



Leveraging Information and Communication Technology for the Base Of the Pyramid

Innovative business models in education, health, agriculture and financial services

Executive summary



A JOINT REPORT BY



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Your support and faith are deeply appreciated.

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Leveraging Information and Communication Technology (ICT) for the Base of the Pyramid (BoP)

This document synthesizes the conclusions of the study “Leveraging ICT for the BoP” sponsored by AFD-Proparco, Ericsson, ICCO, France Telecom-Orange, and TNO and conducted by Hystra and Ashoka from October 2010 to June 2011. This study aimed to learn from “what works” in terms of full projects (as opposed to technologies) combining both an economically viable model and socio-economic impacts on their end-users, in the field of ICT for development (ICT4D). This work is thus based on the in-depth analysis of existing projects led by various types of actors (social entrepreneurs, NGOs, private companies...), in 4 sectors of “development” where ICT has already shown it could play a key role: healthcare, education, agriculture, and financial services.

This document presents first the overall conclusions of this work, and second the executive summaries of the case studies that these conclusions build on, representative of the diversity of promising business models with socio-economic impact seen during the course of this work.

The full report is available for free download on www.hystra.com.

Note: Hystra is the author of this report. Analyses and conclusions reported here do not necessarily reflect the views of the five sponsors supporting this work.

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Sponsors' foreword

Over the past twenty years, the number of mobile phone subscriptions has risen from 12.4 million to more than 5 billion. The majority of them, equaling 3.8 billion, are in developing countries, where the mobile telecommunications industry has expanded most quickly. Today, even in the most remote areas, people own or use a mobile phone. It is clear that with mobile penetration rates continuously increasing, connectivity – at least for basic voice services – will no longer be a major hurdle in the near future, and development concerns are progressively turning to finding ways to best leverage this connectivity for other services.

Several of the services that can be delivered on telecommunication networks are directly linked to socio-economic development. The focus of this study is the tremendous opportunities that Information and Communication Technology (ICT) offers to provide access to essential services, such as education, healthcare, agro-services or financial services, to underserved populations, especially those at the Base of the Pyramid (BoP) – i.e. the billions of people living with less than a few dollars per day.

In the summer of 2010, in the pursuit of leveraging these opportunities, following discussions initiated by France Telecom, Hystra brought together five actors sharing the willingness to make this promise happen:

- *AFD (Agence Française de Développement)*, the French Aid Agency and Proparco, its private financing arm,
- *Ericsson*, the Swedish world-leading provider of telecommunications infrastructure and services, with business in 180 countries,
- *France Telecom-Orange*, a world's leading telecommunications operator, headquartered in Paris and serving consumers in 35 countries, including 17 in Africa and the Middle East,
- *ICCO*, a Dutch non-profit organization providing funding and field support to development projects in emerging countries, and
- *TNO*, the Dutch independent research organization working on innovation for development.

These five sponsors have entrusted Hystra to conduct this study on mobile services and business models for the Base of the Pyramid (BoP), in collaboration with Ashoka, the international network of social entrepreneurs, and TNO, and with the support of AMG, a consulting firm expert on ICT for Development (ICT4D) projects.

The sponsors of this study believe that independent social entrepreneurs or intrapreneurs (who initiated these projects from the inside of large companies) are a key source of inspiration, and that looking at their projects in depth will allow to identify promising business models and understand the barriers to scale that many projects are facing in this sector.

After reviewing more than 280 projects, this study has grouped the diversity of models seen into 4 different clusters:

- models in which end-users access the technology themselves,
- models leveraging local agents as intermediaries between the technology and end-users,
- innovative initiatives leveraging the power of the “crowds” in a two-way exchange between the developed and developing worlds, through so-called crowdsourcing or crowdfunding, and finally
- financial services requiring a robust secured platform accessed either by end-users or intermediary agents, or both.

Within these clusters, 16 initiatives of the most ground-breaking business models set up to date, have been analyzed through field visits, interviews, and experience sharing during workshops. These models are presented as case studies in this report, highlighting that promising business models can allow the sustainable large-scale development of ICT-based services for the poorest.

A conclusion from this work is that entrepreneurship is key to starting successful services, while collaboration and the construction of an ecosystem offering a range of services are key to scaling. AFD-Proparco, Ericsson, France Telecom-Orange, ICCO and TNO are and will continue fostering both entrepreneurship and collaboration, to support the development of affordable services aimed for the poorest of the population. This is the reason why we have decided to make the results of this report public.

We hope you will find valuable insights to move forward with us in multiplying the impact of market-based approaches leveraging ICT for development.

Sincerely,

Caroline Cornu, Executive Director, External Relations and Partnerships, AFD-Proparco

Elaine Weidman-Grunewald, Vice President, Sustainability and Corporate Responsibility,
and **Arun Bhikshesvaran**, Vice President Marketing and Chief Marketing Officer, Ericsson

Denis Guibard, Vice-President, Sustainable Development, Products & Services, France Telecom-Orange

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Executive summary

Market-based solutions leveraging Information and Communication Technology (ICT) for the Base of the Pyramid (BoP): A very dynamic field... with stronger rhetoric than reality

ICT has long been talked about as a lever that would enable developing countries –and particularly the least developed ones – to take “shortcuts” to development by using the latest generation of equipment and software, hence avoiding the decades of trial and error that developed countries have gone through. Indeed **ICT can deliver information and expertise to people who do not have either physical or financial access to these resources**, and help remote BoP citizen consumers and entrepreneurs make significant improvements in their lives. And today seems to be the right moment, when **connectivity has extended sufficiently for this wave of “socially-beneficial” services to ride efficiently on technology**: 90% of the world population now has access to mobile networks, and mobile phone penetration rate in developing countries reached 68% in 2010, with 3.8 billion mobile phone subscriptions in these markets.¹

However, **ICT is no “silver bullet.”** In this report we have looked at four sectors of ICT4D (ICT for Development): education, health, finance and agriculture. While there is a wide variety of viable or partly viable business models, **more than half of the 280 projects screened for this study were still young and/or not financially sustainable.** The field of ICT4D is nascent, from the oldest proven projects using computers (such as eChoupal and Drishtee² for example) dating back to the early 2000’s to the new business models of today such as RML, Esoko, or txteagle taking advantage of the recent spread of mobile phone – the prominent tool of ICT4D. **Projects that have reached the “million customer landmark” remain the exception.** As mobile phone development is recent and on-going, it is still too early to speak about results in a definitive manner.

Additionally, **many ICT4D projects have a short lifespan, many being donor-funded and donor-driven pilots lacking an identified, economically viable, long-term value proposition.** Many ICT4D initiatives completely rely on donor funding for financing (136 initiatives studied

here), while some use some measure of subsidies in their operating models (35). The remaining projects, though possibly market-based today, often have used grants in their initial phases to grow. Many projects have mistaken population need for consumer demand, providing a service that the targeted end-users or beneficiaries were not willing to pay for. The result is the creation of business models that, while well intentioned, were not sustainable.

Another key challenge faced by ICT4D projects and their proponents is that the direct impact of ICT on development projects is challenging to single out and measure. By nature, even projects that would not have been possible without ICT encompass other dimensions beside the technologies themselves, and often the ICT component is not entirely devoted to social purposes. For example, Drishtee, an Indian social enterprise which has set up rural IT kiosks, uses its computers for ICT training, but also as internet spots for other purposes for villagers, and at the same time the Drishtee model encompasses non-ICT services such as the physical delivery of goods. This makes it difficult to assess results of ICT itself and take action to improve the ICT component of development projects.

Various levels of financial viability, with more viable cases in finance and rural development

While not always the panacea, a number of the cases studied can have a significant social and economic impact, from lower costs of money transfers (Bradesco, FINO, M-PESA) to increased agro-productivity and revenues (CKW, eChoupal, eKutir, Esoko, RML, txteagle) to enabling access to appropriate health information (mPedigree, HealthLine) or even providing cardiac care for the poorest (Narayana Hrudayalaya Hospital), to educating the most remote (BBC Janala, Drishtee).

In order to better understand the common barriers to scale faced by these initiatives across sectors (finance, agriculture, health and education), we organized our in-depth analysis of 16 ICT4D examples in four cross-sector clusters, based on the business models of these cases, as indicated in the graph below and detailed hereafter:³

¹ *Measuring the Information Society – 2010, International Telecommunication Union (ITU), 2009 and The World in 2010: ICT Facts and Figures, ITU, 2010, www.itu.int/ITU-D/ict/material/FactsFigures2010.pdf*

² *See case studies of these two projects (and the other projects quoted here) in the second part of this document.*

³ *This report initially included a case study on a mobile-based insurance service, which we were asked to remove just before publication due to unexpected issues with possible legal implications. This report still builds on the lessons learnt from that project as well as the 15 others, but only 15 case studies are presented in this document. “Insurance via mobile” on the graph refers to that 16th project.*



This “diversification” is a necessity for local agents to remain economically viable today, since only selling “ready made” information is not a strong enough value proposition against what cell phones can increasingly offer via direct access models.

