Applied DFS Research: *Designing, Testing, and Evaluating mHealth Services*

Executive Summary: Our project aims to cut to the chase, to, as the Nike Corporation says, "Just do it." Together with Orange, FHI 360 will design and deploy mHealth products and services that are enabled by digital financial services (DFS) and that contribute to users' financial protection at least one country in West Africa. We will accomplish this through three complementary approaches: **1)** design and testing mHealth products and services in at least two markets, comparing and contrasting user preferences; **2)** Testing and identification of which marketing messages lead to the highest uptake of these services, including health savings accounts; **3)** Using mobile network data analysis to understand how users behave when sending or receiving mobile money transfers, and how they respond to marketing messages. The investment from Digital Square will be used to fund these three processes. FHI 360 will leverage its expertise in responsible data, as well as its experience successfully implementing DFS, health and mHealth projects to lead implementation of the processes. Orange will leverage its market-specific expertise, data analytic capacities and business operations to participate in bringing well-designed mHealth products to market. Upon completion of our landscape report, Orange will conduct its own public-facing evaluation of the project and publish a blog/article detailing the research. If the project identifies viable DFS-based products and services, Orange will consider deploying scaling them within multiple markets. Our theory is that, through developing and testing new mHealth services enabled with DFS, we will identify and enable the widespread deployment of them throughout multiple countries.

Consortium Team: **FHI 360** has advanced capabilities in administering DFS and health research activities, including **The Role of Digital Financial Services in Accelerating USAID Health Goals**, a guide for USAID missions on how to integrate DFS into global health and education projects to meet sector objectives. FHI 360 also developed an ethnography study report on Understanding Liberian Healthcare Worker Interactions with Payment Systems, Mobile Phones, and Financial Behaviors. FHI 360 developed the Guide to Increasing Women's Financial Inclusion in Bangladesh through Digital Financial Services and developed the Gender and ICT Survey Toolkit to address lack of disaggregated data. | **Orange** offers its business and market-specific expertise, insights from other mHealth programs, and advanced data science capabilities. It believes that digital technology is a powerful tool for economic, social and environmental change, and each plays an equal role in its corporate social responsibility (CSR) policy. Its CSR policy guides our strategy, investments and innovations to allow it to produce sustainable value for society, thereby contributing to economic and social development. **Orange will contribute at least 50% of the cost of staff time required for their participation.**

Tamara Shukakidze-Demuria, Associate Technical Director, Crisis Response, FHI 360. Tamara has extensive experience in financial Inclusion in emergencies cash programming and transformative digital solutions. USAID/Haiti named her a "Mobile Money Pioneer" for launching e-transfer modalities for food-insecure populations. She has served on the executive committee of the Collaborative Cash Delivery (CCD) network. She speaks English, French, Russian and Georgian. **Ellen Galdava, Technical Officer, FHI 360,** will manage the overall project. Ms. Galdava has rich experience managing DFS research projects and is highly sought after within FHI for her managerial excellence. Ellen managed production of and provided technical contributions to *The Role of Digital Financial Services in Accelerating USAID Health Goals.* **Jill Shemin, Private Sector & Digital Finance/Digital tools for Emerging Markets Consultant,** will play a key role in engaging users and in product/service ideation and testing. She brings hands-on operational experience evaluating how digital finance landscapes and enabling environments work in different countries. Jill has strong skills in

distilling information for business plans. Jill is fluent in conversational French and is based in Senegal. **Trinity Zan, Digital Health Advisor, FHI 360,** Trinity is currently the Co-Chair of the Global Digital Health Network. Trinity will advise on product and service design remotely. | **Erwan Le Quentrec, Orange,** will participate in the project management and evaluation design. He manages a team of researchers in the Sociology and Economics of Networks and Services (SENSE) Department of Orange Labs. Erwan also coordinates collaborative innovation for the Africa, Middle East (AMEA) region. His activity aims to structure, implement and evaluate experiments, for example, in the fields of mobile learning, digital inclusion or energy with partners such as AFD, USAID, multiple NGOs, startups, universities and Orange subsidiaries. He holds a PhD in Economics from the University of Burgundy (IREDU). | **Stefania Rubrich, Orange** will serve as data scientist. Since 2015 she has worked at ORANGE's SENSE Department. Currently, as researcher, she works in the area of mobile-phone metadata analysis to uncover insights into human behavior, to address the most challenging global problems, in support of development goals. She holds a BSc and a MSc in Biomedical Engineering and a PhD in Bioengineering and Bioinformatics from the University of Pavia, as well as a MSc in Mathematics for Data Science and Big Data from Ecole Polytechnique Paris.

