

Colombia: Time for technological change in the mobile money market

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Public policies to boost financial inclusion in Colombia started in 2006 with the creation of the program “Banca de las Oportunidades” (BdO). Efforts have been substantial, including the adoption of a National Strategy for Financial Inclusion that permits coordination of the different public organizations working on this subject. Some examples of changes made during these years include the authorization for financial institutions to deliver services through agent banking or correspondents (CB), the simplification of the process of Know-Your Client (KYC) for deposit targeting the bottom of the pyramid, financial literacy campaigns and recently opening the mobile money market to new providers (before Colombia had chosen a bank-based model)¹.

Colombia achieved positive results in only a few years, in terms of access, 100 percent of municipalities in the country (1.102) have at least one access point². There has been an increase in adult’s savings accounts; thanks to the Government’s efforts to deliver the CCT

programs through financial services³, from 51 percent of adults with at least one financial product in 2006 to 72 percent in 2014⁴. Nevertheless, during this period of time, in terms of usage, the percentage of dormant accounts⁵ grew (in 2011 the percentage was 43 percent increasing to 54 percent in 2014)⁶. This means that existing products do not fulfil client’s expectations, that products are too expensive⁷ or that their ecosystem is not complete.

According to the deployment tracker of GSMA’s Mobile Money for Unbanked (MMU), there are five deployments in Colombia⁸ but just 2.2 percent of adults have a mobile account⁹. For this reason, in an effort to reach rural areas in the country, the government issued the law 1735 in 2014, as part of the National Strategy for Financial Inclusion¹⁰. This law creates a new category of institution with the authorization to offer Mobile Financial Services (MFS). It opens the door, as it increases competition on the market, to new institutions offering electronic

*The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of Tagattitude.

¹ BTCA (2015). Country Diagnostic: Colombia by BFA under supervision of Marulanda, B.

² As access points are considered: branches, CB and ATMs.

³ CGAP (2015) Going Mobile with Conditional Cash Transfers: Insights and Lessons from the payment of Familias en Accion through DaviPlata wallets in Colombia.

⁴ Asobancaria. Bancarization Reports (2008-2014)

⁵ It includes saving accounts, simplified accounts and electronic deposits.

⁶ BdO & SFC (2015). Financial Inclusion Report

⁷ Financial Watchdog of Colombia (SFC) (2015) Demand side survey

⁸ Ahorro a la Mano (Bank BanColombia), Daviplata (Bank Davivienda), DDDedo (VTU Colombia), Mi Plata (CoopCentral) and Transfer Aval (Aval Group).

⁹ Global Findex (2015).

¹⁰ See BdO (2014). “Gobierno Nacional presentó Estrategia de Inclusión Financiera”

deposits. New actors like MNOs and network air-time sellers¹¹ that for years have been waiting to have a role as providers of mobile money deployments, will be able to offer these services.

This competition between providers is affected by the dominant position of MNOs and it could have effects on the development of the mobile money market¹². According to the Ministry of Technology and Telecommunications of Colombia (MinTIC), the mobile operators market is highly concentrated, with 93 percent of the market belonging to three MNOs. At the end of 2014, Claro had 54 percent of the market, Movistar 23 percent and Tigo 17 percent, which gives them a strong position with regards to the financial institutions offering mobile financial services, especially to Claro.

Deployments of mobile money in Colombia mostly use STK (Sim Tool Kit); under this technology, actors (end user and the service provider) become technology dependent because they interact exclusively through MNO's networks. For this reason, since 2011, the Communications Regulatory Commission (CRC) established by resolution maximum rates per SMS, i.e. for 2014 the rate was established as US\$0.0005 and US\$0.0003 for 2015¹³. However discussions between the telecom and banking sector are still in place¹⁴.

Under the 2014 resolution, the CRC suggested that Mobile Financial Services Providers (MFSP) consider using USSD technology to deliver services. However, migrating from STK to USSD

technologies will not solve the dependency on MNOs and it increases risks. Security under USSD is not end-to-end, meaning that security is built up on individual element's security¹⁵. For this reason some financial institutions are looking into applications¹⁶, some of them using reverse charge models.

On the fourth quarter of 2015, the mobile association (Asomóvil) reported that 54 percent of users have accessed the internet on their mobiles¹⁷, however, this figure is inflated by the ownership of several mobiles per person¹⁸ and by the free access to whatsapp and facebook that later became the internet.org initiative. The use of an application has different consequences; it targets people with smartphones who mostly are not at the bottom of the pyramid, and it relies on the type of network that is locally available (2G, 3G, and 4G). In Colombia 3G is mostly available in municipality seats and 4G coverage is only available in main cities as most MNOs mostly rely on Claro's infrastructure¹⁹.

