

Pilot Test New Technology for MFIs

1. Development relevance

Macroeconomic & political stability

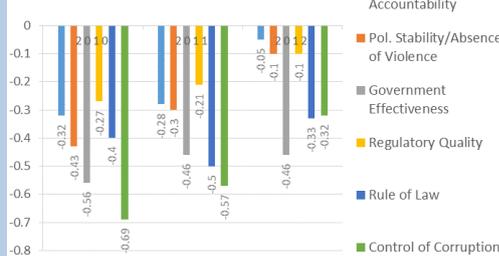
Senegal aims at being a high-middle-income country by the next decade but has been stuck in a low-growth equilibrium since 2006. Compared with the average growth rate of 6% for the rest of sub-Saharan Africa, growth in Senegal averaged only 4% between 2000 and 2010, and only 3.3% in the period since 2006. Inflation stayed relatively low in this period.

In 2011, real GDP growth slowed to 2.6%, due to continued energy shortages and a substantial contraction in agricultural output. While non-agricultural activities grew by 4.8%, agricultural output declined by 21% in the fourth quarter, when more than 50% of the annual production is harvested. Dynamism in the telecommunication, transport and financial sectors contributed to good performance in the tertiary sector.

Quick Facts (2011 data)

- Population: 13,4 million
- Real GDPⁱ:
 - USD 14,44 billion
 - 2,1% growth
 - 3,5% 5-year compound annual growth
 - USD 1'083 per capita
- Unemployment: 48,0%
- Inflation (CPI): 3,4%
- FDI Inflow: USD 286,1 million (2% of GDP)
- Trade balance: -17% of GDP

GOVERNANCE INDICATORS



Poverty indicators

- Poverty headcount ratio at USD 1.25 a day (PPP): 30% of population
- Poverty headcount ratio at national poverty line: 47% of population
- Poverty headcount ratio at urban poverty line: 33% of urban population

The Trade balance in Senegal has significantly fluctuated since 2009, averaging a deficit of -25.47 billion USD and amounted to -8.7% of GDP in 2011ⁱⁱ. Senegal's growing mineral production has not been able to reverse a systemic trade deficit yet. The country is dependent on the import of fuels, foodstuffs and capital equipment. Senegalese economy is, due to its openness, vulnerable to fluctuations in world commodity prices and to external economic crisis and political crisis in neighbouring countries. Further internal constraints to growth are linked to climatic shocks, floods, road infrastructure and slow reforms, especially the energy sectorⁱⁱⁱ.

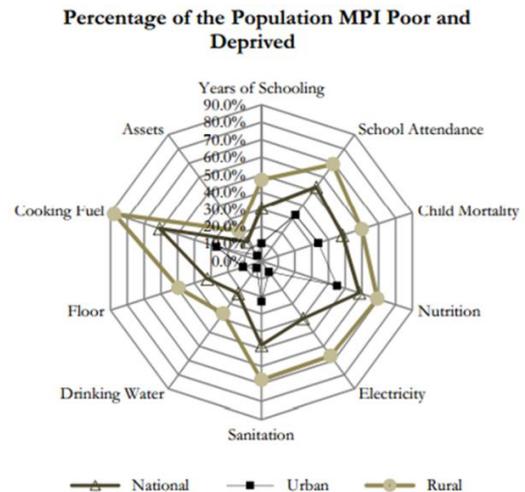
In 2011, Senegal received remittances from citizens living abroad that are worth more than 10% of GDP. These have driven household consumption significantly. Official aid amounted to nearly 8% of GDP in 2011.

Senegal provides strong leadership in the continent and is a hub of democracy and political stability in the West African region. The transition of power following the relatively peaceful presidential election of March 2012 and legislative elections of July 2012 demonstrates an increasing maturity of Senegal's democratic tradition.

Senegal's economic freedom ranks 125 out of 178 countries^{iv}. The structural transformation of the economy remains slow. Strategies are planned to promote new products to diversify exports and growth source. Improvements to facilitate the development of a vibrant private sector have to be developed yet. Senegal's entrepreneurs continue to face a number of institutional challenges; the overall regulatory and legal framework remains weak. The presence of the state in the economy is still considerable, despite public-sector reforms initiated over a decade ago. The inefficient judicial system lacks independence and is prone to corruption.

Demographic pressure is a major concern: 68% of about 13.4 million Senegalese are under the age of 25 and 57% are living in rural areas. The rate of productivity is low, un- and underemployment rates are high, especially among youth. Senegal is one of the world's poorest countries, with about 30% of its population living on less than USD 1.25/day.

