

Mobile banking tool for social inclusion and economic development in Côte d'Ivoire

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Abstract

Social economic development cannot be achieved in a sustainable manner with the marginalization of a large segment of the population that is excluded from the traditional banking and financial system. The launching of mobile banking as a lever for a new banking economy in an environment characterized by a strong penetration of mobile telephony is undeniably an opportunity to achieve a better integration of the banking and financial excluded in an economy. Despite its innovative character, in Côte d'Ivoire, the volume of transactions via mobile is very low compared to that of banks. Mobile banking remains a means of hoarding, and the more money saved, the greater the risk to banks in terms of resource collection. Moreover, cyber-attacks in the virtual financial space, mobile banking, contribute to slow the inclusion of populations. In this perspective, communication can contribute to raising awareness on the one hand of the opportunities linked to the services of mobile banking (saving, security of money transport, mobile payments, flexibility of withdrawal and deposit operations, Transfer of money to a third party, the possibility of withdrawal from his bank account ...) and on the other hand the measured perception of the risks of cybercrime on mobile banking operations. It also allows for greater visibility of the activities of the Platform against cybercrime. For greater efficiency, it is necessary to implement a real communication strategy.

Keywords: Mobile banking, social inclusion, economic development

1. Introduction

The rate of banking in the countries of the South and the banking and financial exclusion rate in the northern countries are inversely proportional (Peachey, Roe: 2004). Approximately 10% of the populations of industrialized countries are excluded, while in developing countries only 10% have access to them. Côte d'Ivoire's ambition is to be an emerging country by 2020. The question of the economic inclusion of unbanked populations is therefore acute. The efforts provided have led to economic results that translate into GDP growth (MPD, 2016, p.17), estimated at 10.7% in 2012, 9.2% in 2013, 8.5% in 2014, 9.5% 2015; this is an average of 9.4% higher than the 2012-2015 according to NDP (National Development Plan) forecast. "Not only has Côte d'Ivoire kept its position in the top 10, but is ranked second among the reformers at the world level and is at the top of the countries of the West and Central Africa zone," said the director of the World Bank operations for Côte d'Ivoire, Ousmane Diagana (Doing business report: 2015). But this strong growth contrasts with social data, which translates into a poverty rate of 46.3%, which is lower than in 2014, estimated at 48.9%.

In addition, Côte d'Ivoire ranks in the category of countries with "low" human development declines and ranks 172th in the world HDI, with a score of 0.45 out of 1 (UNDP, 2014). It is therefore necessary to ask the question of the financial inclusion of this mass of bloodless population. The expansion of mobile telephony and mobile banking is a credible alternative. Indeed, the number of subscribers to mobile telephony rose from 16 million in 2011 to 24.5 million by the end of 2015, a penetration rate of 100% (ICT4 Africa, 2016). Among them 7.2 million has mobile payment accounts. The number and holders of mobile payment account (24%) is greater than the holders of bank accounts (15%) in 2014 (World Bank report). In the first half of 2015, receipts on withdrawals, Transfers and invoice payments reached CFAF 17 billion, or about \$ 28 million, according to the World Bank. The Ivorian government, on the other hand, has the volume of mobile transactions between CFAF 8 and 17 billion (16 and 28 million USD) per day. How can the promotion of mobile banking help promote banking inclusion in Côte d'Ivoire? What are the obstacles to the promotion of mobile banking?

2. Methodology and reference theories

The main objective of this paper is to show that the promotion of banking through mobile banking can promote banking inclusion in Côte d'Ivoire. Specifically, it is a question of identifying the main obstacles to banking in Côte d'Ivoire, to take stock of the communication strategies implemented in order to fight cybercrime in the field of mobile banking, And finally to propose approaches to foster behavior change towards greater banking in a secure virtual environment.

From a methodological point of view, this paper is the result of the analysis of the disaggregated data extracted from studies obtained from documents collected from the ARTCI (Autorité de Régulation des télécommunications/Tic de Côte d'Ivoire), the various operators in the mobile banking sector and the APBEF-CI (Association Professionnelle des Banques et Etablissement Financiers de Côte d'Ivoire). To combine the quantitative results of multiple studies in order to produce a synthesis of empirical knowledge. In a second step, the interpretative approach favored the synthesis of the results of the studies and the description of the effects observed from one study to another. By this method we have been able to produce an interpretation fed by the experience of authors combined by the synthesis of existing theories and models. What are the referential theories that have influenced this reflection?

The first theory is the theory of barriers. The issue of the barrier was theorized, originally on the traditional econometric model of the barrier to entry for firms bidding for entry into a market. For Bain "barriers to entry are the advantages that existing companies hold in an industry on potential entrants, these advantages being manifested in their ability to sell above the competitive price, without attracting new firms into the industry, Industry "(Bath, 1956, p.3). It goes without saying that this form of perception of the barrier focuses more on structural issues than on the behavioral issues of the different protagonists of a social process, particularly the relationship between a banking organization and its potential and / or current clients. Access to products and / or services offered by it.

