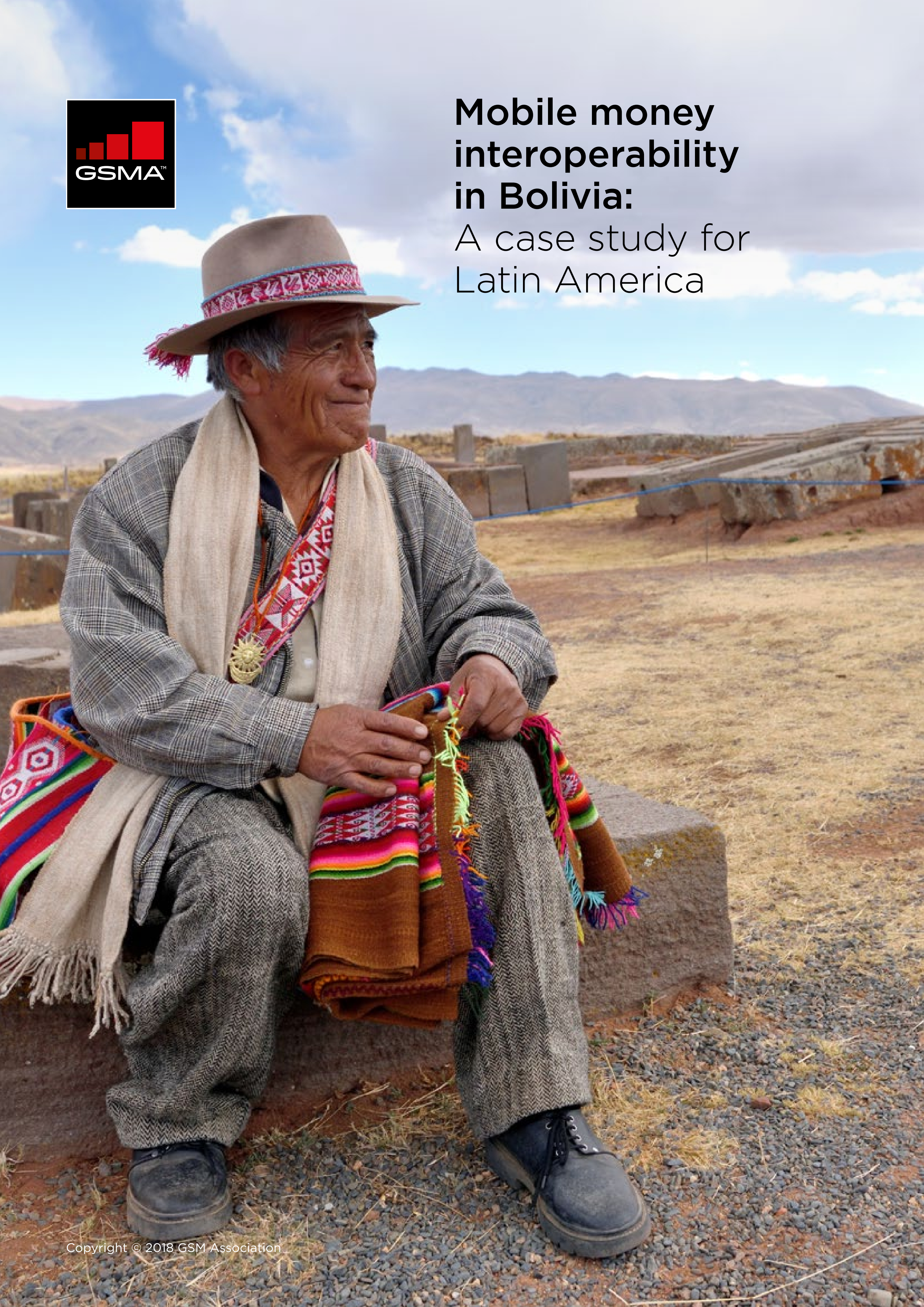

Mobile money interoperability in Bolivia:
A case study for Latin America

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The content of this working paper solely reflect the views of the GSMA and the authors.

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Contents

Executive summary

In 2011, Bolivia became the first country in Latin America to enact an e-money law. In 2012, Tigo Money became Bolivia's first mobile money service and Tigo is still the country's leading provider today. Following lengthy negotiations with ACCL, Bolivia's Private Bank Association Switch, Tigo reached another milestone in September 2016, integrating with Bolivia's main low-value, real-time switch and becoming interoperable with the majority of Bolivian banks.

