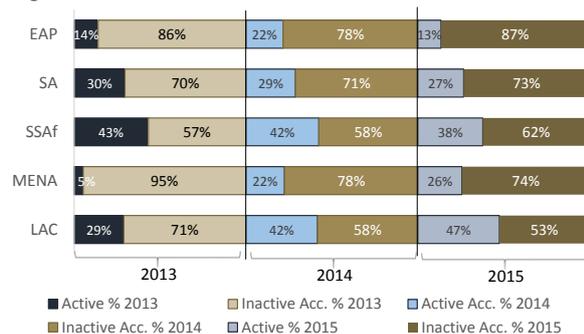


OTC vs NSDT: A new perspective on solving the Mobile Money usage problem

By Ana Maria Garcia B.*

One of the biggest challenges for all mobile money deployments is user adoption. Data from the 2015 GSMA State of The Industry Report on Mobile Money (SOTIR)¹ shows that even though registered customer accounts grew to 411 million, the percentage of active accounts decreased between 2014 and 2015 in three of the five regions that reported data for both years (Sub-Saharan Africa, South Asia, East Asia and the Pacific), as seen in Figure 1². Despite efforts³ to improve usage of wallets⁴, it remains one of the biggest problems.

Figure 1. Dormant & Active Mobile Money Accounts across regions



Source: GSMA – SOTIR 2013, 2014 & 2015

While many users in the past have substituted Over the Counter (OTC) transactions with a mobile wallet, this trend is slowing as the annualised growth rate of OTC transactions has decrease from 102 percent in 2013, to 33 percent in 2014, to 22 percent in 2015. However, there were still roughly 37.4 million unregistered customers who performed formal OTC transactions in June 2015⁵. This shows that OTC transactions still fill a need that is not being met by current mobile deployments. More specifically, OTC⁶ strategies started to be used by banks and Mobile Network Operators (MNOs) to alleviate congestion at banking agencies, as well as to achieve the scaling of the MNO at an early stage.⁷ However, in the long term, relying on an OTC strategy reduces a deployment's earnings⁸ as well as prevents greater⁹ financial inclusion¹⁰ across the entire market.

Main issues of OTC usage:

1. **Reduction of the providers' potential income:**
 - a. **No stored value:** "A well-functioning stored value functionality would encourage more savings and wallets being used for short term

*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. You can address all your comments to ana.garcia@tagattitude.fr

¹ GSMA (2016). "State of The Industry Report 2015. Mobile Money" http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/03/SOTIR_2015.pdf

² It is important to highlight that the existing gaps between regions on this market persevere, i.e. Sub-Saharan Africa counts with 54 percent of mobile money accounts and Latin America just has 4 percent.

³ According to the SOTIR 2015, in 2015, there were 411 million mobile accounts and in 32 countries there were more mobile accounts than banking accounts.

⁴ Latin America and the Middle East & North Africa have done remarkable progress as it can be observed on Figure 1.

⁵ These figures are in fact higher, as service providers cannot track informal OTC.

⁶ In this paper, the GSMA definition is used: An OTC transaction is conducted by the agent using his account on behalf of the

customer. See Almazan, M. (2015). "OTC & Mobile Money: Making Sense of the Data". GSMA blog, January.

⁷ Bakhshi (2014). «Be aware of OTC Trap». Microsave Blog, May. Available here: <http://blog.microsave.net/beware-the-otc-trap/> consulted last time on 18/01/16.

⁸ See for example Uganda's case. Ogwal (2014). "The OTC Trap – Impact on the Business Case fur Uganda's Mobile Network Operators". Microsave Blog available here: <http://blog.microsave.net/the-otc-trap-impact-on-the-business-case-for-ugandas-mobile-network-operators/> consulted last time on 18/01/16.