This model requires smaller initial investments than the direct access model to design tailored technology services, as local agents do the last mile customization. However it needs a sustained financing mechanism for the initial set-up costs of each agent (including technology, but also the cost of selecting and training agents). Once established, trusted agents (typically chosen among opinion leaders) can easily sell new services, thus not requiring as heavy marketing expenses as direct access models do. This model can also benefit from multiple sources of revenues due to its wide range of services – from fees for expert consultations to commissions on products sold through this channel.

Challenges are thus to fund expansion (rather than the initial service development) in terms of financing new agents as well as training them to become trusted and informed sales people, and to find “aligned” partners to offer a wide enough range of relevant services. Additionally, as each agent must typically serve several hundreds of people to be viable, this model will only make sense in dense enough areas.

▪ Crowdsourcing / Crowdfunding models:

Crowdsourcing models treat the BoP as participants in a value proposition: doing small tasks or gathering local information aggregated by technology for larger institutions, against compensation. Crowdfunding models match BoP entrepreneurs without access to traditional finance and investors looking for small business opportunities. Both models thus directly bring funds to the BoP.

These models, still young, are finetuning their value proposition. As they reduce costs of gathering data (or of screening investment opportunities), they should be able to redirect these cost savings towards payments for the service they offer.

The key challenges ahead are the scale up of their back-end for large quantity of information from numerous sources, and the recruitment and on-going motivation of trustworthy “crowd” participants who will source reliable and quality inputs.

▪ Financial Services:

Financial services offered via ICT can either be

- a substitute to existing practices (e.g. mobile money transfers replacing physical money transfers like in the case of M-PESA, or loan repayments through

cards at point of transactions instead of in-person payments in the case of FINO); or

- an entirely new practice for unbanked populations (e.g. life insurance available via mobile phone, or “meso-loans”⁵ for social entrepreneurs, such as those offered by MYC4 to African entrepreneurs).

In both cases they require a robust secured platform and either local agents to sell the service initially and manage the cash, or/ and a direct interface between technology and end-users. They must create trust in the technology and - when agents are needed - in the agents, for example by leveraging existing trusted networks such as airtime resellers (M-PESA) or post office agents (Bradesco-Banco Postal).

The business models seen tap into various (and generally multiple) sources of revenues: from government for social transfers channeled more efficiently via mobile phones or small shops equipped with IT (notably done by Bradesco in Brazil and FINO In India), to insurance companies for the sale of new micro-insurance products to the BoP, to telecommunication operators when the service increases their customer retention, to end-users via fees on their financial operations.

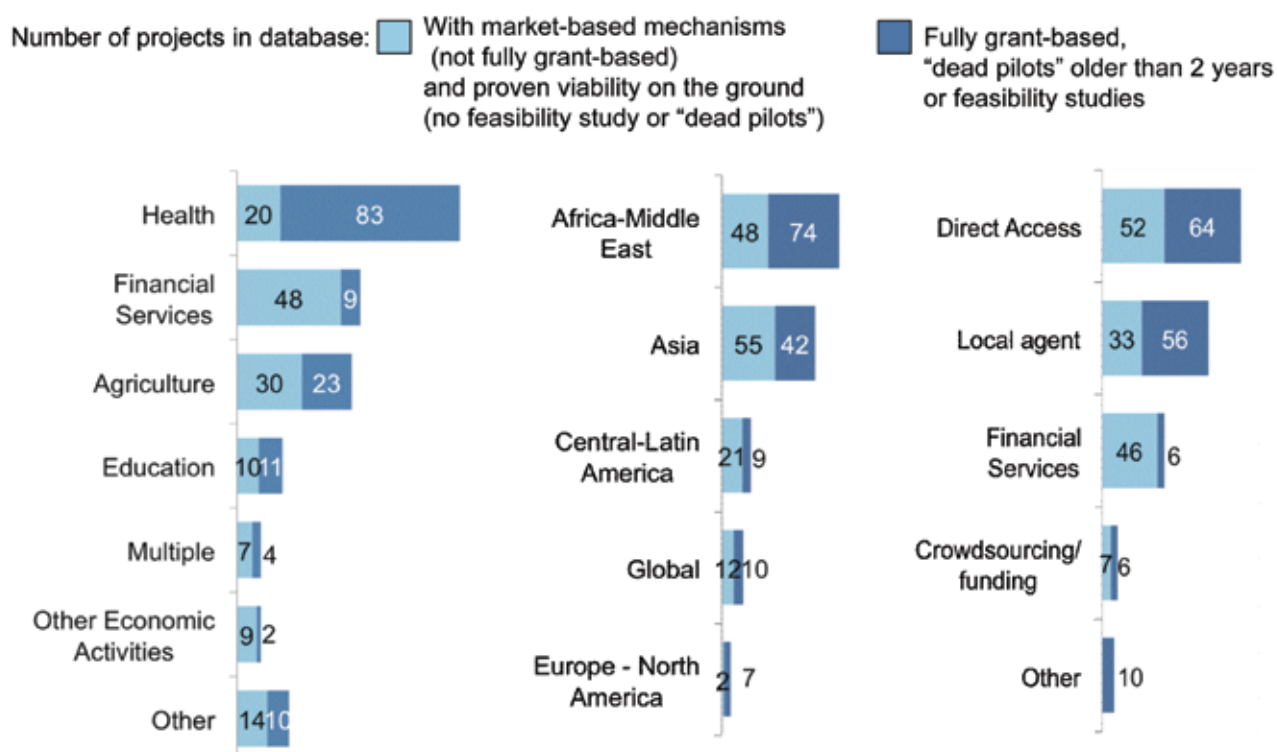
Moving forward, existing initiatives that use agents will need to densify and better secure their agent network to make their offer easily accessible to all. This implies often first to piggyback on existing networks, then to create new ones for a second step of expansion, as well as to improve cash management to avoid that these agents bear the risks of carrying cash that their clients now avoid. Governments can play a large role in promoting such services through explicit policy support or even by using these services for their social transfers, while companies launching these initiatives should be aware that they will need to invest both in increasing financial literacy to sell complex services such as insurance, and in sustaining customer relationship to maintain users active.

As shown on the graph below,

- 1) there is an equivalent proportion of business models based on direct access to technology or on a local agent intermediary, that have survived the pilot phase and use some type of market mechanism;
- 2) the different sectors studied display distinct levels of maturity in terms of encountering economically viable mechanisms, whatever business models they use.

⁵ i.e. loans for amounts that are larger than microcredit amounts, and lower than what traditional banks would offer.

“Financial services” is the most mature area in market-based ICT4D projects



- **In finance**, where the need is that of 2.5 billion unbanked adults, momentum is building in the range of services delivered to the BoP as well as in the number of initiatives: money transfer systems are being complemented with account holding, lending, and insurance (at least 3 programs of insurance via mobile phones were launched in the past 6 months). There are now more than 80 mobile money services around the world, purely market-based. Successful projects have grown to reach more than 5 million customers each (up to 28 million in the case of FINO).
- **In agriculture and rural development**, a variety of fairly large-scale and mature ICT-enabled projects demonstrate economic viability and provide significant social and economic value. Such projects are directly linked to income-generating activities (for example providing better selling opportunities for agro-products), making their value easily visible for end-users. In our study, 30 projects out of 53 agro projects identified were partly market-based and still running. The largest projects (eChoupal, Drishtee) have impact on several million people.
- **Healthcare** is an extremely dynamic sector of ICT4D, but to date has mostly attracted donors. Out of the more than 100 projects in ICT4health identified for this study, only 20 were at least partly market-based and had survived the pilot phase. While donor projects were often focused on awareness campaigns or health

data gathering and analysis, market-based approaches focused on remote diagnosis or drug authenticity verification. They serve up to a few million clients in the case of basic information (simple health information for HealthLine), and several hundred thousand customers in the case of specialized remote diagnosis (cardiac diagnostic for Narayana Hrudayalaya Hospital).

- At the other end of the spectrum, there are very few **education** projects with truly market-based approaches targeting the poorest – be it BoP children or adults who still need education and professional training. We found only 21 ICT4D projects specifically focused on education, less than half of which had at least some market-based component. Education was included in the business models of specific projects mostly as training and to help build the capacity of adults. However, some not-for-profit projects (e.g., MoMath⁶) and the success of BBC Janala (providing paying English lessons to several million Bangladeshis over multiple media platforms) have demonstrated that demand for general education support is emerging. Yet without government procurement it remains to be proven that there is sufficient purchasing power at the Base of the Pyramid to pay for the development costs of ICT-based education (support) services. What is missing at this stage is a demonstrated commitment by most governments to procure education-supporting services from private providers.