This case study aims to describe how this dialogue and process unfolded, while also suggesting improvements that other ventures in the Latin American region might consider:

- There is a commercial rationale for efficient interoperability with the banking sector which can be achieved through different models. Timing and industry choice was key to the momentum behind interoperability with the banking sector and the identification of ACCL switch as the preferred model. The arrangement was supported by constructive dialogue between industry and policymakers to align on timing, benefits and costs, and risks of interoperability.

- The switch's technical capabilities must be appropriate for mobile money, this includes spare processing capacity, real-time transfer of funds, and access to a centralised settlement account system. Fortunately, the ACCL in Bolivia demonstrated these operational realities. Mobile money platforms, in turn, require compatible IT security and operational controls.

- Both parties need to build a relationship to reach a commercial agreement. This requires a change of mindset: a willingness to shift from a competitive to collaborative position. In Bolivia, this mindset change is in progress and further evolution of the commercial arrangements is needed.

- Finally, governance arrangements should be updated to ensure the unique needs of mobile money providers are adequately represented in decision-making, given their unique profile and changing needs as the transactions and the ecosystem grows.

While initial results are still incipient, this case study aims to serve as a starting point for discussions about interoperability in the Latin American region and lead to a broader exploration of other types of interoperability.

A history of mobile money in Bolivia

Bolivia is a country with ideal conditions for mobile money.[1] While mobile penetration has reached 95 per cent,[2] 60 per cent of the population are still unbanked.[3] Its mountainous terrain, expansive territory and relatively low GDP per capita[4] have also limited the appetite of traditional bank branches to establish a ubiquitous presence.

Given these market conditions, Bolivia embraced mobile money at a very early stage. Tigo Money was the country's first provider, launching commercial operations in 2013. Today, Tigo is directly involved in operating most of the value chain, from agents to IT systems, and four bank partners manage trust accounts. Mobile operator Viva (NuevaTel) began offering mobile money in 2015 under a slightly different arrangement. Its partner financial institutions, Banco de Crédito BCP and Banco Nacional de Bolivia (BNB), oversee most of the operation, while Viva offers USSD channel access.

Tigo Money, currently the leading mobile money service in the country, has been evolving since the start. Additional services like bill payments and an e-commerce payment gateway have been added to the initial cash-in, cash-out, airtime top-up and person-to-person (P2P) transfer services, and the interface has become more user-friendly with the introduction of a smartphone app.

In June 2017, Tigo alone had 428,000 active users, accounting for roughly 5 per cent of Bolivia's economically active population.[5] In the same period, bill payments, P2P and airtime purchases accounted for most of its transaction values, with newcomer e-commerce gateway and merchant payment services slated as focus areas for next year. Viva has taken a more conservative approach to promoting mobile money services and currently has a more modest customer base. However, there is still room in the market for it to reach new customers and increase competition.

Over the last several years, the banking sector in Bolivia has been evolving in parallel with the mobile money industry. The bank deposit to GDP ratio increased from 44 per cent in 2011 to around 60 per cent in 2016, and the country now has 13 commercial banks and 30 credit cooperatives.[6]

Today, mobile money providers in Bolivia have the opportunity to complement the services offered by traditional financial services providers, and direct communication between these ecosystems would serve consumers. Globally, in 2017, incoming bank-to-mobile money transfers already represented 9.3 per cent of total transaction values in the system.[7]

1. GSMA Mobile Money programme, 2015, "Mobile financial services in Latin America & the Caribbean: State of play, commercial models, and regulatory approaches".
2. GSMA Intelligence, Q3/2017
3. Global Findex, 2014
4. GDP per capita USD 3,105 in 2016 according to the World Bank; Latin American average USD 8,156
5. According to the 2016 labour force participation rate, World Bank
6. World Bank and ASFI, September 2017, "Reporte De Inclusión Financiera".
7. GSMA, 2018, "2017 State of the Industry Report on Mobile Money".

SPOTLIGHT

Bolivia – A pioneer in mobile money regulation in Latin America

In February 2009, a change in Bolivia's constitution put a strong emphasis on giving the private sector a mandate for social and economic inclusion, guiding financial authorities to develop a strategy that would expand financial inclusion.

In 2011, the Autoridad de Supervisión del Sistema Financiero (ASFI) took on the challenge of increasing financial inclusion in the country. Back then, account ownership was one of the lowest in the region, with only 28 per cent of the population having access to a bank account, according to World Bank's Global Findex data.