⁹ Bakhshi (2014). "Be aware of OTC Trap: Are the Stakeholders Satisfied?" Microsave Blog, May. Available here: <http://blog.microsave.net/beware-otc-trap-are-stakeholders-satisfied/> consulted last time on 18/01/16

¹⁰ Using Radcliffe and Voorhies terminology, a deployment remaining on OTC transactions will be stocked on stage 2 of the digital pathway, making it almost impossible to climb to the other stages. See Radcliffe, D. & Voorhies, R. (2012) "A digital Pathway to Financial Inclusion". Available at <http://ssrn.com/abstract=2186926> consulted last time on 25/01/16.

financial management by customers”¹¹. With enough data, mobile providers would be able to create new algorithms that would allow them to offer new cross-selling products, encouraging financial inclusion and more revenue streams.

The other side-effect is on direct revenues. As the SOTIR 2015 states, revenues earned by float interests remain important. This would be higher if users kept more stored value on their accounts.

- b. **A commission’s war**¹²: Without the use of wallets, the selection of the provider used for transactions is made by the agents rather than the clients. The latter are indifferent to the choice. However, agents will choose to use the provider, who offers them the highest fee¹³.
 - c. **No churn reduction**: End-users cannot perceive the differences and benefits between services as they do not use wallets. Hence, they do not have loyalty incentives to keep the same provider.
- 2. No creation of ecosystem**¹⁴: Agents are the physical backbone¹⁵ of Mobile Financial Services (MFS), however they do not encourage the use of wallets, even if agents receive a commission for opening accounts, as it goes against their own interests. As long as clients start to perform self-initiated transactions with wallets, agents’ business will decay. As a result, without the use of wallets, end-users will not benefit from a full range of products and services offered by providers, preventing the ecosystem development.
- 3. Regulatory matters**: At this point, it is necessary to identify two different OTC strategies.

- i. **Formal OTC**: The service provider (SP) authorizes OTC transactions for reaching scale, i.e. Pakistan.
- ii. **Informal OTC**: It is not authorized by the regulator or the SP; however, OTC transactions are performed as an organic answer of market necessities, i.e. Bangladesh.

With OTC transactions, end-users face several risks that may become regulatory concerns.

- a. **Customer protection**: OTC users face disclosure requirements issues and a general lack of transparency. In some cases, since end-users are not aware of fees, agents charge them an extra and unofficial one allowing agents to receive double fees, one from the service provider and the other from the end-user. Therefore, agents have no incentives to communicate official fees, thus, reducing transparency and impacting negatively the client’s experience.
- b. **ML/FT risks**¹⁶: With OTC transactions the customer identity is unknown as verification may not occur¹⁷. The origin of money could be disguised, as there is not a CDD procedure, additionally as mobile money transactions are performed in real time it increases the rapidity risk.

In general OTC transactions affect all stakeholders. Hence the importance to understand the main reasons of its wide usage. The following section will discuss this topic.

OTC vs wallet usage

There are different factors that may explain the high usage of OTC transactions. In fact as the Financial Inclusion Insights Surveys (FIIS) show, there is a correlation between maturity of the market and wallet usage¹⁸. Markets like Kenya, Tanzania and Uganda present the lowest rates of

¹¹ Mass, I., Gupta A., Varghese A. (2015). “Making Digital Financial Services Relevant – Part 3”. MicroSave blog, October. http://www.microsave.net/resource/making_digital_financial_services_relevant_part_3#.Vpy1K krKUK

¹² This phenomena is presented on markets where agents are not exclusive to one MFS provider.

¹³ According to Helix and its Agent Network Accelerator (ANA), markets like Tanzania and Pakistan have the lowest rates on agent exclusivity, and Zambia the highest. However, Tanzania presents higher levels of dedicated agents, which could be explained by the multiple revenue streams coming from different MFS providers. More information on: <http://www.helix-institute.com/data-and-insights>.

¹⁴ Bakshi, P, & Wright, G. (2015). “Over the Counter (OTC) Transaction. In Whose Interest – Part 3” http://www.microsave.net/resource/over_the_counter_otc_transaction_in_whose_interest_part_3#.VqJmlPkrKUn

¹⁵ Paraphrasing SOTIR 2015

¹⁶ Di Castri, S.; Grossman, J. Sihin, R. (2015). “Proportional risk-based AML/CFT regimes for mobile money: A framework for assessing risk factors and mitigating measures”. GSMA. August.