Behavioral barriers to accessing an organization's product and / or service, regardless of its field of activity, focus on cognitive (knowledge), affective (attitudes) and conative (practical) dementias. As a result, the study of barriers to access is in line with theories of communication for development. The notion of barrier to access refers to a set of obstacles that could hamper or even block the process of popularizing banking and financial services within a given social group. The theory of barriers to access has been developed in the banking field by several authors who have carried out comparative studies on the level of penetration of banking and financial services in different countries. These include, among others, Chamberlain and Walker (D. Chamberlain and R. Walker: 2005), who define the concept of access as the ability to obtain, on a sustainable basis, and to use affordable and usable banking and financial services that meet their needs.

The concept of barrier seems to immaculate to the banking activity itself. This statement by Thomas Jefferson perfectly illustrates «*I sincerely believe that banks are more dangerous than armies ready for battle, and that the principle of depositing money to be repaid by posterity under the name of loan, is only a way of mortgaging the future on a large scale* ». (Towards tomorrow: 2015, p.21) Two major trends emerge. The first is limited to a simple statistical analysis while the other proceeds from an econometric analysis of the phenomena observed. But it is especially the study of barriers as presented by Honohan (Honohan, 2004), which challenges us. It raises the issue of barriers as a barrier to access to price, information and to a product or service that results in low or no use of banking services. This Statement by Thomas Jefferson perfectly illustrate "I sincerely believe that banks are more dangerous than armies ready for battle, and that the principle of depositing money to be repaid by posterity under the name of loan. Large scale ". (Towards tomorrow: 2015, p.21) Two major trends emerge. The first is limited to a simple statistical analysis while the other proceeds from an econometric analysis of the phenomena observed. Honohan (Honohan, 2004), which challenges us. It raises the issue of barriers as to barriers to access to prices, information and to a product or service that results in low or no use of banking services.

In order to understand how behavioral change could take place and to favor the banking and financial inclusion of populations, we have also summoned the theory of planned behavior, which seems to us better to illuminate the analysis. Inherited from social psychology, the theory of planned behavior is developed by Fishbein and Ajzen (Fishbein, M., &Ajzen, I., 1975, p.302). Which define the links between the beliefs, attitudes, norms, intentions and behaviors of individuals. According to this model, the behavior of a person would be determined by his behavioral intent to adopt it. This intention, on the other hand, is determined by the attitude of the person and by his subjective norms concerning the behavior in question. They define subjective norms as the individual's perception that most people who are important to him or her are of the opinion that they should or should not perform the behavior in question. In the face of the assumptions, concerning the perception of population-bank relations, it is a question of changing the attitudes of those who are excluded from the

banking system by neutralizing subjective norms, which could hamper the intention to act favorably banking through mobile banking.

Since the theories of reference are determined, what is the situation of banking in Côte d'Ivoire?

3. Situation of banking in Côte d'Ivoire

Banking is defined as the influence of the banking and financial system on the population. In other words, it refers to the number of people who have access to banking and financial services. Banking represents the percentage of the population with access to banking services in a country.

It is determined by the ratio between an economic datum (number of accounts or bank branches) in the numerator and a demographic (total population or labor force) or geographic (area) data in the denominator. Under the provisions of Article 3 of the WAEMU Banking Regulation Act of 25 July 1990, "banks which are the usual profession are deemed to receive funds which may be disposed of by check or Transfer and use on their own account or on behalf of others in credit or investment transactions ". Banking represents the percentage of the population with access to banking services in a country. It is measured by an index called the banking rate. This index reflects the level of penetration of banking and financial services in the country or region concerned. It is determined by the ratio between an economic data (number of accounts or bank branches) in the numerator and a demographic data (total population or population Active) or geographic (area) in the denominator.

Côte d'Ivoire is leading the UEMOA banking market with 29.27% share. It is followed by Senegal which represents 20.11%. Out of a total of 105 banks and 13 financial institutions in the UEMOA, Côte d'Ivoire has 22 banks and 1 financial institution. (APBEF-CI, 2012) The Ivorian banking market has undergone an exceptional evolution over the past 10 years with the arrival of the Moroccan banks (Atlas Bank, Atlas Bank, Attijariwafa Bank, BanqueCentralePopulaire, BMCE), Gabonese (BGFI), Burkinabe (Coris Bank), Libyan (BSIC) and Malian (Bank of the Union). The banking network continues to be supplied by subsidiaries of major groups (SGBCI, ECOBANK, BICICI, SIB, BACI, and UBA) which do not belong to the UEMOA area.

However, analysis of geographical distribution shows a strong concentration of banking agencies in the south of the country, mainly in Abidjan the economic capital. In addition to developing the banking network, microfinance institutions have evolved considerably. Côte d'Ivoire is the country in the UEMOA area with the highest level of banking. It stands at 16.49%, for 567 counters and 701 ATMs / ATMs (BCEAO, 2014). But this rate remains low compared to the initial target of 20% by 2013. Côte d'Ivoire is considered a country under banking. Here, we want to highlight the explanatory factors for this low rate. What are the main obstacles to banking in Côte d'Ivoire?