⁶ See discussion on MoMath in the Education section of the full report

Entrepreneurship is key to starting successful services, while cross-sector and cross-actor collaboration is key to scaling

Interestingly, across sectors and business models, successful projects share common characteristics:

- They are **focused on the ability and willingness to pay of their customers**, rather than on externally identified social needs and supposed demand.
- They are **built from the ground-up through a trial and error approach**, flexibly evolving over time based on end-user feedback until they match demand.
- They end up **capturing a sufficiently large share of customer's mind and wallet** (through a related set of services) to recoup the initial investment and to minimize the proportion of revenue that is devoted to marketing expenses once an ICT channel is built.
- They leverage this channel to the maximum with a **wide range of services, combining varied revenue streams**. ICT4D is a low price-high volume market, with unit price of each service in the order of magnitude of a few cents to a few dollars at best. The larger the offering of services, the easier the customer base expansion and cross-sales of complementary services becomes, thus speeding up cost recovery, and maximizing impact.

The first two characteristics describe an entrepreneurial debut, requiring time before “getting the business right” (one or two years of adjustment is the minimum) and often necessitating a corresponding high initial investment (in the order of magnitude of several million dollars) to finance these adjustments.

Notably because of the inherent conflict between these entrepreneurial characteristics (needed for initial proof of concept) and the systemic approach required to scale, a number of obstacles fall in the way of ICT4D project leaders interviewed for this study, be they managers within large corporations or social entrepreneurs.

- They need an **adequate policy framework** to develop, often requiring changes in existing regulations to allow the use of ICT in their development field, and sometimes depending on government support for success. In many cases the need for multiple approval processes (e.g. telecom regulation and healthcare regulation) for unusual offerings considerably slows down projects.
- The difficulty in this field is to combine a **very local understanding** of people's habits and demand with the **necessary technical expertise** and the **specific sector expertise** – this means a need either for partnerships

or for growing the required internal capacity, both for the core team and field employees.

- They need **funding** at several levels:
 - equity investment (possibly under the form of patient capital) for the company,
 - loans for their local agents – often considered unbankable, and with loan amounts between those of MFIs and of traditional banks,
 - and donations or investments by third parties sharing their interest in developing the service (notably for awareness, marketing and the training of employees).
- **Technology** remains an issue, in the pilot phase to design an interface with great usability, and more importantly in the scale up phase when the back-end needs to be adapted to larger numbers. Social entrepreneurs seem to suffer more from a **lack of digital literacy and IT expertise**, because many are field practitioners (as opposed to managers of ICT4D projects within large companies).
- Finally, though this is not a challenge mentioned by the project leaders, our research seems to point that there is no “quick and dirty” way to test services locally – they all need **several months, if not years, of field testing** to be suited to local needs – which further lengthens what is usually an extensive service design and technical trial period before service is made available widely.

These issues are at the same time significant challenges and an exciting opportunity in the sense that – if addressed systematically and systemically – they could generate high social and economic returns. Market-based solutions in ICT4D are a **high risk, high return** game. In this perspective, ecosystems of ICT4D specific initiatives and stakeholders would favor the scale-up and replication of ICT-based businesses. Indeed, to scale up, an ICT4D project needs of course the “ICT” part (robust and locally appropriate technology with adequate network), the “D” part (locally relevant development content), but also an adequate political framework, supportive or at least permissive for innovative initiatives to develop. Such ecosystems not only require encompassing several actors (from the public, private and citizen sectors), but can also benefit from encompassing several areas (notably those studied here – agriculture, finance, health, education), serving a wider share of their customers' needs and leveraging infrastructure to generate several revenue streams. This evidence would notably point to the establishment of regional clusters of ICT-enabled businesses in given geographies, providing a wide range of services, that could catalyze high economic and social impact in the medium and long term.

Going forward: Building ecosystems for rural development and other opportunities

Rural areas seem to have the most to gain from ICT4D. The key issue that their inhabitants face in terms of development is their lack of access to many services. Building a sustainable business case on health, finance, agriculture and education can be facilitated in a rural setting thanks to the immediate visible economic impact of such services – previously unavailable, and suddenly bringing a whole new set of possibilities to rural populations until then disconnected from the rest of the world.

Though rural development is indeed one of the opportunities of ICT4D socially and economically speaking, it is too early at this stage to state where the most promising venue will be. The area with the largest potential will depend on:

- **The number of potential clients** (both individual and businesses) for a given type of service – most of the world population in health; children, students and adults requiring training in education; adults in financial services; and in agriculture most people in rural areas
- **The improvement it will represent** compared to previous service offerings and the added value brought in comparison, which will determine how much people could be willing to pay
- **The level of novelty of a service** – harder to promote if it is entirely new and does not replace an existing practice as it necessitates consumer's education. Success for such initiatives is likely to take more time than for those "simply" granting easier access to existing services

And finally, as all actors of one given sector need to collaborate to successfully create efficient ecosystems of ICT services, **their willingness to participate as a whole sector in these new types of "social businesses" will be key to enable a given sector to make the most of ICT.** Indeed, all have a role to play. Much relies on:

- **Governments** to encourage the use of ICT;
- **Aid agencies** to inform all stakeholders and support adequate models via research and financing lines;
- **Social entrepreneurs** to develop innovative, grassroots, locally appropriate businesses with strong partners;
- **Large corporations** to invest as heavily as is required to scale up existing models and have a true impact;
- **Financial institutions** to provide the various types of capital needed to get the models right;

- **Citizen sector organizations** to help recruit the adequate workforce and build awareness on the ground on the benefits that ICT can bring in many fields of development; and
- **Research institutions and academia** to help understand the case for health and education ICT business models and find how to better measure the impact of ICT (and compare its cost-efficiency to that of alternative means of development).

Because of the need for ecosystems that is specific to the ICT sector, our key recommendation is for actors to work together to co-create solutions where ICT is the best way to bring development, making sure to answer a proven demand rather than estimated needs, and being careful about promoting an ICT solution when cheaper, more efficient alternatives might exist. More specifically, and as detailed in the next part, making the most of ICT4D through market-based approaches would require to:

- 1) Focus on problem-driven approaches for sustainable projects to emerge out of the myriad of existing trials**
 - a. Start from the ground-up, first identifying local problems to then develop equally local solutions
 - b. Create the necessary ICT capacity among practitioners
 - c. As a large player, foster the emergence of small ICT4D ventures
 - d. Help build the case of the impact of ICT on development
- 2) Support existing entrepreneurs, promoting cross-sector synergies and removing current barriers to scale**
 - a. Promote or take part in cross-sector collaboration
 - b. Assist in awareness building, training and recruitment of clients, staff, and agents
 - c. Simplify regulatory process
 - d. Create a range of adequate financing tools
- 3) Create a systemic environment for cross-border replication**
 - a. Build a holistic platform for replication of successful social businesses
 - b. As governments or international development agencies, work on setting up a regional platform (or take part in one if it already exists).

Recommendations

1. Focus on problem-driven approaches for sustainable projects to emerge out of the myriad of existing trials

As has been seen in this study, the ICT4D sector is an extremely dynamic sector, yet very few projects are based on actual demand. A problem-driven approach incorporating a study of the demand, capacity building in ICT literacy for field practitioners, and support for entrepreneurial approaches, should allow for more ICT market-based solutions to emerge. We advise all actors willing to create or leverage an ICT-enabled service for the BoP to:

a) *Start from the ground-up, first identifying local problems to then develop equally local solutions*

Successful models solve local problems with locally useful information available on local tools. If companies, governments or Citizen Sector Organizations (CSOs) simply try and adapt an existing offering to poorer clients or beneficiaries, it is likely that the targeted users will not use it. Developing appropriate content requires field research, be it by academia, research institutes or CSOs, or by the entrepreneurs or MultiNational Corporations (MNCs) willing to set up a new venture. The areas below necessitate specific research:

- **For health and education, study both needs and demand.** Whereas the BoP already spend a significant share of their income (and the government a significant share of its spending) on low quality service, many health and education ICT services have been provided free of cost, on a trial mode; they were subsequently abandoned as soon as funding ran out, raising a fundamental question: **how can an ICT-enabled health or education service – corresponding to real demand – be built and made to offer to the poor’s budget (potentially including government spending) an efficient and high quality alternative to the existing status quo?**

- One domain where this could be particularly relevant, allowing significant savings in the healthcare system, is prevention. A theoretically ideal field for ICT, it has had little proven impact so far. How to link it to the rest of the healthcare value chain and include it in viable business models, potentially coupled with insurance schemes, remains to be put together.

- In education, employability seems to be the key assessment criteria to evaluate teaching and training. Understanding and designing the types of services (including creating content) that would fit this need, is another area requiring innovation.