¹⁷ Providers offering a formal OTC service record end-user information for transactions performed at the agent, usually on paper.

¹⁸ InterMedia (2015). «OTC Facts, Figures and Implications across Markets». Presentation.

OTC transactions compared to Bangladesh and Pakistan¹⁹. Also they show that early adopters are more educated, live in urban areas, and they live above the poverty line. OTC users have the opposite profile of early adopters²⁰.

Different factors can impact the wallet adoption: According to the same surveys in Tanzania and Kenya, the main barrier to registering for a wallet is not having a national ID²¹. In Pakistan, a less mature market, and in spite of its Government's efforts to use the information on the SIM card for the KYC process, the usage of wallets remains the biggest challenge²². Furthermore, in Bangladesh, low wallet usage is due to a lack of perception of difference between having an account and performing OTC transactions and because wallets usage is perceived as too difficult. In Uganda, data shows that the lack of wallet adoption is due to a low number of access points²³.

There are also other factors that impact wallet adoption:

- 1. Diversity of the target market:** According to Ignacio Mass,²⁴ the mass market can be classified in different categories, each having different necessities. Therefore it is necessary to offer different services and products to such diverse population. This diversity in market should also be considered from the technological viewpoint; the same technology is not suitable for all segments of the market.
- 2. Literacy:** The higher the education, the higher the probability of performing self-initiated transactions. User interfaces (i.e. USSD or SMS) can be hard to understand especially for illiterate and first-time users²⁵. For example, Pakistanis have issues writing SMS in Urdu,

specially using Chinese phones²⁶, as well as Bangladeshis, where menus are written in formal English or Bengali. As one female user said: *"The Bangla [Bengali] language they use in the mobile phones is very difficult. It should be as simple as the informal language we usually use."*²⁷

- 3. Technology barriers:** The number of menus to choose from for each transaction negatively impacts the adoption rate when using USSD technology. This is not only because of the language used, but also because of the recurrent time-out sessions²⁸. As a male bKash user said: *"Normally to send money through bKash there is a number *247#. If I want to send the money to any retailer or cash out the money, we need to go to several options step by step. (...) My point is as we have to follow five to six steps; several times the network goes down. Then we have to restart the steps from the beginning. So it would be convenient for us if we could complete the task in one to three steps instead of five to six steps."*²⁹
- 4. Trust in the agent:** In general, people living below the poverty line are risk adverse, especially with money transactions. For instance, they prefer doing transactions in presence of an agent that they trust and who can help them if something goes wrong with the transaction. OTC transactions are the closest model to mechanisms they are used to, i.e. money transfers with post offices and couriers³⁰.

OTC strategies can be perceived in the short term as a good strategy to reach scale, however in the long term they represent more losses than

¹⁹ According to FII, 13 percent of surveyed people in Kenya use OTC, 14 percent in Tanzania and 22 percent in Uganda. In comparison to 77 percent in Bangladesh and 96 percent in Pakistan.

²⁰ Ibid.

²¹ Ibid.

²² According to the Central Bank of Pakistan, in September of 2015 there were 13 million mobile accounts and just 39 percent were active mainly because of Easy Paisa, the leading deployment of the country, which counts for 17 percent of active accounts in its portfolio. However, it is important to say that activity in accounts had risen from 20 percent in March 2015 when it reached its lowest level.

²³ FII on OTC.

²⁴ Mass, I. & Shukla, V. (2015). "Making Digital Money More Relevant, More Often – Part 1". MicroSave blog. http://www.microsave.net/resource/making_digital_money_more_relevant_more_often_part_1#.Vuggq1_krKUK

²⁵ CGAP (2015). "Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks". Focus Note No. 103.

²⁶ See CGAP (2015). "Mobile Money in Pakistan: From OTC to Accounts, Part 1" <http://www.cgap.org/blog/mobile-money-pakistan-otc-accounts-part-1>

²⁷ InterMedia (2014). "Bangladesh: Quick insights Report Mobile Money User and Non User Study. Wave 1". <http://finclusion.org/wp-content/uploads/2014/04/FII-Bangladesh-Wave-One-Consumer-Voices-QuickSights-Report.pdf>

²⁸ CGAP (2015). "Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks". Focus Note No. 103.