Mobile technology for increasing financial inclusion was an immediate and logical option. Mobile penetration had already peaked, and the mobile industry had expressed interest in investing in mobile financial services platforms.

Back in 2011, very few countries in the world had regulated mobile money, so Bolivia's regulators had to innovate. Until this time, Bolivia's financial sector had been characterised as very stable and its regulators as very conservative. Like other countries in the region, adopting a test-and-see approach was not a legal option for Bolivia's regulators. Mobile money operators had to wait for the regulation to be implemented before launching their commercial services.

To achieve greater financial inclusion, regulators aimed to increase competition in segments that were traditionally unserved (or underserved) by the financial sector. The ASFI and the Central Bank of Bolivia (BCB) began a process of open dialogue with the financial sector and other interested parties, such as mobile network operators, to determine how to scope financial inclusion policy and regulation. During these conversations with the industry, some concerns were addressed about the commercial sustainability of mobile money, the security of the mobile channel and how to safeguard customer funds.

On 4 October 2011, the ASFI issued the "Reglamento de Instrumentos Electrónicos de Pago" (Regulation for Instruments of Electronic Payments), creating a new payment mechanism (e-money), a new financial instrument (e-wallet) and an entirely new financially regulated entity (e-money issuer). Latin America would not see another country pass e-money regulation until 2013.[8]

The first e-money issuer licence in Bolivia was granted to Tigo Money in late 2012, which launched commercial operations in 2013. To become a licensed e-money issuer, Tigo Money complied with all the financial regulation related to operational and fraud risk management.

In 2013, the Bolivian Congress approved a new law for the financial system. Implemented in 2014, the law helped to strengthen the country's mobile money sector, updating existing rules for mobile money. Subsequent ASFI resolutions provided flexible requirements for agents and allowed e-money issuers to offer more services, such as over-the-counter transactions, use of ATMs and the possibility of international remittance services.

8. GSMA, 2017, Mobile money in Latin America: An industry taking off

Reaching an agreement on interoperability

The choice to interconnect using the ACCL switch

Tigo Money was driven to interconnect with the traditional banking system to provide users with a seamless bridge between the two sectors. Among other benefits, interconnection offers an additional channel for e-money to cash conversion (and vice versa), providing immediate availability of funds and cost reduction opportunities for all parties involved.

There are several ways to achieve interconnection with the banking sector. Bilateral agreements tend to be more cost-effective, but reaching scale is difficult.[9] Given its ambition to interconnect with a number of banks, Tigo sought to use a switch that provided a one-to-many connection through a single entry point and a single system integration development to reach all hub participants.

The agreement between Tigo and ACCL allows for mobile wallet-to-bank account (A2B) and bank account-to-mobile wallet (B2A) interoperability. This enables customers to send money using a mobile phone number as an account reference to a bank account number from any scheme participating financial institution and vice-versa.

ACCL: Bolivia's Private Bank Association Switch

In 2004, Bolivia's Private Bank Association (ASOBAN)[10] established an independent company, the Clearing and Settling Chamber Administrator (ACCL).[11]

Since 2006, ACCL has operated a Real-Time Gross Settlement (RTGS) switch for banking transfers—one of not more than a handful in Latin America. Clearing runs online 24x7 with three settlement cycles processed a day. As an online solution with continuous upgrades to maintain a robust and scalable system, the ACCL switch was a natural solution for routing mobile money transactions to and from the banking ecosystem.

ACCL has 16 bank members, which handle over 70 per cent of financial assets in the country.

9. GSMA, 2014, "A2A Interoperability: Making Mobile Money Schemes Interoperate".
10. Asociación de Bancos Privados de Bolívia
11. Administradora de Cámara de Compensación y Liquidación

Technical solution

Technical integration began with ACCL sharing its technical specifications with Tigo.[12] ACCL had to adapt its protocols to accept mobile phone numbers as proxies for bank accounts. At the same time, Tigo had to develop connectors for the ACCL switch and accept bank accounts as a reference on their systems, which was considered a 'medium' complexity task. Extensive testing was conducted on both sides before the first commercial transaction was allowed. The overall technical integration process took about six months.

Commercial aspects

Conversations on joining ACCL began in 2013 and took two years to reach an agreement. Initially, the Banking Association had to be convinced to accept a non-bank as a participant of the scheme, as it expressed concern that e-money issuers may not have the same compliance standards as the banks. Since Tigo Money was the first non-bank to attempt to join the ACCL system, it had to assure ACCL that the integrity of the system would not be compromised.