4. The main obstacles to the banking system

Banking exclusion is a factor of social exclusion of structural individuals condemned to a form of ghettoization in a totally informal economy that condemns them to doubtless living on the margins of any form of formal and modern economy. By definition, a person finds himself or herself in banking and financial exclusion when he is impeded in his banking and financial practices which no longer allows him to lead a normal social life in his society (Gloukoviezoff 2004). It thus appears that banking exclusion does not mean a strict impossibility of access to banking services but is measured in relation to the social difficulties it generates. It is reflected in the stigma attached to the difficulties of accessing or using modern payment instruments which can create a feeling of rejection; The setting aside: it is

born of the methods of selecting customers of banks; Economic marginalization: it follows the economic difficulties encountered by a person. Banking exclusion has as its corollary the financial exclusion. Banking exclusion can affect low-income people, bank bans or over-indebtedness, while financial exclusion concerns access to long-lasting financial products and services. According to Gloukoviezoff, an excluded bank "it is not necessarily someone who is out of the bank, it is also someone who is in the bank but understands nothing" (G Gloukoviezoff, 2004),

Indeed, among the populations having access to a bank account, some of them do not understand the banking system. Moreover, the concentration of banking networks in economically dynamic zones is observed, especially in urban and peri-urban areas and zones with a high concentration of agricultural, mining and oil raw materials. Economically weak areas are not covered by banking services. In a sample of 478 branches representing the banking network of the largest banks in Côte d'Ivoire, only 231 (48%) are located outside the Abidjan area.

This means that 52% of the counters are located in and around Abidjan. This strong concentration of banking agencies around the economic capital of Côte d'Ivoire is more noticeable among privately-owned banks. The number of agencies located in Abidjan and surrounding areas amounts to 203 out of a total of 316. 64% of agencies in Abidjan compared with 113 (26%) in the interior of the country. In addition, often modeled on the banking systems of the former colonial powers, the banking models applied in Africa were not designed for low- and medium-income populations, which did not always have significant financial savings and did not have few assets to offer as collateral where appropriate.

For example, in almost all African countries, applications for long-term loans (e.g. mortgage loans) will be cumulatively opposed to a guarantee application, in this case a tangible fixed asset, And proof of regular wage income. In 2008, the share of the informal sector in the national wealth was estimated by the OECD at 38% in North Africa and 57% in sub-Saharan Africa. It thus appears that the majority of the population in the informal sector cannot justify regular payments of wages and is excluded from the benefit of bank credit. The lack of a coherent policy tailored to the problem of banking added to a judicial system corrupted by corruption also constitutes an obstacle to banking. The judicial system of all WAEMU countries is plagued by corruption in the public administration of the countries of the Union. According to the 2015 Transparency International (Transparency International: 2015) NGO, the Corruption Perception Index (CPI) for the eight WAEMU countries is between the orange zone and the red zone. This reflects the intensity of perceptual corruption in this economic and monetary space. Senegal is the least corrupt country with 61th place with a CPI of 44, followed by Burkina Faso (IPC, 38 / 76th), Benin (IPC, 37 / 83rd), Mali (IPC, 35 / 95th) Niger (IPC, 34 / 99th), Côte d'Ivoire and Togo (IPC, 32 / 107th) and Guinea Bissau (IPC, 17 / 158th). This corruption usually results in the payment of undue commissions, activation and use of personal ties with the judge or magistrate, misappropriation of public funds, unlawful negotiation of penalties, 'Union. It also highlights the existence of parallel justice led by police officers in the police stations for the benefit of the best bidders (Tidjani, A., M., 2005).

So it goes without saying that so many obstacles contribute to the distrust of the populations towards the banking system. In particular, the Ivorian agricultural populations retained a bitter taste of bankruptcy in the 1990s of one of the country's leading banks, the BNDA (National Bank for the Development of Agriculture). A second bank, the bank for the financing of agriculture, has also been in default since 2014 and since then has been in

liquidation. This situation does not motivate rural populations to enter the banking system. Farmers are afraid to see other banks go bankrupt again and prefer to keep their money in cash rather than to introduce it into the financial circuit with all the risks that it entails. Finally, the high rate of illiteracy, especially in rural areas, is a definite factor in banking exclusion. Most people with higher education have a bank account.

Thus, the higher the illiteracy rate, the lower the rate of banking, as there is a correlation between these two ratios. On the strength of that, can we say that the expansion of mobile telephony and mobile banking is an opportunity for inclusion for the non-literate populations in urban and rural areas of Côte d'Ivoire? Will this promote a better understanding of banking mechanisms for low-income banking, ban banking or over-indebted people?

5. Mobile banking, a tool for social inclusion through banking and financial inclusion

5.1 Situation of mobile telephony in Côte d'Ivoire

One can easily assert that the development of mobile telephony and mobile banking are closely linked. In fact in the field of ICT, mobile telephony is the tool that has really spread to the African continent. While internet access is lagging behind. The reality is that the penetration rate the internet is pushed and boosted by telephony. The share of the mobile phone sector in the GDP is estimated at more than 7% in 2015 (A., M., Sehi-Bi, 2015). The overall rate of internet penetration which is 31, 65% is boosted by mobile internet at 31, 36%. In terms of prospects, APBEFCI Chairman Souleymane DIARRASSOUBA said that "With the integration of ICT in banking, the prospects will be for more than 60% of the bank rate" (FE Christophe: 2016) on the horizon 2020.