Senegal ranks 154 out of 187 countries in the world (Human Development Index)^v. Due to an inequitable distribution of wealth, there are relatively higher poverty levels in rural areas. Not everyone has access to education, and illiteracy is widespread, especially among women and girls. Environmental degradation is an obstacle to development in some regions, where accelerating soil erosion, salinization, and the disappearance of vegetation also impact food security. Drought in the Sahel region has caused a food and nutrition crisis that affects more than 800'000 people in Senegal (about 6% of the total population). The new government has made food security its top priority. Senegal has identified three priorities in its Poverty reduction strategy^{vi} 1) Creation of wealth and economic opportunities. 2) Accelerated access to basic social services (including education and health), social protection and sustainable development. 3) Good governance and human rights.



Financial sector

The financial sector remains underdeveloped, and the role of microfinance in providing access to credit and other services such as savings and insurance is growing. Senegal, as member of BCEAO^{vii}, enjoys one of the best legal and regulatory frameworks for banking in Africa with openness to introducing microfinance-specific laws and regulations. However, the lack of regulatory capacity limits the supervision of MFIs, especially the small ones. There is still no credit bureau. Mobile banking has developed rapidly.

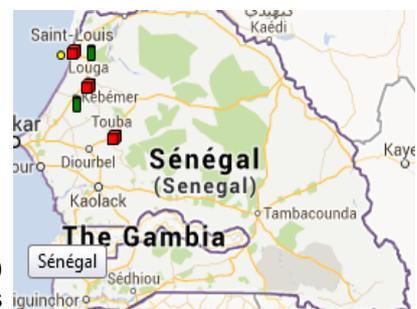
According to MicroFinance ACPEU^{viii}, the penetration rate of microfinance institutions amounts to 12.04% whilst only 6.15% of the Senegalese people have a bank account. The Senegalese microfinance sector is characterized by a high concentration of assets (78%), clients (77%), loan portfolio (77%) and savings (82%) on 3 institutions (CMS, PAMECAS and ACEP). Regions with a higher penetration rate are Dakar (27%), Ziguinchor (17%), Thiès (16%), Kaolack (10%) and Louga (9%). 44% of the loan portfolio is concentrated in Dakar against 15% in Thiès, 9% in Kaolack and 6% in Ziguinchor. With a PAR 30 of 6,6% and PAR 90 of 5,49%, (against 2,75% in 2005), the global quality of the loan portfolio is quite worrisome.

The pro-poor orientation of the industry remains limited. The biggest MFIs are targeting “big clients” and SMEs whereas low-income people are still struggling especially in rural areas to gain reliable access to financial services.

Partner financial institution

Initially, two MFIs were involved in the project: St Louis Finances and Caurie Microfinance but the latter withdrew from the project as they received support for a similar project from other donors. Therefore, the project focused only on St Louis Finances.

St Louis Finances’ (SLF) objective is to empower Senegalese households excluded from access to financial services by practicing inclusive microfinance in terms of targeted clients (micro, small and medium entrepreneurs but also farm workers), geographical location (focusing in suburban and rural areas), gender (focusing in women) and financial services (wide range of loans, savings and insurance products). SLF aims to become the leading rural microfinance institution in Senegal while applying microfinance best practices and technologies. SLF is a limited liability company (“Société Anonyme”) created in 2010. In April 2011, SLF received the licence to operate as a microfinance institution and started its activities in the following month. SLF shareholders are swiss microfinance holding SA (30%), Investisseurs & Partenaires (20%), IFC (20%), KfW (20%) and Oikocredit (10%). The initial paid-in capital amounted to CHF 1'139 million and has been doubled in June 2013 but the capital structure remains the same.



Headquarter is in Saint Louis and three branches have been opened in Saint Louis, Louga and Touba as well as two in rural areas, Mpal and Kébémér, and one urban outlet in Saint Louis. Between May 2013 and April 2014, one more branch and two rural outlets should be opened in Northern Senegal.

St. Louis Finances	2011	2012	2013	2016
Total assets (CHF)	1'054'722	4'014'450	5'283'987	17'104'466
Loan portfolio (CHF)	221'430	1'580'524	3'506'110	14'692'487
Active clients	1'850	10'286	19'174	55'726
Staff	37	86	106	217
Branches	1	2	3	5
Rural outlets	1	2	2	6
Outreach of SLF	2011	2012	2013	2016
% of clients <2.5 USD/day	53%	51%	52%	50%
% of women	95%	90%	89	90%
% of rural	30%	22%	30%	50%
Drop-out rate (MIX)	1%	1%	1.5%	4%
# of disbursed loans	2'261	13'755	20'552	62'632
# of loan <25% GNI/capita	2'160	12'580	18'257	40'470
..... in %	96%	91%	85%	65%
Average value of disbursed loan (CHF)	162	241	297	439
# of voluntary savings accounts	1'850	15'066	27'902	85'092
Average value / account (CHF)	11	20	22	41