- **For financial services, study the potential of Micro Small and Medium Enterprises (MSMEs) focused m-banking services.** Several recent studies point out that MSMEs are already using m-banking significantly for their businesses, though this practice is informal.⁷ The potential both to help MSMEs develop and to develop a new economically viable m-banking service dedicated to MSMEs is worth further investigation. Singling out their early adopters’ role in m-banking, may provide a roadmap for further development of the m-finance industry. However, money-laundering issues remain a hurdle to significant increases in deposit and transfer thresholds.

b) *Create the necessary ICT capacity among practitioners*

- **Promote ICT literacy for practitioners in health and education.** Both sector and ICT expertise are necessary to succeed in the field of ICT4D, and it is easier to train a doctor in ICT than to train an IT expert to become a doctor. The lack of knowledge of these technologies is one of the factors explaining the low level of use seen in developed countries as well, where doctors, for example, have been slow to adopt the use of computers although there is evidence of cost savings and greater efficiency when compared to paper-based practices. In both health and education, training agents – such as doctors and teachers, but also nurses, managers and parents – can have a multiplying effect in the adoption of ICT by promoting its use among patients and students as well. It will also provide the ICT literacy seeds for ICT social businesses to develop.

- **Promote ICT literacy in the general public.** To further enable access to ICT services, the need for ICT training is not only for agents, but also for the general public – starting at school and in college to bridge the digital divide.

- **Promote adequate university ICT courses** (corresponding to technologies in use in each country, including mobile phones) to train local developers attuned both to local needs and latest relevant technology developments.

⁷ See notably [www.spidercenter.org/files/SME%20and%20MMT%20usage%20in%20Tanzania%20\(April%202011\).pdf](http://www.spidercenter.org/files/SME%20and%20MMT%20usage%20in%20Tanzania%20(April%202011).pdf) and <http://scholar.mak.ac.ug/andwalana/publications/mobile-money-use-uganda-preliminary-study>. A recent study conducted by Lennart Bångens & Björn Söderberg with 110 MSEs (just micro and small, not medium sized enterprises) in Tanzania about their usage of mobile money showed that MSE’s may help “diffuse” mobile money by prompting customers and suppliers to sign up - yet another reason why they may be of high-value to MNOs as early adopters.

- **Promote ICT literacy at government level.** Providing appropriate information to authorities about the potential and key factors of success of ICT, is necessary to create the necessary awareness for governments both to draft adequate policies and use ICT cost-efficiently for public services.

c) *As a large player, foster the emergence of small ICT4D ventures*

- **As a government agency, lead the ICT4D sector by example.** In healthcare, education, and financial services, promoting usage of ICT in the government and administration processes will create a market for entrepreneurs, and build trust of the population in the corresponding ICT system.

- **In financial services, propose to use remote banking for government payment and state insurance.** This will help branchless banking develop, as happened in India when the government announced that it would promote inclusion of unbanked villages, leading to the emergence of actors such as FINO; providing government payments got FINO's name known and trusted before they started providing other financial services such as money transfers. Similar government support for social money transfers via technology helped actors like Bradesco Banco Postal develop in Brazil.

- **In health, promote the use of ICT as a tool for efficiency.** Replicating NHH's business model could improve healthcare efficiency and be cost efficient for public or private health insurance schemes, hospitals and patients. Setting up phone help lines on health for remote populations such as HealthLine in Bangladesh can avoid transportation costs and lost days of wages to poor population while doing an efficient triage for public health facilities.

- **In education, incentivize the creation of new ICT-based services,** including the exploration of new models on mobile phones, as the sector is still poor in viable business models.⁸

- **As a large corporation or development agency, support entrepreneurs** in geographies of interest with advice and investment, and allow "intrapreneurs" within MNCs to help grow these model projects. The ICT4D sector is extremely dynamic with new enterprises developing every day, full of ideas but lacking the technical expertise, information and know-how that MNCs and development agencies have. Within MNCs, ideas from

internal staff have led to some of the largest successes examined in this report.⁹ To identify and support such ideas, one possibility is to create "innovation challenge" programs and prizes for new ideas and technologies to gain visibility (and raise seed funding or investment capital in the case of external entrepreneurs), and to offer to incubate the most interesting projects notably with funds and technical assistance.¹⁰ Large corporations willing to go a step further can consider the creation of specific ICT4D business units.

d) *Help build the case of the impact of ICT on development*

Most of the projects seen here either do not measure impact, or in the best case measure the overall results of their projects without singling out the ICT component. Better understanding of the cost efficiency of the ICT component could allow for more informed investment decisions regarding the hardware and software set up in development projects, eventually leading to a more efficient use of funds and a larger impact.

Research agencies and academia in particular could research three areas to better build the case of the impact of ICT:

- Developing impact monitoring and evaluation tools for development project that allow to single out the impact of ICT,
- Conducting long-term studies regarding that impact, so far mostly gathered anecdotally, and
- Studying the cost efficiency of ICT solutions for development compared to other solutions and methods in this field.

2. Support existing entrepreneurs, promoting cross-sector synergies and removing current barriers to scale

ICT4D project leaders and entrepreneurs face issues in scaling their innovative models, often needing expertise on one of the four aspects of ICT4D market-based projects – technology, social impact, business skills or sector expertise. For this they need to build internal capacity or partnerships with external actors with the expertise they lack, as explicitly mentioned by 7 of the 8 entrepreneurs interviewed.¹¹ Additionally, they face significant challenges in the lack of policy support and lack of ability to find adequate financing (mentioned by three quarters of the entrepreneurs interviewed), and technology (mentioned by half). We thus suggest the following actions:

⁸ For example, in South Africa, the Vice President challenged Nokia in 2008 to give a proof of concept of how mobile phones could be leveraged to improve learning of mathematics at school. This led to the emergence of MoMath, providing math exercises on cellphone for high school students, one of the most talked about ICT4education project in 2011.

⁹ RML was launched by Reuters, M-PESA by Safaricom, eChoupal by ITC Ltd, and FINO was incubated by ICICI, all following the good idea of an inspired individual or team.

¹⁰ Vodafone and the Web Foundation have founded such a program since 2010 in Ghana called "Mobile-Empowered Entrepreneurs in Africa", which selects entrepreneurs, trains them, supports them with business development and puts them in contact with funders. See www.webfoundation.org/projects/mobile-entrepreneurs.

¹¹ Among the 15 project leaders interviewed, 8 were entrepreneurs independent of large companies (as opposed to intrapreneurs within an existing large company).

a) Promote or take part in cross-sector collaboration

- **As a technology company, support social entrepreneurs with their technical requirements.** Entrepreneurs and enterprises setting up ICT4D projects often need technical assistance, notably to help their selection of a system for back-end infrastructure (database, servers). Technology companies and providers can help social entrepreneurs with their own technical expertise, possibly as a support to the global ICT4D fund described below, through early partnerships. They can for example help create cloud based application development suites that are robust enough for global spread, or more generally set up technical assistance programs to send their staff as technical support for the early stages of socially-oriented ICT projects.
- **Study and promote new forms of public-private cooperations to improve the efficiency of public service process.** Learning from existing successes in using ICT for government services, governments, entrepreneurs and large companies could work together on many government services in domains like health and financial inclusion (including m-social transfers), but also in domains outside of the scope of this study such as property rights.¹² In areas such as health and education where the public sector plays a large role, private players are likely to need the support or at least the buy-in of governments to take advantage of potential synergies with the public sector. For governments, using ICT for public services is not only a way to support new ICT4D entrants, but also a means to enhance government service at minimal costs. In some cases, it is a necessity for projects to replicate successfully in a new country.¹³
- **Deepen the understanding of the different ways to collaborate with actors across sectors.** Not only are partnerships hard to create; they are also hard to maintain successfully. 13 out of the 15 project leaders interviewed mentioned that they needed partnerships to scale, and several of them faced significant challenges in finding or implementing these partnerships. New forms of partnership may need to be crafted especially regarding shared data collection, data aggregation and data privacy issue, as well as integration of diverging objectives (notably in case of a partnership between a socially-minded partner and a more business-oriented one). Research remains to be done on what can make such partnerships work.

b) Assist in awareness building, training and recruitment of clients, staff, and agents

- **Support “local agent” initiatives by supporting the agents themselves.** Knowledge of local conditions and trust from local communities are precious assets to select and train local agents. Entities that have both (notably NGOs) can either act in partnership with companies or entrepreneurs setting up such local agent scheme, or generate revenues from such services that also expand social impact.
- **Support services directly accessed by end-users by raising awareness and educating users** on technology literacy, as well as on the benefits of the service provided. For example, unbanked rural populations are likely to be financially illiterate. Explaining to them how an insurance policy works will encourage them to take advantage of it, while extending the reach (both revenue- and impact-wise) of branchless financial institutions.¹⁴

c) Simplify regulatory process

Setting up a supportive policy environment is primarily a role for national governments, that local agencies can emphasize through localized actions, and that could then be harmonized at a regional level (see Part 3 of the recommendations).