The market for mobile telephony is operated by three operators, following the withdrawal of the operating license of the four operators in April 2016. These are COMIUM, the company Green owned by a Libyan investment fund, Ivorian groups NIAMOUTIE TELECOM (Mobile Café) and WARID Côte d'Ivoire. At the time of their closures, ARTCI estimates that they represented only 4.2% of the Ivorian market (AFP, Côte d'Ivoire: 2016), with a million subscribers, cumulating CFAF 80 billion (122 million Euros) of debt to the Ivorian state, according to the Telecommunications Regulatory Authority in Côte d'Ivoire. With an overall penetration rate of 103.33% (ORANGE 47, 36%, MTN, 33.26%, MOOV 22.71%), the telephony sector is structured as follows in terms of subscription types.

Table 1: Structuring of the mobile telephone sector by number of subscribers in Côte d'Ivoire

	ORANGE	MTN	MOOV	Global
Prepaidsubscribers	11 193 149	7 894 022	5 363 697	24 450 828
Post paidsubscribers	60 282	10 317	33 094	103 663
Total	11 253 361	7 904 339	5 396 791	24 554 491
Prepaidsubscribers(%)	99,46%	99,87%	99,39%	99,58%
Postpaidsubscribers(%)	0,54%	0,13%	0,61%	0,42%
Total	100%	100%	100%	100%

The total turnover of the sector, in the first quarter of 2016 (ARTCI: 2016), is estimated at CFAF 215,231,988,000. It is broken down as follows: Orange 50, 19%, MTN 32.55% and MOOV 17.26%.

What is the impact of such a development of mobile telephony on the process of dematerialization of the currency, online financial transactions and especially the improvement of the rate of banking? In other words, can opportunities for digital access offered by mobile telephony promote bank inclusion?

Mobile banking inaugurates the era of the dematerialization of money in a space where the flow of material monetary flow is legion. Initially, this trend began with the emergence of electronic banking. This is the set of electronic, computer and telematics processes necessary for the management of payment cards as well as associated transactions. Electronic money is a link in e-money. Electronic money which is only a claim on an issuing institution registered not on paper (fiduciary) or in books (scriptural), but on a microprocessor card (Electronic money holder) or on software (Virtual Coin Pouch). Mobile banking covers all the techniques used to carry out banking operations from the support of a mobile phone (consultation, management, payments, etc.). More specifically, this is the performance of financial services in which the customer uses mobile communications techniques in conjunction with mobile devices. (Poussotchi and Schurig: 2005). It is the channel through which the client interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant.

This initiative was undertaken by SAFARICOM, which launched M-PESA (M for mobile and pesa, money in Swahili) in Kenya in 2007 (IFC, 2009). As at 1 March 2012, M-PESA has 14,652,593 active users, ie one Kenyan on trios. M-Pesa service and a bank account (in some countries only, including Kenya). It is a partnership with Kenya's Equity Bank, which launched M-Kesho, a service based on M-Pesa (its platform and agent network), offering more extensive banking services such as Accounts, loans and insurance.

This service allows users to deposit money into an account stored on their mobile phone, and to send them using a personal identification number (PIN) and secure SMS. M-pesa customers can deposit and withdraw money from the network of telephone credit resellers who act as bank agents. The service allows you to deposit and withdraw money; Transfer money to other clients or non-clients; paying bills; Purchase communications credits; Transfer money from their mobile phones. M-Pesa has grown exponentially due to its low transaction costs and has become the most successful model of m-banking in developing countries. Thus, thanks to M-Pesa, unbanked populations were able to access financial services. This has also helped to reduce crime in societies largely based on cash trading (Murithi M., 2014)

As a result, M-PESA is able to meet the needs of the poor thanks to its low transaction costs. M-Pesa, for example, charges \$ 6 in fees when Western Union collects 17 dollars, says the study. Reducing the costs of migrant remittances and optimizing their impact on development: tools and products financial assistance for the Maghreb and the Franc Zone, carried out by the Association Epargne sans frontières (ASF) on behalf of the African Development Bank.

In the UEMOA area, the advent of mobile banking is more recent. It is governed by Regulation No 15/2002 / CM / UEMOA of 19 September 2002, on payment systems in the WAEMU. This regulatory framework is reinforced by Instruction 01 / SP / 2006 of 31 July 2006 of the Governor of the BCEAO on electronic money and electronic money institutions. According to this instruction, an electronic money institution is an enterprise or any other legal person authorized by the BCEAO to issue means of payment in the form of electronic money. This sphere of action is limited to the issue of electronic money; the making available to the public of electronic money; and electronic money management. In implementation, the central bank allows two types of models for the issuance of electronic money. The first type

is the banking model. It results in the issuance of electronic money under the responsibility of a credit institution in partnership or not with a technical operator. The second model is non-banking. It is highlighted in the context of the approval of a non-bank institution, called an electronic money institution, which issues electronic money.