Project Description

Problem Statement: Efforts to improve financial protection in developing countries lack enough research and insights into which commercial products and services have the greatest chances of commercial success, such that they can support both people's financial protection and access to health care. Meanwhile, digital financial services (DFS) are still new to many people throughout the world. While development organizations like PATH and FHI 360 have both evidence of and a vision for their potential, there is significant potential in collecting and analyzing new data on how the appeal of new products/services and on how certain messages or incentives lead to certain constructive behaviors. | Many people simply cannot afford even basic health care and, if they are living hand-to-mouth, may not even own a mobile phone. The higher the quality of health care, the more expensive it is. Only 40% of Kenyans, for example, use public health care, because "public facilities tend to lack equipment, staff, medicine and good quality of care."[1] Efforts to improve health care access by leveraging DFS sometimes inadequately consider the ecosystem of factors affecting people's behavior and choices. If individuals' financial assets are locked in comparatively illiquid informal savings groups, they are limited in their ability to easily take advantage of available health services made available via mobile phones. DFS are about more than just the transfer of money. Data, digital literacy, financial literacy and overall access to relevant information vary significantly by location and yet may sometimes be insufficiently considered.

Approach: Together with our partner Orange, including its Paris HQ and staff in its in-country innovation lab(s), we will use the Digital Square investment design and test mHealth-focused DFS and messaging that enhance individuals' interest in and benefit from these services. Our aim shall be to identify and develop services and messaging that Orange could deploy in its markets of operation. Partnering with an MNO with a regional presence is important for 2 main reasons: 1) We can get access to data on how people respond to products and messaging; 2) With them as partners, we can access their services team. Our data-driven approach would be harder to implement if we had to agree collaboration with partners after we started. Orange as a company recognizes the potential for its platforms to be used in the service of improved health

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[1] "Mobile Money Increasing Health Care Access" https://www.scidev.net/sub-saharan-africa/health/opinion/mobile-money-increasing-healthcare-access.html, April 4, 2018.

outcomes in the countries where it operates. Since much of the research in mHealth completed by the development sector has focused on anglophone African countries, we will focus on Francophone ones. Our M&E approach will qualitatively evaluate our collaboration and quantitatively evaluate uptake of pilot products/services. Our priority countries (in order) are **1) Senegal; 2) Cote d'Ivoire; 3) Mali.**

1. Design and Testing of mHealth Services using DFS:

Illustrative products and services we will co-develop and field test include: On-demand loans for primary health care; triggered low account warnings; Virtual tools for pooling resources amongst family/peers; Automated incentives for savings deposits; Automatic payment repayment plans for those with digitized salary payments; tracking of users using multiple SIM cards using international mobile subscriber identity (IMSI) numbers, in case they often switch SIMs. Additionally, we will: 1) engage ministries of health or social protection (whoever oversees public health; insurance schemes) about integration with Orange services, including by using its mobile money API; 2) evaluate and react to whether the lack of identity is preventing people from using digital health services; 3) include insights from existing Orange mHealth programs, including its partnership with the Global Fund in the DRC; 4) engage private health insurers in the design and testing process, including on whether they can be incentivized to receive payments electronically; 5) examine whether MNO interoperability is a limiting factor, and; conduct literature review and remote consultations to inform product and service design and our landscape report.

2. Marketing/Communications

We will develop test communication messaging, then conduct focus groups. We will test, for example, whether we can influence people to deposit funds in health savings accounts through messaging. We will test all mobile channels, including IVR, USSD, SMS and apps. We will examine whether we can influence information about the positive benefits of mHealth services being spread by word-of-mouth.

3. Mobile Network Data Analysis: Money transfers and information flows

As we roll out test products and services and messages, we will analyze a mixture of data provided by surveys, quantitative and qualitative interviews and Orange bank transactions as well as Orange call detail records (CDRs). The aim is to observe and evaluate behaviors in response to our marketing and messaging. One illustrative research question is: Do messages encouraging health savings sent immediately after receipt of mobile money transfers lead to people setting aside funds? We will analyze the data to determine whether we can identify correlations between messaging and financial decisions related to health outcomes. We will also analyze how information is spreading and highlight leaders through a social network analysis in order to be able to detect the real/informal connections between people. Ultimately this research, which will be made public for all MNOs and FSPs to learn from, will inform Orange's actual mHealth and m-banking strategies and benefit other stakeholders, such as governments, insurers and health care providers.

Risk Mitigation

Potential obstacles and ricks include public and private insurers uninterested in collaborating with us; regulatory barriers to integration of insurance schemes and DFS, and; (highly unlikely) loss of personal data. Our approach to risk mitigation will focus on 1) comprehensive upfront market research; 2) ensuring personal data protection; 3) expectations management; 4) use of data impact assessments; 5) transparency; 6) use of the Principles for Digital Development.