- **Set up a “one-stop shop” approach to facilitate the establishment of ICT-based social enterprises.** Today, such enterprises often have to get double approval of their business both from the telecommunication authorities and the health or education authorities, for example. Appointing one focal point would save time and money for these initiatives, (e.g. allowing rapid authorization to use short codes for agro or health helplines, or providing one unique representative as regulator/standards agency for each business) allowing them to develop faster.
- **Along the same lines, setting up standards can simplify the scale up of ICT ventures,** notably the harmonization of such standards of ICT use across sectors, the implementation of rules for database interconnectivity (including between several telecommunication operators and the banking sector, to allow wider spread of m-banking solutions) and the definition of norms for client record management, including patients in the health sector.¹⁵ As in any domain, a balance has to be struck between standardization and allowance for technology evolution.

¹² Bhoomi is a government project in Karnataka, India, where 20m land records were digitalized for 7m farmers of 27k villages. In 2002, after the roll-out of Bhoomi, these records were available for print in 202 village kiosks managed by government officials for 15 INR (under \$0.5) per record. The system had 0.7m users per month and had provided 70m copies of land records since its launch (20m each year). Since 2003, the project has been deepened with improvements of the software, and 42 additional services offered at data centers. To date following proof of concept 800 telecenters have been set up through public private partnerships, with private companies paying for part of the investment needed to set up the 600 additional kiosks.

¹³ Medicine authentication via SMS as does mPedigree is an example of an initiative that can only reach full impact if conducted in partnership with the government, to scale up to a national level.

¹⁴ Consumer education is a particularly important pre-requisite for complex financial services such as insurance. FINO is setting up a “financial literacy university” to train people on various financial products, while eChoupal, Drishtee and FINO train their agents to in turn train customers.

¹⁵ Zambia did it successfully via the Public Management Establishment Control (PMEC) database, which defined the information flows between the central Public Service Management Division, ministries, departments, regional and district offices, and the Ministry of Finance.

- **State visible, clear and transparent policy for ICT use**, especially in education and healthcare (sectors somewhat orphan of ICT-enabled private sector), to enable stable partnerships between actors that are not used to working together and traditionally depend on different ministries.¹⁶ In financial services, set up regulations that leave space for locally appropriate remote banking services to develop, as different solutions will work in different places. For example, the Central Bank of Kenya allowed M-PESA to operate outside the mandates of the banking law, and the Kenyan government is currently following M-PESA's development to establish an adequately supportive regulation framework.

d) *Create a range of adequate financing tools*

Development agencies, investors, social investors and donors, as well as the traditional banking sector, can all help create financing tools to satisfy the unfulfilled needs of entrepreneurial approaches in ICT4D, especially for early project stages, consumer education and awareness programs, and local agent networks. 9 projects out of the 16 we reviewed benefitted from grants or seed capital in their early stages, and 9 mentioned that they currently needed funds to scale.¹⁷

- **To support take off of young ventures, provide patient capital and be ready to take risks.** ICT services require a significant upfront investment of several million dollars: 1) in the design phase to develop locally appropriate content that truly fits demand and a scalable back-end (this will require trial and error for at least a year, based on the examples of this report), and 2) in the scaling phase for marketing to build trust and consumer awareness. Given the time needed to “get the business model right”, providing grants or patient capital will be a valuable support for grassroots projects to take off. However investors in that space should be aware that risks of failure are high. A fund specializing in ICT4D services can lower its risk by stimulating cross-border learning (see below in 3.a)). For the happy few successful models, the growing ubiquity of ICT will allow to scale swiftly.
- **To deepen the reach of existing ventures in the less educated strata of the BoP, provide grants for awareness and education.** These grants will be useful to raise awareness for “to-be” customers, notably on basic financial and technology literacy, and health awareness.¹⁸

- **To support local agent network expansion, fund “missing middle” credit lines that will finance local agents directly.** For ICT4D entrepreneurs it makes sense to limit financing requirements through a microfranchising model, leveraging local agents that would self-finance the initial technology requirements.¹⁹ In this case small businesses such as those of local agents are part of “the missing middle”, with financing requirements around \$800 to \$15,000, too large for microfinance and too small for traditional banks. Creating funds for joint loans to a pool of agents directly disbursed by the central platform of the ICT4D project, or credit lines specifically dedicated to these agents with streamlined assessments to limit costs of due diligence on such small loans, could therefore contribute to removing a significant barrier to scale.²⁰

3. Create a systemic environment for cross-border replication

The cases seen here highlight the need for a systemic approach to succeed – systemic both in terms of mobilizing a wide range of actors, from entrepreneurs to policymakers to CSOs to large companies and investors, and in terms of developing a wide enough range of services to be economically viable in a low-value high-volume market. As the field is also very young, most enabling frameworks have not yet had time to evolve into a favorable platform for replication. And yet the successful examples seen here call for a wider deployment, that will only be possible if the key local factors of success – in particular the favorable policy environment not only regarding ICT, but also regarding its use in a given sector – are replicated elsewhere. Thus we suggest the following:

a) *Build a holistic platform for replication of successful social businesses*

This platform would support both the advisory and financial requirements of social entrepreneurs, and would include:

- **A forum for cross-learning:** Most entrepreneurs working on similar types of ICT4D projects have reinvented the wheel in their own way. Connecting existing successful models in one geography to entrepreneurs with similar ideas elsewhere would save them time and money, increase their chances of success and thus accelerate impact. Any international entity that has a cross-country knowledge of specific sectors has a role to play in encouraging or providing advice on the replication of best practices in new locations, and bringing sector-specific

¹⁶ In Bangladesh for example, the absence of regulation regarding mobile health allowed policy conflicts to dissolve the strategic collaboration between telecommunication operator GrameenPhone and healthcare provider TRCL regarding the HealthLine service they had initially set up together.

¹⁷ BBC Janala, CKW, M-PESA, mPedigree, MYC4, NHH, txeagle, benefitted from early grants. eKutir and Drishtee benefitted from seed capital. FINO was incubated by ICICI, effectively subsidizing initial costs. Bradesco, eChoupal, HealthLine, RML and Esoko were financed as investments from the start, by the large corporations of which they are part for the 4 first ones, and on personal funds in the case of Esoko.

¹⁸ Example of grants used for training by mature models: FINO is setting up a “financial education academy” to train its future agents. Other mature models use grants to provide services to the very poorest: NHH subsidizes some of its operations for the poorest, notably providing telemedicine services for free, to provide cardiac care to all who need it.

¹⁹ This is done for example by CKW, Drishtee, eKutir, VillagePhone initial model as well as its replications such as PT Ruma.

²⁰ Drishtee is studying the possibility to set up a revolving fund to finance its local agents.

actors together in similar forums. Support for a formal or informal federation of incubators would benefit from an ICT4D intelligent overhead infrastructure. This can be done as a support to the replication fund suggested below.

- *A global (or at least regional) ICT4D fund:* The fund would optimally include equity capital for young ventures and soft money to finance cross-learnings from previous similar initiatives. As local conditions differ and ICT4D services require to be locally tailored, such a fund could partner with local funds, more aware of the local requirements for success, to bring together its global sector expertise and the local expertise of a local fund. Finally, the fund would couple its financial backing with technical assistance, possibly drawn from a pool of volunteers from technology companies.

b) As governments or international development agencies, work on setting up a regional platform (or take part in one if it already exists)

This can both spark cross-border innovation and allow easier replication of successful projects across borders. There is an analogy to make with mobile phones, whose recent and rapid spread was notably enabled by the creation of global industry standards, facilitating international replication, and the removal of the luxury tax on handsets, improving affordability. In ICT4D, a regional or global platform could similarly harmonize regulations across borders – allowing for a technical open platform to develop for ICT4D services – and develop regional ICT4D plans with incentives for private sector development, aiming at setting an ecosystem of businesses containing a diversity of models and sectors of intervention. A possible strategy is to support local incubators (such as Afrilabs),²¹ and establish ICT training institutions for existing and to-be social entrepreneurs. The World Bank is currently pushing for such coordination of e-development initiatives through its program eTransform Africa.²² Similarly, the EU has been stimulating an R&D oriented EU-Africa ICT cooperation with Africa.²³

Conclusion

Most of the cases we have studied are early success stories, with much yet to be written. As mobile penetration continues to increase in many markets, and as handset functionalities expand, more people will be enabled to play their potential in the global economy. Indeed, the challenge is not only to materialize the tremendous benefits that can be generated by bringing the existing success stories to those remaining billions who could benefit from them. It is also to bring those who still cannot (mainly due to low literacy and low purchasing power) to a level where they could access ICT and the services it enables. This is of paramount importance to prevent the further deepening of the gap between an ICT-capable part of the world and the rest.