The products available in this context involve the use of fiduciary currency through reloading and withdrawal operations. They allow customers to pay for their electronic money accounts by depositing cash. This allows them to carry out the operations of buying credit, paying bills, performing money transfer from person to person, or from person to public private enterprise. In fact, the most widely used option in UEMOA is the partnership between banks and telecommunication operators, particularly mobile operators. This type of partnership represents 26 out of 32 initiatives at the end of 2014 (BCEAO, 2014, p.5). Over the same period, mobile banking services in this monetary area are estimated by transaction volume (BCEAO, 2014, P. 8), of 259.3 million transactions which equivalent in monetary value to CFAF 3760 Billion.

In Côte d'Ivoire, since 2008, three operators competed in the mobile banking market in connection with banking companies and two operators' two non-banking operators. Orange in partnership with BICICI (BNP Paribas) in December 2008 with Orange Money, MTN in partnership with SGBCI (SociétéGénérale) in October 2009 with MTN Mobile Banking, MOOV in partnership with NSIA Banque January 2013 with the offer FLOOZ became MOOV money, and CELPAID in February 2011 with the offer CELPAID, Cash service November 2013 with the offer Mobile Money.

The mobile banking offer offered by these operators allows customers to carry out various operations. The possibility is given to him to carry out a deposit and withdrawal of money (the deposit of money takes place according to three modes of supply of the account in the points of sale approved by a mobile operator, or from the ATMs (GAB), from your bank account. Money withdrawal is done everywhere in Côte d'Ivoire and at any authorized point of sale.), Transfer of money (from account A to account B provided that account A has the necessary credit to be transferred.); Purchase of telephone credit via the Money mobile service, is free of charge. (The purchase of telephone credit can range from 100 to 500,000 FCFA directly from the mobile phone without moving); Payment of invoices (CIE, SODECI, CANAL +, LMAIVIE, COTE D'IVOIRE TELECOM, AVISO, ORANGE); Payment of insurance premium (LMAIVIE), and merchant payment (makes it possible to make purchases at authorized merchants with security and simplicity, supermarkets, hypermarkets, hotels and restaurants, clinics, pharmacies, Optics, bookshops and paper mills).

Mobile banking is becoming increasingly popular in banking institutions. They are beginning to offer interactive services to their clientele such as transfers from their m-banking accounts to their traditional bank accounts and vice versa. This is the pay consultation. Thanks to mobile banking, the customer no longer needs to move to a branch to have information on his account. Banking institutions, thanks to the advancement of ICT, offer to consult their balance from their mobile phone. Almost all banks in Côte d'Ivoire offer this service.

The banking establishments use mobile banking as a means of communication with customers. Through this they inform the latter about various events that can take place during the life of the bank account. This may include an unpaid expiry reminder, the availability of means of payment, etc. And with the "m-banking to bank" or "bank to m-banking" offer, m-banking to bank is able to supply its traditional bank account from its electronic account. "Bank to m-banking" transactions enable it to fund its electronic account from its traditional bank account.

In the first half of 2016, mobile money represented 5.15% of the total activity portfolio of the three operators, ie a total turnover of CFAF 11,081,896,000. This turnover is broken down by operator as follows: Orange with Orange money service CFAF 8,236,908,000 (74.33 %,); MTN with MTN CFAF 2 671 839 000 (24.11%) and MOOV with FLOOZ CFAF 173 149000 (1.56%). Mobile phone companies in Côte d'Ivoire offering mobile money services have received close to CFAF 17 billion in withdrawals, transfers and bill payments during the first half of 2015. The leader in the financial transactions sector via mobile is dominated by ORANGE. Its revenues amount to CFAF 12.328 billion, or 73.86% of the total revenues received by operators. It is followed by MTN with CFAF 4.163 billion, or 24.94% of the receipts of the market of transactions via mobile money. MOOV closes the march with CFAF 199,241 million, or 1.19% of the revenue collected through withdrawals, transfers and payments. According to the ARTCI report, of the 23, 92 million subscribers to the mobile phone network registered in June 2015, 7,262 million have mobile money accounts.