SLF operates through joint and several liability groups (DEGOs) at client level (village- or urban district-based associations) who assume a significant part of daily operational tasks such as client pre-selection, loan repayment and savings collection, recovery of arrears. This reduces transaction costs. More than 90% of SLF's actual and potential clientele consists of micro-entrepreneurs who develop self-employment strategies. The rest are small urban entrepreneurs with more formalized businesses that employ up to ten people. They are often very successful and constitute a fast growing segment. Involved in larger scale trade, manufacturing, transport, and other services, these enterprises express a strong demand for loans but cannot fulfil the requirements of commercial banks in terms of securities and collateral, administrative and financial documentation. 60% of SLF's loan portfolio consists of MSME clients.

SLF is focusing on rural expansion to avoid the saturated urban market and aware that client and product diversification of its clientele will be crucial for the institutional and financial sustainability.

The role of Swiss and international partners

The management of St. Louis Finances has been entrusted to FIDES AG through a "Management Service Contract" mainly funded by KfW, IFC and AFD. FIDES is responsible for the building-up, operationalization and day-to-day management of the Company and pursuing the objectives set out in the business plan.

SCBF assisted SLF in testing a mobile phone technology for improving its outreach and productivity in rural areas.

2. Intervention approach and additionality

Key constraints and bottlenecks to up-scale financial services massively to poor clients

Rural areas have specific constraints: the lack of adequate financial services due to the distances between small towns, the lack of infrastructure in the villages and the associated transaction costs. The road infrastructure suffers from the rainy season and adds to transportation cost for the villagers. Most people living in rural areas are equipped with mobile phones. Mobile technology is opening new opportunities to rural areas to input transaction information themselves and reduce eventually transaction costs.



Intervention strategy

Joint liability groups and individual clients in rural areas will be serviced by a mobile banking system based on mobile units made up of loan officers and a team leader. These small teams work in small towns or open market places, with motor bikes, and act as the key link to clients organized as Joint Liability Groups. Each team acts as a profit centre and is monitored as such with an appropriate management information system (MIS) which provides information for internal decision-making as well as for reporting to supervisory authorities. However, the capacity of SLF to offer flexible products such as flexible savings with the money directly collected in the village is limited with this system. Access to mobile technology would allow the institutions to overcome this challenge and to open up to flexible products, enabling irregular savings and payments, thus allowing the clients to better manage their cash flow, to use their savings as insurance mechanisms in case of sudden needs for expenditure, and to better use business opportunities.

SCBF support will enable to test the introduction of the new technology in SLF in order to improve poor innovative delivery mechanisms, increase the MFI and clients financial transparency as well as data processing. The new technology allows reaching rural low-income population at affordable cost. The technology chosen is TAG Pay and was developed by Tag Attitude as an electronic payment system based on mobile phone (and not chip card). The system is based on a voice system between the client and the agent phones. This system exists already in various countries such as Mali and Namibia, is simple and does not need important investment. Any client phone can be used and a simple 3G phone is necessary for the agent.

Objectives of the project

The main objective of the project was to test the TAG PAY mobile phone technology as a potential solution for SLF to:

- Enable a new offer of flexible products, mainly savings, credit and insurance products with small and irregular tickets at reasonable costs, enabling the clients to better manage their cash flow, to decrease vulnerability and to develop asset building strategies starting from a very low level;
- Facilitate access to financial services through a network of service points with village shops;
- Avoid data entry duplication in order to reduce reconciliation process and therefore increase productivity through a gain of time as well as to increase security by field level data entry to the MIS;
- Participate to the reduction of potential fraud since the clients will register the transactions themselves, limiting the intermediaries.



Main Activities

Preparatory work (March - May 2012)

- The project undertook a comprehensive research study with 400 clients in and around Saint Louis on "how SLF's clients are using their mobile phone".
- With the two technical partners TAG (for the new technology) and Software Group (for the MIS) the project assessed SLF's operational organization, products, MIS and IT system and resources to be able to define the technical and operational parameters for the pilot test of the application.