We are aware that many of the applications, services and business models that will take ICT4D innovations to the next level remain to be created in the coming years. Still, the ICT4D case studies seen here provide exciting insights that point to many opportunities for scale and replication. To build on the success of current initiatives, and to invent new, more impactful business models for sustainability, stakeholders will need to partner and focus on multiplying an impact that so far still leaves most of the world out of reach of healthcare, education, financial services or agroservices.

We hope that this report, like ICT itself, will not be an end but part of the means to create more effective approaches to foster development.

²¹ Afrilabs is setting up several incubators ("labs") in Africa, and has its own ICT4D fund. The labs serve as an accessible platform for bringing together technologists, investors, tech companies and hackers in the area. See afrilabs.com

²² See www.infodev.org/en/Topic.33.html

²³ See <http://euroafrica-ict.org>



Executive summaries of the case studies

BBC Janala
www.bbcjanala.com



Providing interactive English language lessons to Bangladeshis in accessible format over multiple platforms – mobile, web, and television – at affordable rates

Executive Summary:

- **Organization:** BBC Janala is part of the English in Action project, delivered by the BBC World Service Trust. The aim of the English in Action project, funded by the UK Department for International Development is to provide comprehensive English language learning opportunities to Bangladeshis across multiple economic and social strata via a partially-subsidized fee-for-service model.
- **Project:** Launched in November 2009, the service works across mass media platforms – TV, online, mobile, and newspaper – all run in tandem with new lessons each week, to provide comprehensive English language lessons to Bangladeshis. It has received over 10 million calls from 3.8 million people with over 170,000 mobile internet lesson downloads since launch, in addition to 20 million television and newspaper users.
- **Innovation:** Design of service underwent intensive user testing, branding, and has saturated mass media outlets so that these English lessons are accessible to a majority of the population. The use of multiple ICT and other media platforms for stand-alone lessons designed with hundreds of hours of testing (input and feedback regarding Bengali language, accents, dialect, and culturally specific references), innovatively removes barriers to entry for low-income and low-education users. Leveraging and coordinating multiple platforms (mobile, web, newspaper, and television) has led to widespread use of the services and high market saturation in a short period of time.
- **Sustainability:** BBC Janala has proved BoP willingness to pay for English classes via mobile phones, reaching millions of clients at a cost of less than 4\$ per person. Yet it does not currently collect any revenues of its own, all revenues accruing to mobile operators. The project will continue to be funded by the UK's Department for International Development until 2017 during which time the BBC WST will explore whether parts of the project – including mobile – can become independently commercially viable. Its reach in 15 months has been impressive; true scale and impact will require interest in the service to last once the novelty aspect of it has disappeared.

Improving small African farmers bargaining power by bringing them relevant market data on their mobile phone

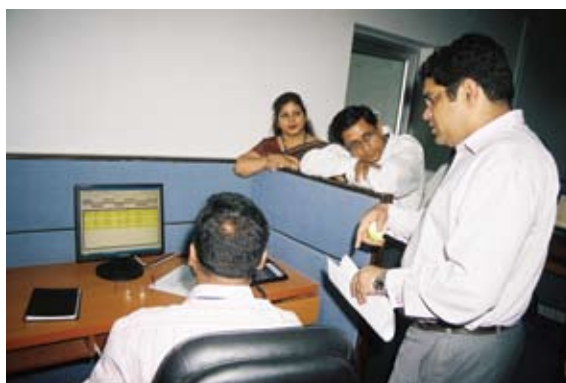
Executive Summary:

- **Organization:** Busylab is a Ghanaian private technology firm set up in 2005. Its original goal was to attract local software engineers and to create local solutions for local problems. One project was TradeNet, a mobile-enabled web trade platform for agri products, started in 2006 with the encouragement of the FAO and with FoodNet in Uganda as the first client (market research of value added agro-products). In 2009, Tradenet was renamed Esoko.
- **Project:** Esoko has been in R&D mode between the years of 2008 and 2010. It developed into an innovative and complex mobile platform for farmers and agro-traders, businesses, coops and associations, NGOs and projects, governments and research organizations. The technology enables these groups to push and pull real-time market information in a user-friendly and affordable way. Among other things, the technology allows small farmers to know the current wholesale and retail commodities prices, thus able to negotiate better prices and improve the timing of getting their crops to market. Since 2008, Esoko has been developing its offer with partner-clients, mostly public projects, collecting prices on over 60 commodities in 500 markets across 15 African countries along the way. Esoko has recently created a franchise model. In this model, the franchisee is a stand-alone organization providing resources to deploy the Esoko offer in a given country, while Esoko in Accra provides overall marketing and IT support. Franchisees pay a fee and a share of their revenues. Ghana, Nigeria and Mozambique franchises were launched in 2011.
- **Innovation:** Esoko is the first organization to offer parties across the African agricultural value chain the ability to push or pull sector-specific data in a simple way via mobile phones or computers. Most existing projects offer only one specific service. Esoko has been innovative in creating an attractive, user-friendly application, and by doing so in a totally local, market-driven manner. Customer-needs research and product design have been the focus of Esoko from inception. Led by Mark Davies, a successful and seasoned web-entrepreneur, and well funded from inception, Esoko has been unique in its capacity to establish the kind of local software design team -over 20 full time local software engineers- needed to successfully deliver a product sustainably matching African users' evolving expectations. Esoko also contributes to the development of the local ICT industry by employing and training local IT undergrads and graduates and showcasing a viable African technology firm that could potentially expand beyond the African continent's markets.
- **Sustainability:** Though mainly focusing on pilot projects up until 2010, Esoko has already been working with well-regarded partners and profiled 26,000 individuals in 15 African countries through various public partner deployments. With a team of 60 at the Accra head office and 100 market scouts in Ghana and Nigeria, Esoko is now scaling up by means of its new franchise model. The \$2.5 m equity brought by the IFC and the Soros Economic Development Fund (SEDF) provides a strong financial basis to deliver on Esoko's growth ambitions—to establish Esoko franchises across Africa, in the end creating the first profitable market information system (MIS). However, sustainability of Esoko's new business model has yet to be proven.

Bringing medical services on the phone to Bangladesh

Executive Summary:

- **Organization:** HealthLine was started as a strategic collaboration between GrameenPhone (GP) and Telemedicine Reference Center Limited (TRCL). GP, established in 1997, is a leading private cellular operator with over 23.8m customers out of a total of 54m in Bangladesh (Feb 2010). TRCL is a private company specialized in health information technology, using integrated contact center and cloud computing to deliver healthcare services through Internet, mobile phones and wireless technologies since 1999.
- **Project:** Between its inception in 2006 and 2011, HealthLine was a low-cost 24-hour online medical center manned by licensed physicians and accessible via a 3-digit phone number to GP mobile subscribers for consultation and treatment advice. It reached more than 3.5m unique callers, receiving 5 to 10k calls per day. GP was in charge of infrastructure while TRCL managed day-to-day operations and content for services.
- **Innovation:** GP and TRCL were the first companies to provide low-cost expert healthcare information and advice through mobile phones in Bangladesh 24/7.
- **Sustainability:** The project, entirely market-based, has been successful in bringing basic medical information to rural communities while saving them time and resources. However, the real impact of the solution is difficult to evaluate. The service only provides advice and does not enhance physical access to healthcare or drugs. In addition, the quality of the online consultations depends largely on doctors, and the number of doctors available does not match the demand of the services in such a large population market like Bangladesh. Doctors are hard to retain in a call center, and thus churn is high, which is a challenge for scale up. Finally, although businesswise viable, the service has been discontinued from TRCL to GP from 25th April 2011, showing that working with aligned partners is indeed a requirement for sustainability of mobile health service programs.²⁴



HealthLine open day 2006 - GP employee discussing with TRCL Doctor concerning the service before offering the medical call center service in November 2006, TRCL kept the medical call center for 4 months during which period all GP employees used the service for quality and feedback purposes.



Healthline "Call 789"

HealthLine advertisement

²⁴ However other mobile healthcare services of TRCL are open to mobile users of all telecommunication operators through independent mobile and land phone channels approved by Bangladesh government, while GP continued delivering HealthLine services under its own and separate arrangement.

Real-time verification for drug authenticity over mobile phone in several African countries

Executive Summary:

- **Organization:** mPedigree is an African-based for-profit company spun out of a non-profit organization, which was founded by a Ghanaian social entrepreneur.
- **Project:** Launched in 2007, mPedigree works with mobile operators and pharmaceutical manufacturers to provide a mobile phone-based drug verification system for addressing the issue of the prevalence of counterfeit drugs in pharmacies at the point-of-sale, currently offered in Ghana, Kenya, and Nigeria.
- **Innovation:** The mPedigree service is free to users and allows the consumer to instantly verify whether a drug in a pharmacy is real or counterfeit by sending a unique identification code via simple SMS and getting an automated response in appropriate language. The service relies on various partners across the value-chain (both private and public actors) while remaining simple to roll-out to new customers and easy to access for the end-user.
- **Sustainability:** mPedigree is providing both health benefits to the consumer and broader tracking and data collection on counterfeit drugs, yet it only addresses this specific issue in the health care value chain which makes its direct health impact hard to measure. Within 3 years, mPedigree has forged partnerships with HP, the main mobile network providers in the countries in which it operates (24 telecommunications operators as at February 2011) – with plans to have partnerships with over 32 telecommunications operators by the end of 2011, has been endorsed by multiple governments, has multiple pharmaceutical manufacturing clients, and is on target to both break even and reach profitability in 2011. It has quickly spread its service in 3 countries, with activities underway to launch in Cameroon, Tanzania, Uganda and Bangladesh. Although the service to end-users is free, a focused marketing effort is required on the part of mPedigree to continue to grow its user-base, a priority for the organization in 2011.