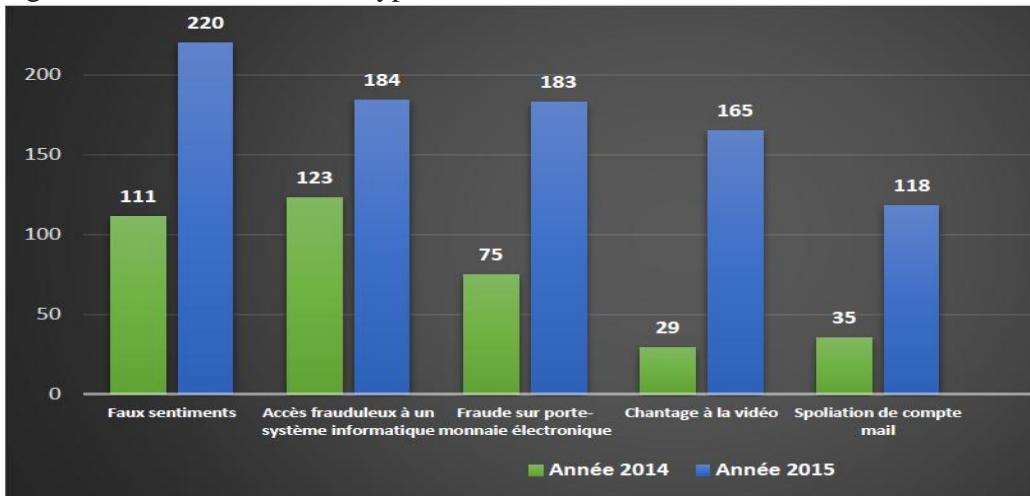
Overall, in 2016 according to the ARTIC the volume of activity of the mobile activity in Côte d'Ivoire breaks down as follows: revenues on voice traffic (79.18%), mobile money receipts (5.15%), Mobile internet (4.99%), revenues from SMS traffic (3.21%) and revenues from other activities (7.47%). This dynamic contributes to the financial inclusion of previously unbanked populations. Effect, while access to banking services and microfinance was only 21.8% at the end of 2013, new players in electronic money have raised this rate to about 66.3% of the population. By the end of 2014, there were more than 4.6 million active customers of electronic money (up to more than 240% than in 2013), which transferred over CFAF 2,233 billion (\$ 4.6 billion) in transactions (186% more than in 2013). According to the ARTCI report, of the 23.92 million mobile network subscribers registered in June 2015, 7,262 million have mobile money accounts.

Admittedly, there is an effervescence in the sense of mobilization of populations towards mobile banking, able by the ease of access to the services offered, to remove the main barriers to banking mentioned above. But mobile banking is not a risk-free operation. Illiterate populations and financial illiterates are often victims of certain practices which, if not heeded, can contribute to the development of defensive mechanisms and lead to curbing the upward trend observed. What are the main risks?

5.2 Risks related to mobile banking

According to INTERPOL Cybercrime is one of the fastest growing forms of criminality, with more and more criminals exploiting the speed and functionality of modern technologies and the anonymity they allow to commit. The most diverse offenses: hacking of data and computer systems, identity theft, dissemination of child sexual abuse images, internet auction scams, unauthorized access to on-line financial services, virus propagation, botnets deployment, Scams of various types by means of e-mail such as phishing, etc. (N'guessan, 2014, p.181). With the expansion of mobile banking, cybercrime spreads its web towards the universe of mobile telephony, previously relatively spared. The issue of security can be dealt with both in terms of hardware and electronic circuitry.

Figure 1: Evolution of scam types



Source: Annual Report 2015 PLCC, P. 12

Compared to 2014, the number of cases has increased significantly in 2015. It goes from 564 to 1409 or 149.82%. On the other hand, the 2015 injury estimated at CFAF 2 535 061 409 has decreased by 48.80%. It is clear that there has been an increase in the number of offenses related to the security of financial transactions. Both material and transactional. At the material level, fraudulent access to a computer system increased from 123 to 184, an increase of 66.84%. Electronic wallet fraud increased from 75 to 183; an increase of 244%. At the material level, the major risk lies in the security of the terminals serving as a support for transactions or simply as an electronic wallet. The main terminal used for mobile banking is the mobile phone. The latter as a mobile terminal and electronic purse can be subject to robbery, a theft under conventional crime. In 2015, the number of offenses related to theft of the increase from 2014, 30 cases against 22 (136, 36%). In value in 2015, the damage related to theft is estimated at 3,848,100 francs, theft of computer data is estimated at CFAF 27,77,000 , theft of computers is estimated at 837,000 francs and gold is fraudulent transfers are The order of CFAF 256100.

At the system level, concerns about the security of transactions are accentuated with a sharp increase between the two financial years, an increase of 216%. There are 162 more cases for a total of 237 cases. The financial loss is estimated at CFAF 84000000. These offenses are possible because scammers can access the security code, which only the user of the account is free to create and modify at will, can be unfortunately disclosed to a third party. The most common practice relates to USSD codes (message consisting of character sequences sent as a command to the telephone network for the purpose of executing programs). It involves making a call or sending an SMS to a potential victim first. Then he is asked to enter USSD codes to receive a bonus or validate his transfer. Once it runs, its SIM card is disabled. Finally, his SIM card is reactivated by the scammer on a new chip. He can therefore totally control the electronic accounts of his victim. Electronic money fraud (SIM, Swap, false call, incentive / USSD code) continues to be very high between 2014 (75 cases) and 2015 (237 cases); Representing an increase in the number of cases by 316%. Coupled with the risks associated with low security of terminals and transactions, bank fraud reinforces the risks associated with the system by fraudulent access to the computer system of Western Union, money-gram, RIA, Sigue and Wari. At this level, the damage consumed in 2015 is CFAF 808 982 698 against CFAF 62 752 248 of the financial year; Representing an increase of 1289.16%.