Adaption and test of Tag Attitude technical solution (September 2012 - March 2013)

- After in-house tests of the TAG Attitude phone technology by SLF staff that were not linked to the MIS, convincing results on the technical part as well as the acceptance of the product by the users existed. Based on these results, the Information System Department (ISD) of SLF designed the technical specifications for the bridge allowing the communication between the MIS and the TAG Attitude technology in October 2012. SLF's management validated these specifications and submitted them to the two technical partners.
- Software Group developed the bridge in close cooperation with TAG Attitude provider during November and December. Parameterization was needed from both parties. The final version of the bridge was delivered in the beginning of January 2013 and the user acceptance was tested for about three months. In parallel, the transactions procedures related to the TAG Attitude, including the control process, were drafted and the staff involved in the use of Tag Attitude trained.
- Software Group performed some customizations in the MIS software in order to record live transactions done via the phone technology. After rigorous and successful testing, the improved MIS went live in December.
- The SLF's service provided via TAG Attitude Technology is called "Diotelli". Real tests with clients were performed during the first quarter of 2013. In February a presentation of the service Diotelli was given to SLF's Board of Directors. Diotelli was officially launched on 11 April 2013.

3. Results achieved

SLF has been created as a pro-poor institution by social investors. It has achieved outstanding results as institution oriented to its clients, respecting them and understanding their demand, developing high quality financial services with small ticket sizes. For such an institution it is never easy to conduct a technology project, the profile of its staff and its business cultures being turned to a large extent to the clients.

The first important achievement of this SCBF support is that it has enabled the institution to be now in a position for decision making in a field of technology that is on one

side key for its future and for which on the other side there was no qualification in house. Building on the understanding that accessibility of the bank in rural areas was key for the clients and that the new technology could become a driver for productivity of the institution and new product features, the SLF management had in a first step studied experiences in Kenya and India where these technologies are the most advanced. In a second step, with the support of FIDES, it has formulated a demand to SCBF. Having gone through a series of steps of research, development and testing, involving clients, the team is now fully qualified to make the right choices and to integrate them into its business strategy. Furthermore the switch between the core banking system and phone banking system developed under the SCBF support enables the institution to be technologically ready for a number of institutional options opened up.

While the process was certainly longer than initially planned, important steps have been achieved:

Client level

Within the scope of the test, 300 clients have been using "Diotelli" in order to make quick deposits and withdrawals from their current account with their own mobile phones at a Diotelli counter in a SLF branch or outlet. The operation has introduced first time ever mobile banking technology in an MFI in Northern Senegal. The experience shows that the clients of St. Louis Finances, most of them female micro-entrepreneurs with low school level, are perfectly able to perform transactions with the chosen technology. Tag-Attitude technology proves to be reliable and performing without any major technical problem. The switch with the MIS, developed under the SCBF support, works well.

Client satisfaction is mixed. On the one hand, "Diotelli" is quite easy to use and allows making quick transactions at SLF's counters. Furthermore, clients appreciate the fact that they can control what they are processing. The technology is used as an ATM.



On the other hand, the benefits of Diotelli as an alone standing feature are limited, as long as there is not a larger number of cash points through which electronic money can be exchanged with cash and vice-versa.

The initial hypothesis was that LFS would build beyond its own branch and mini-branch network its own network of third party service points based on mobile phone technology. This solution appears today as only the second best option:

A strong money transfer network based on third party service points is now emerging in Senegal: Wari, owned by Senegalese Cellular System International (CSI). CSI is the Western African leader of money transfer by using a multipurpose platform called WARI. In Senegal, CSI developed a network of more than 3'000 third party agents (small traders, filling stations etc. that are often open 24/7) and are reaching out progressively to rural areas. It appears today that for SLF it is more interesting and less

# Activities / Specific tasks	2012												2013			
	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	
1 Client Need Assessment																
Questionnaire design	✓															
Process organization		✓														
Data processing		✓														
Reporting			✓													
2 Customization of MTX and TAG Attitude																
Creation of the specific data base for SLF			✓													
Terms of reference for Tag Attitude			✓													
Confirmation of data integration MTX-TAG		✓														
Terms of reference for the bridge								✓								
Creation of the bridge										✓	✓	✓	✓			
Test on the bridge											✓	✓	✓	✓		
Presentation to the board of SLF (including preparation)												✓	✓			
3 Design of the tests																
Phase 1: Internal test with SLF staff			✓													
Phase 2: Choise of clients, locations and staff											✓	✓	✓			
Phase 2: Drafting of procedures												✓	✓	✓		
Phase 3: Training of the staff involved in the go live test												✓	✓	✓		
4 Tets implementation																
Preparation of the internal test with SLF staff				✓												
Implementation of the internal test						✓	✓	✓								
Implementation of the go live test													✓	✓	✓	
Follow up of the tests/assesments and ajustments														✓	✓	

costly to cooperate with WARI than to build its own third party service point network. The switch technology developed under the SCBF support can be used to bridge between the IT of WARI and the MIS of SLF in order to enable access to the SLF account from any WARI service point based on mobile phone technology.

