly below

the efficacy boundary. The government's role in leading and overseeing this process is considered inefficient, however, and obtained the worst results. Finally, in the end-user environment, there has been positive deployment of agents and infrastructure, with a result above the efficacy boundary. Nevertheless, various aspects must still be improved.

Based on these results, it is possible to make some recommendations. First, MFS regulation must continue, with attention to key aspects that facilitate their expansion. The telecommunications sector must also become involved in the design of regulations for MFS and for financial inclusion, since the regulator and operators are key stakeholders. Inter-sector coordination should improve considerably. The government's role must also be emphasized, as it should be a key catalyst for the develop-



ment of MFS. Linking these services with CCT programs is crucial. The agent network should also expand into rural areas, because access to and use of the financial system is much more limited there. Finally, in the academic sphere,

this study should be followed up in the coming years to analyze the evolution of the dimensions over time. This will provide valuable information for policy makers, which would be difficult to obtain in any other way.

## APPENDICES

Appendix 1: Dimensions for evaluating the MFS ecosystem

Environment	Dimension	Aspects covered
Institutional environment	Financial system regulation of MFS	Licensing: complexity of process and specifics for issuing electronic money
	Financial system regulations for financial inclusion	Incorporation of mandates for financial inclusion
	Telecommunications sector regulation of MFS	Universal service and coverage requirements, regulation of quality, know-your-customer rules
	Telecommunications system regulations for financial inclusion	Incorporation of mandates for financial inclusion
	Coordination and joint policies for offering MFS	Joint policies of financial and telecommunications regulators
	Consumer protection for MFS	Measures for protection of MFS customers
Market environment	Competition in financial sector	Market concentration, profitability indicators and quality-of-service indicators
	Competition in telecommunications sector	Market concentration, profitability indicators and quality-of-service indicators
	Innovation in telecommunications market	Degree of innovation
	Government leadership on MFS	Government's degree of interest and openness
	Management of data and information management about users/beneficiaries of social programs	Databases to understand behavior and needs
End-user environment	Support infrastructure for non-bank correspondents	Infrastructure deployment (ATM, POS)
	Agent network development (penetration)	Agent distribution networks (retail outlets, sellers of prepaid cards, etc.)
	Bank efforts to include/capture new users	Policies for capturing new users

Source: The Mobile Financial Services Development Report 2011 / Compiled by: IEP





## Appendix 2: Experts identified, responses received and weighting by category

Category	Experts (N)	Responses (N)	Weighting of responses
Category 1	148	27	0,901
Category 2	78	25	0,973
Category 3	70	21	1,159
<b>Total</b>	<b>296</b>	<b>73</b>	<b>---</b>

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