Nevertheless, given the risk-based approach of Bolivia's financial regulators, it was possible to demonstrate that e-money issuers were required by regulation to provide the same level of compliance when exposed to the same risks as a bank (or any other financial institution). In practice, this meant e-money issuers were subject to a similarly robust operational risk management system as the banks when exposed to the same risk levels. All risk management systems are reviewed and approved by the financial regulators.

Commercial negotiations were also challenging. The discussions were influenced by an underlying assumption that the outcome of transaction flows could result in a negative net balance for banks. Therefore, Tigo was required to pay a fee to initiate and receive transactions (B2A and A2B), while member banks only pay for initiating transactions (between banks or B2A).

The role of the regulator

From its inception, e-money was conceived as a complement to the existing financial system. Integration between e-money and the rest of the financial infrastructure was a goal for the future.

In 2013, the Bolivian Congress approved a new law for the financial system[13] that supported operators in gaining access to the financial infrastructure and becoming interoperable with commercial banks on a P2P basis. Among other things, this law brought payment systems administrators and other financial infrastructure providers, such as ACCL, under the jurisdiction of the financial regulator.

The ASFI and BCB followed the negotiations between Tigo Money and ACCL closely, providing guidance when the process stagnated, mostly from ACCL's concerns over giving access to a non-bank (and a type of financial entity). Since Tigo Money was to be as compliant with risk management regulation as any other traditional financial institution, ACCL was finally convinced that giving Tigo Money access would not compromise the security or soundness of its platform.

In summary, three key directives from the regulator were essential to allowing mobile money operators in Bolivia to access financial infrastructure:

- Allowing a market-led approach to interoperability and developing a deep understanding of the concerns of each party, and helping to facilitate a result that is aligned with public policy and commercially sustainable for all parties.
- Taking a risk-based approach to financial regulation that ensured similar risks required similar risk management systems and compliance levels. This established a level playing field and allowed new regulated players to gain access to the financial infrastructure without compromising its soundness or integrity.
- Bringing all relevant financial infrastructure administrators under the same jurisdiction, and engaging in direct dialogue with each of the parties to align their interests with national financial inclusion objectives.

12. ACCL uses a proprietary standard based on ISO 8583. Information exchange happens over XML interchange with a digital signature (SOAP).
13. Ley 393, Ley de Servicios Financieros. Financial Services Bill 393 of 2013, issued 21 August 2013.

Governance

Tigo joined the switch as a participant, accepting the same operational rules as the other financial service providers. However, like a number of other smaller financial institutions that are ACCL participants, Tigo cannot participate in the governance of the ACCL. This is reserved for a limited number of larger financial institutions with voting rights. Given the unique profile, growth, and evolution of mobile money, the absence of voting rights for mobile money providers creates a scenario in which future decisions by the ACCL may not adequately account for the evolving requirements of mobile money providers, and may limit the continued potential of the interoperability arrangement.

Connection to a banking switch and the approval of the ASFI made Tigo the first non-deposit-taking institution in Bolivia to be granted access to a central bank settlement account. Tigo has currently delegated the management of this account to one of its partner banks, given other factors that make this arrangement more cost-effective for both parties.

Central bank settlement accounts

- Central bank settlement accounts are special accounts held within a country's central bank system. Only regulated financial institutions are allowed to have this type of account. At the end of each cycle, the settlement account must hold the net value that each institution owes to other institutions.
- A settlement account also gives financial institutions access to discount window borrowing—a special line of short-term credit provided by the central bank should an institution fail to have enough balance in the settlement account at the close of a settlement cycle.
- Since Tigo is not a credit institution and does not intermediate customer funds, the 'failure to settle' risk is greatly reduced and all settlement obligations can be met. For the same reason, the discount window borrowing is usually not available for non-financial institutions.

Lessons learned

Bolivia's unique market conditions have driven a strategic interest in interoperability by the banking sector and have shaped the nature of interoperability sought by the mobile money industry. From the perspective of the industry, integration with the ACCL switch can be evaluated from several angles:

- **Technical capability:** *Positive*. Because the ACCL is quite an advanced switch, technical integration was straightforward. Tigo considered its investment in software development to be relatively low.

- **User experience:** *Positive*. There has been no disruption to the user experience on either side. Mobile money users select bank recipients as an extra option on the P2P menu, while bank users select mobile money recipients as if they were a special type of bank account.