User checking his medicine authenticity in Nigeria



SMS ensuring drug is genuine in Ghana

Keeping Indian farmers updated through agro-SMS

Note: At time of writing, RML informed us that they were going through strategic change to ensure scale-up in India at the soonest before taking their model to other parts of the world. Thus the information below may not accurately describe the new version of RML business model at time of publication. We would like to thank RML for accepting to publish it in spite of possible differences with their newer business model and apologize to the reader for potentially outdated information.

Executive Summary:

- **Organization:** Thomson Reuters is a large multinational company focusing on intelligent information for businesses and professionals. With headquarters in New York and major operations in London and Eagan, Minnesota, Thomson Reuters employs more than 50,000 people in 93 countries.
- **Project:** Started in 2007, Reuters Market Light (RML) provides individual farmers with customized, localized and personalized weather forecasts, local crop prices, agricultural news and relevant information (e.g. information influencing market prices) – in the form of SMS messages sent to their mobile phones in their local language. Till 2010 (date of commercial launch), several hundred thousand people across 13 states in India have subscribed to RML and 300 to 2,500 subscriptions are added every day.
- **Innovation:** *Product Innovation:* RML Direct is the first ever scratch card allowing to benefit from such an information service via all handset models and on all service operators. *Process innovation:* Sourcing process for news and market data from the widely fragmented market has been continually improved (notably in terms of setting up a proper database for such a massive amount of information), as well as the service delivered, through customers' needs assessments. *Business model innovation:* RML has built its entire operating model from scratch – from content sourcing through to delivery and customer support. This industry sector – personalized professional information services for farmers – did not exist until RML launched the business in 2007.
- **Sustainability:** RML has proven that it is able to deliver high quality information service to farmers in rural areas at a reasonable cost for end-users. The service has improved their profitability through knowledge of market prices, mitigated weather-related risks through forecasts and improved knowledge of crop cultivation and disease control, while generating revenues for RML in 2008 onwards. Scale and replicability depend on the ability of RML to extend its distribution network, management of high quality content and sustained funding.



RML Info available in local language in Nagpur, Maharashtra



Sarang Pimple, undergrad student in IT and market reporter gathering market prices for RML, at Nagpur "mandi" (market)

Using ICT to provide key web-based services and distribute FMCGs in rural India

Executive Summary:

- **Organization:** Drishtee is a for profit organization founded by Shailesh Thakur, Nitin Gachhayat and Satyan Mishra to enable the emergence of a rural network of franchises and partnerships capable of providing access to basic services and goods to the rural population of India. Drishtee is based out of Uttar Pradesh.
- **Project:** Drishtee provides access to web-based services through a network of 2,000 village kiosks. In addition, Drishtee distributes Fast Moving Consumer Goods (FMCGs) to 13,000 rural shops, the Drishtee Rural Retail Points (DRRPs), which reach out to 10 to 15 million villagers of 8 principal Districts of Assam, Bihar and Uttar Pradesh.
- **Innovation:** Drishtee's uniqueness lies in its original use of ICT to foster development in remote communities by combining access to ICT-based services and the physical availability of essential goods. In each District, Drishtee identifies "milkman routes" that connect 20 to 25 villages. It then establishes "rural routes" with kiosks at the nodes that support the development of an ecosystem of micro-enterprises in the route villages, for both services and products: while the kiosks cater to the needs of villagers through web-based services, the DRRPs are physical product retail points. District hubs also host some ICT-enabled services, essential to the physical supply-chain management of the network (such as call centers and remote inventory management services).
- **Sustainability:** Drishtee's experience demonstrated that its model could break even in 5 years (2001-2006). Considering that over its initial years of existence, Drishtee's model has evolved considerably from a pure kiosks model to the current hybrid model (kiosks/supply chain), it is possible that replication of the more accomplished current model reaches breakeven point in less than 4 years. Scalability is embedded in Drishtee's model via the "milkman route" approach. Once a route is made economically viable, additional services that have a positive social impact can efficiently leverage the established infrastructure. Launch of additional routes becomes then the main lever for scaling-up. Replicability appears more complex, as success factors such as demographic density, or availability of rural skilled workforce may not exist equally in all contexts.



Drishtee retail point



Training center



Improving agro sourcing and bringing services to small farmers' in India through farmer-run internet kiosks

Executive Summary:

- **Organization:** ITC Ltd. is one of India's leading private companies active in various sectors (cigarettes, hotels, paperboards, packaging, agri-business, etc.), with a market capitalization of US\$ 14bn and a turnover of more than US\$ 5bn in 2010; its Agri Business Division (ABD) is a US\$150m company focused on commodity sourcing and rural marketing services.
- **Project:** eChoupal was initiated by the ABD in 2000 to provide agricultural services for farmers, aiming to lower transaction costs and improve the quality of agro-commodity sourcing. The main eChoupal services comprise a transparent eChoupal purchasing channel, provision of agricultural information and agricultural product supply. 6,500 kiosks operated by Sanchalaks (trusted farmer families) benefit 4 million farmers in more than 30,000 Indian rural villages. Since 2007 the Sanchalaks act as social intermediaries in the community providing additional services both for farmers, such as insurance, and for ITC, such as retailers' recruitment and aggregation for last mile delivery of products by ITC and its partners.
- **Innovation:** *Technology:* State of the art when first installed, the hardware and web platform accessible to Sanchalaks have been continuously upgraded to execute new services. *Business model:* Disintermediation of transactions between farmers and ITC has been eChoupal's primary innovation and the key to its success; since 2007, eChoupal leverages its network of Sanchalaks to offer other services, not necessarily based on technology, previously not accessible in rural areas (e.g. financial services).
- **Sustainability:** eChoupal has shown that it can bring comprehensive services to rural people in an economically sustainable way for both Sanchalaks, who run the kiosk, and individual farmers, who benefit from the services, while bringing down the cost of sourcing commodities for ITC. A specific success story is that sub-optimal practices in the farmers' produce sales have changed following ITC disclosure of a guaranteed daily fixed price coupled with cash purchase, forcing Mandis (local markets) to increase transparency and eliminate the delay in farmers' payments. The rapid spread of mobile phone makes the information service of eChoupal less necessary in that farmers can now access market information through other channels. However, the social capital and trust that eChoupal has built in rural areas should allow it to develop additional services on the same network – ITC plans to further enhance “last-mile distribution” using technology for real time information and more efficient management of logistics. Scaling further will then require updating the technology. Replication depends on the willingness of other large companies to serve rural populations and on their capacity to rally network partners to offer a range of services through shared infrastructure.



Improving small farmers' lives through franchised agro-kiosks in India

Executive Summary:

- **Organization:** Headquartered in Bhubaneswar, Orissa, eKutir is a Rural Social Enterprise registered under Indian Companies Act with branch offices and experiment stations in Bangalore and Chennai, and rural extension service centres in 3 districts of Orissa. eKutir is developing its Farmers Project with Grameen-Intel Social Business.
- **Project:** eKutir has been operating in the state of Orissa since 2008, accumulating knowledge of the local ecosystem and agriculture factors. In September 2009, it launched the eAgro initiative – franchised, local e-kiosks (“hubs”), supporting local farmers (5km radius) with expert and individualized agro advice and trade information. In 14 months, they successfully established 12 kiosks serving 6,000 farmers.
- **Innovation:** eKutir delivers all of the services needed by farmers at one focal point – the kiosk – run by a local entrepreneur in an “individual farmer-centric” model, leveraging different technologies (internet-connected computer, camera etc). The franchise mechanism for the entrepreneur and the configuration of farmers into collectives (Farmer Interest Groups) ensures that all are committed and involved. Farmers are involved in the design process of the business model so that the program continually meets their needs. They also benefit from a loyalty system that returns a portion of the fees to farmers in the form of free services.
- **Sustainability:** eKutir's holistic approach addresses several farmers' issues at once. The venture is economically sustainable both at the farmer- (income improvement of 60% to 400%) and the franchisee- level with each service provided paying for itself within a few months. eKutir franchises its business model and e-services rather than the hardware, which entrepreneurs are encouraged to buy themselves. This makes the capex required to set up a new kiosk minimal at the central level and thus limits capital requirements for scale-up. Yet, to scale up at this stage, eKutir requires more capital to invest in additional operational capacity, for building up a portfolio of services, and for increased delivery capability.