Moreover, hackers, often of the Brouteurs¹ who can intrude in the computer system of the operators or banks to strip the owners of bank accounts of their assets. These are mainly bank card fraud (10 cases in 2015 against one in 2014) and the fake checks / bank loan scam (3 cases in 2015 against a case in 2014). Although the cases are marginal compared to other offenses, they nevertheless constitute obstacles to banking by electronic systems or even Mobile banking. Faced with the risks associated with mobile banking, how can communication help secure banking transactions via mobile phones?

6. Communication on securing transactions via mobile banking

The fight against cybercrime in Côte d'Ivoire is multidimensional. It takes into account both form, legal, institutional and communication. From a legal point of view Ordinance No. 2012-293 on telecommunications and ICT makes it possible to regulate all telecommunication / ICT activities from or to Côte d'Ivoire. Law No. 2013-451 on the fight against cybercrime defines specific infringements of ICT, infringements of intellectual property, unlawful conduct on electronic communications networks and the responsibilities of online service providers. It adapts conventional infringements to ICT and specifies the criminal procedure with regard to cybercrime.

With Act No. 2013-450 on the protection of personal data, The definition of formalities and principles for the processing of personal data, the obligations of officials and subordinates, and the tasks of the authority In charge of the issue. Law No. 2013-546 relating to electronic transactions governing electronic commerce, advertising, contracting and electronic documents. It also addresses electronic archiving, security of electronic transactions and cryptography.

At the institutional level, in addition to the ARTCI, the Platform for the Fight against Cybercrime (PLCC) specialized structure of the forensic police is responsible for the issue against cybercrime in Côte d'Ivoire. As a result, it conducts actions against technology-related and cyber-space offenses. In this, it is technically supported by DITT-Laboratoire. This laboratory is responsible for the extraction and analysis of numerical data of all types for the benefit of investigative services. First the mission of the PLCC is related to investigations of judicial police. It proceeds to the receipt of complaints, denunciations, hearings, searches, arrests, riots, and patrols (real and virtual). Its perimeter covers the private sector in particular, ICT operators, Internet service providers, and money transfer or pledge transfer companies. It is also responsible for ensuring inter-state cooperation in securing transactions and the second is a technical mission and support for investigations. It also collects and retrieves digital data on various media (storage, computers, multimedia recorders, phones / smartphones / tablets, etc.). Finally, the PLCC analyzes extraction data, digital data processing, false document analysis, open source data searches and analysis, GIS, etc.

The communication component of the PLCC's fight against cybercrime is divided into training and awareness-raising activities. The training activities aim to strengthen the capacities of the actors in understanding the mechanisms and the stakes of the use of ICT for the commission of the offenses. They are intended for the main actors involved in the fight against cybercrime, operators of the ICT sector, cabin managers. Several types of training are

¹In Côte d'Ivoire, the notion broutage of proved from Dioula and refers, beyond its literal meaning (eating wool on someone's back), the accumulation processes in misleading online correspondence and forms Of witchcraft associated with them, (B.Koenig : 2014, p.196)

organized according to the different targets, both nationally and internationally. In 2014 (PLCC: 2014, p.28), ten training sessions were organized in the form of a training or training mission carried out by PLCC agents. The missions abroad represent 30% of training. It should be pointed out that the training missions within Côte d'Ivoire did not all take place in Abidjan. Four training sessions on seven of them were held in the cities of Yamoussoukro, San-Pedro, Gagnoa and Abengourou. During the course of the financial year 2015, training activities were intensified. We observe that fourteen training sessions were given by and for the PLCC, including training courses in Côte d'Ivoire or abroad, an increase of 140%. Only three training courses took place abroad. The training areas range from the training of trainers to those of the actors or partners in the fight against cybercrime such as the Ivorian Television Broadcasting, the National Society for the Development of Informatics, operators providing services or using electronic money (CI Orange, CI Horizon Channel).

In 2015, other types of training activities were carried out, including the organization of a symposium for teachers, researchers and students. Twenty-five police officers took part in a training seminar in Nairobi. UNODC on the fight against cybercrime in East Africa, and various educational activities for training institutions (Chamber of Commerce and Industry-CI Practicum School, Cours Lamartine, University of Cocody , INIF / ENEAE ...)

At the same time, in the training activities, communication and awareness-raising activities of various kinds were undertaken by PLCC and LCN through a television series (brouteur.com), the organization of an awareness campaign targeting the grammar schools.

Awareness-raising activities also include raising awareness among police officers and producing a television series, Brouteur.com, intended for the general public. The brouteur.com series, produced with the support of the PLCC, is part of an education-based approach to entertainment in the sense of "building a society with a human dimension, inclusive and favoring development, Information, in which everyone has the opportunity to create, obtain, use and share information and knowledge and in which individuals, communities and peoples can realize their full potential in The promotion of their sustainable development and the improvement of their quality of life "(WSIS: 2003). . While denouncing a digital pandemic, the series brouteur.com adopts a playful tone. In this, it is part of The Theory of Usages and Rewards. In the light of the work of Katz, Blumler and Gurevitch, this theory postulates that an individual uses mass communication to connect or sometimes to disconnect through instrumental, affective or integration relationships with others (Family, friends, nation, etc.) (Katz, Blumler&Gurevitch: 1974).