For deployments targeting the bottom of the pyramid and looking to increasing financial inclusion, technological choices are reduced to those available on a simple feature phone (IVR, SMS, USSD, STK and NSDT). The main trade-off providers have to face is security against business model and against user experience. For non MNO providers, business models can be affected by the cost of accessing technology (i.e. SMS, USSD, STK) making it harder to offer these services to the bottom of the pyramid²⁰.

¹¹ See Moreno Sanchez, M. (2015). New financial inclusion innovation in Colombia: Electronic Deposits. Blog AFI (February)

¹² BBVA Research (2014). "Inclusión Financiera y el papel de la banca móvil en Colombia: desarrollos y potencialidades"

¹³ Given the recent instability on the exchange rates in Colombia, it was used an average for the 2nd semester 2014 of the official exchange rate of the Central Bank of Colombia.

¹⁴ CRC (2015). Response document over the comments to: "Reviewing mobile networks access charges".

¹⁵ FinmarkTrust (2008) & Osipitel (2012)

¹⁶ See for example Aval pay.

¹⁷ See Asomóvil (2015). "Evolución del Negocio Móvil: 4to Trimestre de 2014".

¹⁸ Events as Uber entering into Bogota's market increase the number of smartphones owned by a single person, in this case the car owner (which in many cases is different than the driver).

¹⁹ See

<http://www.claro.com.co/wps/portal/co/pc/person/as/ayuda/mapa-cobertura-movil> & <http://www.tigo.com.co/mundo-tigo/mapa-cobertura>.

²⁰ See for example CGAP (2015) Going Mobile with Conditional Cash Transfers: Insights and Lessons

In this scenario NSDT^{TM21} is a technology to be considered. It has three main characteristics: agnostic to MNOs, secure and easy to use. The use of the audio channel makes this technology agnostic to MNOs while offering two factors authentication²² security. In addition, NSDT offers a friendly user experience. As CGAP (2015) and InterMedia (2014) FII show, simple user experience is key to encouraging the use of the MFS.

At the same time NSDT highlights the role of CB. As experiences²³ show, people at the bottom of the pyramid prefer to transact directly with a CB. Having a person in front of them makes them feel more confident about the outcome of the transaction. With NSDT the role of the CB is maintained, it assures more transactions over this channel, and it encourages the use of the wallet.

Table 1. Business model STK

STK (US Dollars)				
SMS	2014	2015	2016	2017
Price fixed by CRC per SMS	0.005	0.003	0.002	0.001
6 SMS	0.027	0.016	0.009	0.005
17 SMS	0.077	0.045	0.026	0.015

Source: CGAP (2015), CRC, BanRep, author's calculations.

Finally, the business model under NSDT is more attractive. Table 1 shows the business model for STK taking into account two scenarios: a. The number of SMS used per transaction by an average deployment (6 SMS), and b. Daviplata's case,²⁴ which requires an average of 17 SMS to perform a transaction²⁵.

Table 2 shows the business model for NSDT under two scenarios: a. Transaction performed without receiving a notification by SMS²⁶ and b. Transaction performed with a notification SMS

from the payment of Familias en Accion through DaviPlata wallets in Colombia.
²¹ NSDT technology offered by TagPay. NSDT uses the voice channel to authenticate transactions by sending back an audio OTP (AOTP), to the platform. NSDT is a two factor authentication technology.
²² NSDT combines the use of two channels HTTPS for requesting PIN information and voice channel for sending the AOTP. To see videos of NSDT visit <https://vimeo.com/tagpay>

confirming the transaction. The average duration of an NSDT call is 7 seconds and an additional process of 10 seconds was added for the exercise.

Table 2. Business Model NSDT

NSDT (USD Dollars)		
Call's duration	Voice (2015)	Voice + 1 SMS
7 sec.	0.005	0.007
10 sec.	0.007	0.009

Costs of call is an average of different VOIP providers. The SMS price is the maximum price fixed by the CRC per 2015.

The difference for the business model is remarkable. The STK costs, using 6 SMS per transaction, reaches today's cost for NSDT only in 2017, and this without taking into account reductions on the VOIP price on the following years. For deployments requiring more SMS per transaction, as Daviplata's, the business model is more expensive under STK.

In conclusion, it is clear that the Colombian mobile money market requires more competitiveness on the providers' side. However, to make this possible, non-MNO providers must make a smart decision at the technological level, in order to balance the market. In the past, non-MNO providers have taken innovative decisions thereby designing new products. It is now time for them to take a step further and use innovative technologies to back up these products.

²³ See i.e. Bangladesh, Kenya or Pakistan.

²⁴ See CGAP (2015). Going Mobile with Conditional Cash Transfers: Insights and Lessons from the payment of Familias en Accion through DaviPlata wallets in Colombia.

²⁵ The SMS price took into account is the maximum price fixed by the CRC for each year.

²⁶ Notifications and alerts can be configured following deployments requirements. They could be sent by email, SMS, social network messages, etc.