To build this cooperation with success is now the next ongoing step. The negotiation under way will potentially lead to the possibility for clients to access their accounts from anywhere in the territory of Senegal at reasonable cost. It is clearly the SCBF support that has put LFS in a position to negotiate at that level, by building the capacity and the technological readiness.

SLF level

The aim of the project was to test a new mobile technology on a small scale. The impact on the institutional and financial performance of the MFI, by the nature of the undertaking, can only be evaluated over a longer time span. The pilot test has elucidated the challenges regarding the use of new technologies in the bank's core business (learning process). The implementation of the pilot test has taken more time than initially foreseen but there is now a real ownership of the process by the team of SLF. Today, SLF has a better idea about what can be achieved with TAG Attitude Technology and how but also about the limits of an internal solution.

Potential: As the optimal technical solution appears today a combination of two elements:

- TAG Attitude technology used a) for cash deposit and withdrawal transactions performed by SLF staff with its clients in rural remote outlets as well as during weekly open markets where SLF rural clients go, or b) by the DEGOs (Joints Liability Groups of 7 to 40 members) for the weekly or monthly internal collection of loan repayments and savings deposits. TAG technology will continue to allow SLF to reduce its transaction costs as well as increase staff productivity and security while no fees need to be paid to third parties.
- Rather than to build its own third party network SLF will use the developed switch to bridge to the WARI network of service points (under negotiation), avoiding at that stage important investments into rural infrastructures that would be profitable only within a longer term perspective and bind important human and financial resources that can be better used in other fields.

The developed technology and the approach now building on it will be a key driver of the development of SLF. In a conservative approach, it is expected that in 2017 more than 300'000 transactions would be operated based on the introduced technology:



SLF Institutional Performance	2012	2013	2016
Return on Assets	-17,27%	-10,35	0,22%
Return on Equity	-20,82%	-13,36	3,92%
Operational self-sufficiency	42,37%	56,55%	104,52%
# of clients per loan officer	245	330	480
Operating expense ratio	83,67%	47,58%	23,23%
# of active clients enrolled with TAG-WARI	0	300	24,642
# of withdrawals with TAG-WARI / % women	0	45	98'568 (96%)
# of deposits with TAG_WARI / % women	0	388	221'778 (96%)
# of transfers with TAG_WARI / % women	0	0	n.a.

4. Lessons learnt and further challenges

The SCBF support and the human resources provided have enabled SLF to engage in an ambitious technology project in a secured way. All parties have certainly underestimated the scope of work and the strategic dimension opened up. Key challenges ahead are now:

1. To integrate the new possibilities in the right way in the business strategy of the institution. The new business plan 2017 in preparation is the right platform for this.
2. To finalize negotiations with technology partners and to create a win-win situation with a network of service points by agreeing on fee structures that are attractive for the clients and the service providers at the same time.
3. To finalize the technicalities of the cooperation with WARI through a testing phase.
4. To integrate the new technologies in marketing, product development and staff capacity building.



As a resumé it is certainly not wrong to state that the SCBF support has enabled SLF to bring its features and its thinking to the next generation, where digital technologies become an everyday tool in the client relationship and where deepening of outreach has new perspectives because technology brings costs for services to affordable levels even in low population density areas.

Collaborating with other MFIs

Caurie Microfinance finally withdrew from the project after giving their initial approval. It was probably too optimistic to believe that a competing MFI would accept to be part of the same project. Nevertheless we do not exclude that it would come back in a second step and join an agreement with WARI, after having evaluated the results achieved.

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- i World Bank, 2014, World Databank, Senegal, <http://databank.worldbank.org>, accessed 26.02.14
 - ii Agence Nationale de la Statistique et de la Démographie (ANSD), <http://www.ansd.sn/>, Accessed 26.02.2014
 - iii African Economic Outlook, 2013, Senegal, <http://www.africaneconomicoutlook.org/en/countries/west-africa/senegal/>, accessed 26.02.2014
 - iv Economic Freedom Index: <http://www.heritage.org/index/country/senegal>. Accessed 15.03.2014
 - v United Nations Development Programme, 2012, Human Development Index
 - vi Document de politique économique et sociale (DPES, 2011-2015)
 - vii Banque Centrale des Etats de l'Afrique de l'Ouest
 - viii http://www.acpeumicrofinance.org/en/actions/coopec_resopp_firur. Accessed 26.03.2014