The series aims to highlight the practices of scams implemented by grazers to rip off their targets. In addition to being broadcast on the national channel, TV5 Africa, and most of the television channels of the African continent, it is screened during the awareness sessions. These are organized, especially in schools, with support from the Ministry of the Interior, Ministry of the Interior and Security (MEMIS), the Ministry of National Education, the Department of Informatics and Traces Technological (DITT) and the French Embassy. This project met just to name a few. In short, a summary of the series will be used as a support and disseminated in the places of awareness, followed by exchanges with the actors of the film and agents of the PLCC. The targeting of the environment is explained by the fact that the large number of cyber-offenders from this environment (PLCC: 2015). Indeed, in 2014 the financial losses culminate in 2,795,069,816 CFA francs out of an overall amount of the annual loss estimated at 5,181,663,744 CFA francs, that is to say, 53.89%. By 2015, this trend is maintained for the month of July 2015 with 1,124,984,204 out of 1,328,069,997, or 84.70% of the damages attempted. Awareness-raising in schools is done by screening films (Broadcast episodes of the series broteurs.com) in the places of awareness, followed

exchanges with the actors of the film and agents of the PLCC. Outside the school environment, awareness-raising activities are carried out through road shows in partnership with MTN Côte d'Ivoire in the public squares, panels (panel animation at Africa IT and Telecom Forum 2015), Stands at national and international trade fairs (ORIGIGI 2015 trade fair on intellectual property in which DITT was awarded the ShieldAfrica 2015 defense and security fair in Libreville) and conferences. All of these outreach activities are supported by partnerships with mobile operators and mobile money companies for their B to B and B to C transactions. These partnerships resulted in material donations (MTN and HUAWEI).

In addition to awareness-raising activities carried out by PLCC, outreach activities are carried out by operators in the mobile telephony sector via the media and their licensed cabin networks. Most of the messages sent can be summarized as follows: Never communicate a secret code for any reason whatsoever to a third party by e-mail, telephone, etc. Change your PIN regularly and use a strong code; Facilitate the use of means providing greater control of banking institutions) for transactions involving large sums; Immediately take hold with the police services if you are victim, automatically report any loss of your SIM card to your Operator. Beyond the conventional media, sensitization is carried into cyberspace through the pan-African contest "bodiel the ultimate challenge for cyber champions" on facebook.

The concept of the game is essentially based on a playful approach made of intellectual tests, general culture, creativity and scenario for the conduct of digital investigations. It aims to detect talent, train young people for the lawful use of ICTs. It focuses on educating young people about the dangers of cybercrime. The winners benefit from qualifying training, carry out training courses in international companies and universities, partners of the initiative. If we admit that "this phenomenon of cybercrime poses at least three major problems: the first concerns the image of the country and the Ivorian citizens abroad which is constantly deteriorating; Which is the consequence of the second problem: the economic difficulties, because Ivorian businessmen and businessmen, victims of this sad image, are experiencing enormous difficulties in taking advantage of the benefits of cyberspace in their activities with partners Foreigners; Finally, the third problem is educational because cybercriminals are very young. "(Bogui: 2010). Can we say that the communication policy has had an effect on? Otherwise, what is the impact of the communication policy on mobile banking risks?

7. Conclusion and recommendations

Mobile banking offers relatively wide range of customer service in terms of financial transactions. In addition to saving, it can make purchases of goods and services and new services such as, the international bank card, or benefit from an extensive withdrawal / deposit network, have the option of recharging of phone credit from their mobile. This undoubtedly saves time. However, these transactions of a financial nature are not without risks for the customers. Admittedly, mobile banking allows unbanked populations in rural and peri-urban areas to have access to banking and financial services and banks to fill the low density of their network. The main tag is in the partnership (banking / telephony) and the impossibility of contracting loans via its telephone. Although this is an innovative service, the volume of transactions is very low compared to that of banks. It remains a means of hoarding, and the more money saved, the greater the risk to banks in terms of resource collection. In addition, cyber-attacks in the virtual financial space of mobile banking contribute to slowing down the inclusion of populations. The communication actions have had some effects in terms of promoting an awareness of the risks of cybercrime on mobile banking operations. They have above all made it possible to ensure greater visibility of the actions of the PLCC. (The number of publications increased from 60 in 2014 to 91 in 2015. The number of

subscribers to the PLCC's page almost tripled in one year, from 12500 likes obtained in 3 years, from 2011 to 2014, to 30200 likes in 1 year from the end of 2014 to the end of 2015. Some publications have been seen by more than 34 000 profiles and almost 400 000 times; By order the origin of the users following the page: Côte d'Ivoire, France, Cameroon , Mali, Senegal, Burkina Faso, Guinea, Belgium, Canada, Benin, plus 40 other origins.).

There are many challenges. They concern the security of people and goods in the virtual space in which individuals and companies must benefit from a level of security guaranteeing confidence and social peace. In the fight against cybercrime, there is the fight against terrorism, which calls for securing virtual space. It is therefore essential that communication should not be considered as an annex to an action plan. For it to be effective, it is necessary to implement a real communication strategy.

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