²⁹ InterMedia (2014). "Bangladesh: Quick insights Report Mobile Money User and Non User Study. Wave 1".

³⁰ CGAP (2014). "Consumer insights from Bangladesh: Is a transition to Mobile Wallets Underway?" Presentation. <http://www.slideshare.net/CGAP/is-a-transition-to-mobile-wallets-underway-in-bangladesh>

earnings for the stakeholders. But then again, OTC adoption responds to a market necessity, given the target population. For this reason it is necessary to move towards a client-centric model.

The Proposition of a New Model

The majority of mobile money models rely on the agents' performance. However, the current fee system does not create incentive for the promotion of wallet adoption. Using Graham Wright's words, "the natural educators are the agents"³¹ which emphasized the opportunity of capitalizing on the agents, which has not been done yet.

TagPay³² offers a different model highlighting the role of the agent and, at the same time, incentivizing the use of wallets, through NSDT^{TM33}. Under this model, clients are able to approach the agent in order to perform all types of transactions (CICO, P2P, P2B, enrolment, etc.) using its own wallet (major difference to OTC). TagPay offers the ideal situation where end-users go to the agents to perform transactions, while using their own wallets³⁴.

The main advantages of the TagPay model are:

1. For the end-user:

- a. Usage: The NSDTTM user experience is intuitive. Agents (and merchants) lead the transaction. The only actions performed by the end-users are typing their mobile phone numbers and PIN codes onto the POS³⁵. Since learning numbers is easier than reading menus, NSDTTM encourages the use of wallets³⁶ for first users and low literate people.
- b. Replicating client behaviour: Paying "under the agent's supervision" is similar to the informal mechanism that end-users are used to; the

radical difference is that they are using the clients' wallets, digitizing information and using the ecosystem. Paying at agents and signing the transaction with NSDTTM is a good pathway towards wallets, especially for the low income, illiterate and elder users.

- c. Universality: NSDTTM can be used on every phone available on the market. Since this technology authenticates the user with the sound channel, there is no need to download an application and there is no minimum technological requirement for the mobile phone. The phone simply needs to have an active SIM.
- d. Technological ecosystem: TagPay offers a technology that can adapt to each segment of the mass market. More specifically, NSDTTM allows illiterate and first-time users to perform transactions at an agent. But, the goal is to offer a complete set of technologies that can suit the needs of different segments of the mass market³⁷.
- e. Fraud reduction: As the end-user types his phone number and his PIN code directly into the agents' terminal³⁸, the probability that a third party can have access to the end-users information is reduced³⁹. All this information is digitized on the platform and the only person with rights to access to the client's information is the administrator of the deployment. Furthermore, transparency on agent fees is provided. After performing a transaction with NSDT, end-users will receive an SMS with all details of transaction (with wallets and with cash) including agent fees if they apply. As well, in certain transactions, i.e. bill payments, a confirmation screen will appear before the

³¹ Bakshi, P, & Wright, G. (2015). "Over the Counter (OTC) Transaction. In Whose Interest – Part 3"

³² TagPay is a mobile-centric platform that works with every mobile phone. More information on <http://en.tagpay.fr/>

³³ NSDTTM (Near Sound Data Transfer) is Tagattitude's proprietary technology, which authenticates users through the sound channel. As NSDT is only used by the TagPay platform, in this document NSDT and TagPay are used indistinctively. For more information on how NSDT works please see the videos on the following link: <https://vimeo.com/123424896>

³⁴ As it was mentioned at the beginning, in this paper the GSMA's definition for OTC is used. The Helix Institute uses another definition which includes all transactions performed at the agent, using agents or end-user accounts indistinctly.

³⁵ User experience with NSDT is similar to the user experience when paying by a banking card; the merchant/agent starts the transaction,

entering the amount to pay, afterwards the end user enters his phone number and pin code.