- **Technical scalability:** *Positive*. ACCL infrastructure is modular and easily scalable.

- **Risk management:** *Positive*. Tigo benefits from entering an operational switch with existing risk management procedures, which it has deemed sufficient for mobile money transactions.

- **Regulatory environment:** *Positive*. Regulation is enabling. The ASFI helped to facilitate discussions at critical periods upon request, with positive results for all parties. The regulator allowed Tigo to have access to central bank settlement accounts. At the time of the agreement interoperability was not mandated.

- **Commercial model:** *Negative*. Tigo pays fees for initiating and receiving transactions, whereas bank members pay only for initiating transactions. Transaction fees are priced similarly to banking fees. Tigo agreed to asymmetric commercial conditions because of the strategic importance of having access to the switch. With high volumes of low-value transactions, this could be an issue in the future.

- **Time to market:** *Negative*. Initial conversations to completion took three years. While comparable discussions in Jordan took about two years, (documented in a case study by the GSMA),[14] there is room to improve the speed of alignments.

- **Agreement framework and governance:** *Negative*. Despite all switch participants equally obeying the same set of rules, Tigo has joined a switch with an agreement framed around the traditional needs of the banking sector. The commercial agreement is asymmetric, transaction costs may be high and Tigo has no mandate for governance.

14. GSMA, 2016, "The long road to interoperability in Jordan: Lessons for the wider industry".

Uptake and the way forward

Since the interoperability integration became commercial in September 2016, Tigo has taken a light approach to driving uptake, with no specific marketing campaign for its new service. This was mainly to give Tigo time to understand customer behaviour and identify a target base. However, an interesting use has emerged. Agents were able to improve liquidity management in the distribution network by being allowed a larger balance on their e-money accounts, provided that deposits come to/from Automated Clearing House (ACH) transactions.

The overall adoption of transactions through the ACCL switch has become another important issue. Despite a 15 per cent year-on-year increase in transaction volumes from 2015 to 2016, cash withdrawals are still preferred to ACH transfers.[15] Tigo plans to promote the interoperability feature with targeted below-the line messaging, but wider adoption also depends on the efforts of the financial system to improve the overall user experience and home-banking penetration. Regulators are optimistic that A2B and B2A interoperability will have a network effect and boost the level of financial inclusion the country.

An alternative to a better user experience has emerged at the beginning of 2018. Bank customers can now initiate a B2A transfer directly from the bank's ATM, which eliminates some of the friction in comparison to the internet banking experience.

15. Banco Central de Bolivia, Informe De Vigilancia Del Sistema De Pagos 2016.

The need to evolve the interoperability arrangement

Having an interoperability agreement is preferable to not having direct access to the financial system, but it should be noted that the commercial conditions for Tigo are not optimal–particularly the pricing structure and lack of access to switch governance. To ensure the solution for A2B and B2A remains sustainable as transaction flows gain momentum, this imbalance should be addressed before it becomes a barrier.

While we were preparing this case study, Entel was planning the launch of its mobile wallet. It was recently announced that Entel, the fourth mobile money player in Bolivia, was granted an e-money licence.[16] With the road already paved, Entel's wallet should have an easier integration with ACCL, and this will allow full interoperability in Bolivia between all financial and non-financial institutions.

Other markets in Latin America may see the same industry appetite for bank interoperability as in Bolivia, and would benefit from the market-led interoperability agreements willingly negotiated between parties there. A mobile money player, the banking system and the public sector all worked together to create Bolivia's framework for interoperability. While there have been similar market-led attempts to achieve mobile money-to-bank integration elsewhere, progress has been slow, and this can suffocate the growth of mobile money and defer investments.

Tigo is particularly focused on improving user experience. For instance, to eliminate the barrier of acquaintance to a more complex home banking system, customers should be able to request funds from their bank account directly from Tigo's mobile money app. Switches are best placed to incorporate this "pull" feature, replacing the limited bilateral agreements in place.

Bolivia's next big step? Moving beyond account-to-account interoperability. Unrestricted access to ATM and point-of-service (POS) networks around the country would benefit all ecosystem participants, provided the right agreements are in place. With examples already documented in other parts of the world,[17] another challenge for Bolivia's mobile money providers and regulators is on the way.

16. http://www.la-razon.com/index.php?_url=/economia/ASFI-autoriza-Entel-servicio-billetera_0_2575542485.html
17. GSMA Mobile Money programme, 2016, "The long road to interoperability in Jordan: Lessons for the wider industry".

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