³⁶ See Netcash's video report, a TagPay deployment in Zimbabwe <https://vimeo.com/145113656>

³⁷ I.e. TagPay offers a broad technological ecosystem: It includes USSD, IVR, SMS, App and NSDT that can be used in different circumstances.

³⁸ The TagPay model encourages the end-user to type directly his information into the terminal.

³⁹ Third parties as employees of outsourced companies or even agent's employees may try to have access the personal data of end-users in order to obtain clients' funds. Clients in Uganda, Bangladesh and Nigeria have already reported to receiving scam calls and SMS.

payment including fees charged for the transaction.

2. For the agent:

- a. Fees and commissions: Under the model proposed by TagPay (using NSDT), agents have the incentive to promote the use of wallets by end-users. The platform offers the possibility of customizing fees and commissions, i.e. giving higher commissions for transactions that use the end-user's wallets rather than a simple OTC. Under this model, the more transactions done with the end-users' wallets, the better it is for agents and for the service provider.
- b. Agent interface: TagPay needs an application that sends the information entered on the terminal to the platform and also for performing the NSDT authentication. This application can be downloaded onto different terminals⁴⁰. It offers an easier and faster experience for agents, reducing the time it takes to make a transaction and improving the overall user experience.

3. For the service provider:

- a. Business Model:
 - i. *Revenues*: According to the same report of GSMA, 16.5 percent of deployments declared having derived most of their direct revenues from customer fees⁴¹. Interest received for the float must also be considered (independently from the regulation associated to this revenue). Under the TagPay model, both revenues increase. As the usage of wallets is incentivized, fees increase too. All cash that used to be used for OTC transactions is now digitized and placed into the wallet, thereby increasing the float and, consequently, the interests received.
 - ii. *Costs*: According to SOTIR 2015, agents represent the biggest costs for service providers. In 2015 the top ten providers paid on average 54.4 percent of revenues on agent commissions. This high cost could be a consequence of the commission war explained above. Under the TagPay model,

the decision on the service provider used is taken by the end-user, as he is using his own wallet to perform the transaction. The war of agent churn disappears.

- b. Ecosystem: TagPay allows the deployment to develop a diversified ecosystem⁴². The service provider is able to manage an agent network but also a merchant network. As NSDT™ uses a software downloaded onto a terminal, it also makes for an easier merchant experience. In the case of an NSDT™ merchant payment, the experience is close to that of universal card payments⁴³.
- c. Educating agents: As said before, agents have a key role to play for Mobile Financial Services. For this reason TagPay incentivizes the use of agents as an educational loop. For a deployment, it is easier to empower and educate the agent network rather than reach the end-user, as the former is in direct and continuous contact with the end-user. Providing education to agents, on privacy, the importance of using a wallet rather than cash, as well general good conduct codes, is fundamental. As information received from peers has a notorious effect on people⁴⁴, using agents as educational points is a radical way of changing the model.

In conclusion, there are several factors that may affect the usage problem in mobile money adoptions, but proximity technologies such as NSDT™ offer an alternative solution to this issue. In general, having a person to conduct the transaction offers great comfort, especially when doing a financial transaction at the bottom of the pyramid. However, as stated above, the goal is to offer a complete technological ecosystem to suit the necessities of all segments of population on the mass market.

⁴⁰ This software can be downloaded onto terminals, as well as any PC, Android Smartphone and MobiWire and Ingenico POS.

⁴¹ With different behaviours across regions. Asia and Latin America have different ecosystems and have a greater emphasis on business fees.

⁴² TagPay's functional ecosystem includes: money transfers (accounts and in cash), air time top up, bulk payments (salaries, and credits),

grant payments, bill payments, merchant payments, cash collection, among others.

⁴³ See video –report on Pepele Mobile a TagPay deployment in RDC. <https://vimeo.com/142555794>

⁴⁴ Bursztyn, L., Ederer, F., Ferman, B., Yuchtman, N. (2014). "Understanding Mechanisms Underlying Peers Effects: Evidence from a Field Experiment on Financial Decisions".