eKutir's hub



Technical training to entrepreneur and village operator

“Quality cardiac healthcare for the masses” stemming from India, through integrated use of ICT

Executive Summary:

- **Organization:** The Narayana Hrudayalaya Group (NH) is a private group of hospitals with 25 hospitals and two main campuses (“Health Cities”) in India. The main Health City is in Bangalore, Karnataka, including notably the Narayana Hrudayalaya Heart Hospital, the second largest cardiac hospital in the world; the second one is in Kolkata, West Bengal. The Group is connected digitally to nearly 800 places in Asia and Africa for remote diagnosis and training.
- **Project:** In India, only 90k cardiac surgeries are performed out of 2.4 million needed yearly, mainly due to prohibitively high costs for majority of population. NH was founded in 2001 by Dr. Devi Shetty with the objective of providing cardiac care to a diverse patient base at affordable prices. NH Health City in Bangalore has 3,200 beds (1,000 for cardiac care, with 95% success rate i.e. one of the highest in the world, and including the largest cardiac surgery service for children in the world with 10-12 children operated per day). Taken together the NH system has 5,000 beds in India. In its main Heart Hospital in Bangalore alone, it has provided remote cardiac care to over 300,000 patients, heart outpatient service to over 300,000 people, 70,000 heart cath procedures and 47,000 heart surgeries in close to 10 years of operations.
- **Innovation:** *Technology:* NH has created off-patent trans-telephonic ElectroCardiogram (ECG), which sends ECG directly from remote health centers to NH experts through phone lines (in use in 328 locations as of 2011). It also makes extensive use of videoconferencing, both one-to-one for remote consultations, and one-to-many for continuous medical education to partner health institutions globally (439 telemedicine locations as of 2011). *Business model:* 1) In 2003 Dr. Shetty initiated low-cost insurance scheme Yeshasvini, now implemented by the whole state of Karnataka, and replicated it under different forms in other states: low-income farmers pay low premiums and are given access to same high-quality facilities (such as those of NH) as patients paying full-price. Providing remote expert screening avoids useless transportation and multi-consultation costs, and hospital management through tailor made software raises the efficiency of the hospital, leading to a decrease in cost of care that makes this insurance scheme viable. 2) NH sells its patented ECG technology at cost and gives free training on its use and free remote diagnosis via ECG to all who deliver free consultations with it.
- **Sustainability:** In 10 years NH has become the second largest cardiology hospital in the world. Thanks to the use of ICT at all levels and an innovative focus on minimizing administrative roles for operational staff, it serves more patients at lower costs than other cardiac institutes while high volume also allows bargaining for low prices of supplies. The innovative insurance scheme initiated by Dr. Shetty, and donor funding covering 20% of the hospitals’ budget, makes it sustainable for the poorest to receive world class treatment (for cardiac care, 50% of patients do not pay full rate, including 30% covered by their insurance), leading to an average cost of cardiac surgery at \$2,300, (a tenth of the US cost), and for NH to enjoy a 7.7% profit after taxes, higher than the average of US hospitals. Expansion is already taking place through telemedicine centers (NH has the largest telemedicine network in the world) in several countries of Asia and Africa. Building “medical cities” throughout India, NH aims at 30,000 beds in 2015, which would make it the largest private-hospital group in India.



Narayana Hrudayalaya Cardiac Care Hospital
in Bangalore Health City



Videoconference room for remote medical training
and remote diagnosis

Improving information flows and knowledge dissemination for 'last mile' small-holder farmers in Uganda

Executive Summary:

- **Organization:** Grameen Foundation (GF), an American private foundation, was founded in 1997 with the objectives to enable the poor, especially the poorest, to help themselves out of poverty. To fulfill this mission it promotes access to finance and information to empower the communities it serves.
- **Project:** Community Knowledge Worker (CKW) program was initiated in 2008 in Uganda to improve the livelihoods of small-holder farmers through a dynamic access to up-to-date agriculture information delivered via mobile phones, via village-base info-mediaries, thus creating income generation opportunity for the info-mediary and the farmers they serve.
- **Innovation:** This project overcomes: 1) the cost issue of owning a mobile phone, 2) trust in information flows, 3) language, 4) literacy, 5) training for complex use cases and 6) 'off-grid' communications, which can prevent farmers from using information services, by setting up local agents (CKWs). They provide a dynamic, two-way information channel, supported by innovative technology such as cloud computing and allowing various types of information to flow (voice, imaging, video, GPS) via smart-phones, which is 30 times cheaper than SMS for similar information size sent. These field agents enable both Grameen Foundation and its partner agricultural organizations to respond quickly to changing needs, to send data from the field to experts and feed recommendations from experts back to farmers to complete the information loop.
- **Sustainability:** Since inception in 2009, CKW has provided agricultural advice to over 19,000 farmers, with a retention rate of 35%, and has provided information to the World Food Program on its farmer beneficiaries. On the financial side, the project is still relying on donor/grant money (only 10% of expenditures in 2010 covered by fees for survey conducted by CKWs and GF services, with a target of over 50% in 3 year's time) but aims at becoming fully self-financed. Scaling will require key partnerships, notably to find more market outcomes for outbound information (survey), to initiate a market for cloud-based information services and to develop a skilled and trusted network of CKWs.



CKW at work



Advertisement for CKW

Financing African entrepreneurs through the web

Executive Summary:

- **Organization:** MYC4 is a for-profit joint venture between entrepreneur Tim Vang and Mads Kjaer from Kjaer Group (Danish provider of transport solutions worldwide for humanitarian organizations). Based in Copenhagen, Denmark, with a regional office in Nairobi, Kenya, its mission is to fight poverty.
- **Project:** MYC4 directly connects individuals, institutional investors, etc. with African entrepreneurs who need capital to develop their business. Today, 18,000 investors from 108 countries have invested almost €13 million in 6,400 businesses in 7 African countries through MYC4.
- **Innovation:** MYC4 is the first for-profit P2P micro-lending organization offering interest to lenders and designed to be self-financed; this business model and MYC4 emphasis on transparency, make it a unique proposition. As stated on their website: "It's not charity. It's business, and it's helping."
- **Sustainability:** MYC4 has become an important player in the microfinance sector. It is 10 times smaller than its non-profit competitor Kiva (\$170 million invested) launched 2 years earlier, but is fully market-based. Designed to become self-financing thanks to a 6% commission on each loan as well as a 2% closing fee, MYC4 has adjusted its operating model and partner selection process to scale up more rapidly and break even in 2013-2014.



We all need gas and diesel, and this woman in Nairobi bought this filling station with money funneled through MYC4



Chicken farming is on the rise in Kenya. This woman is expanding her chicken farm outside Nairobi thanks to a loan from MYC4

Mobile Surveys and Targeted Offers in Emerging Markets

Executive Summary:

- **Organization:** txteagle is a multi-million dollar technology start-up co-founded by two Americans with a passion for IT and development.
- **Project:** Launched in 2009, txteagle now has partnerships with 220 cell phone operators in over 80 countries, reaching 2.1 billion people who can perform simple tasks such as gathering local information via mobile phone while being compensated by airtime or money.
- **Innovation:** The key innovation of txteagle's system is the ability to credit mobile phone subscribers with small denominations of airtime in exchange for completing surveys or purchasing products. Technology-wise, the assets of txteagle are 1) being based exclusively in the cloud, with no need for physical presence in countries where it partners with operators, 2) compensation engines within the back-end billing systems of mobile operator partners, 3) Universal Cellular Messaging Protocol (UCMP) to enable interactive messaging to any of the 2.1 billion potential subscribers.
- **Sustainability:** Within two years, txteagle has managed to build a robust technology platform potentially reaching and empowering the next billion consumers. The business model brings economic benefits to all stakeholders, i.e. to respondents in the form of free airtime, to clients saving money compared to conducting traditional surveys for information, and to mobile operators increasing airtime use. In early May 2011, txteagle raised \$8.5 million in Series A round from a consortium of investors led by Spark Capital. Fine-tuning its revenue structure, finding large-scale clients and opening its platform to smaller data requests through a web interface will be the next decisive steps for txteagle to prove it can reach the scale and impact it is now well placed to achieve.



Farmer participating in crowdsourcing in Kenya

Branchless banking to provide financial inclusion for all through local agents connected to internet in Brazil

Executive Summary:

- **Organization:** Bradesco is the largest private bank in Brazil. It has created a joint venture with Brazilian postal offices to create Banco Postal, to offer branchless banking in virtually every municipality of the country through small post offices. In parallel, it has created Bradesco Expresso.
- **Project:** Launched in 2002, Bradesco operates two branchless banking networks, one via Banco Postal based on its extended postal office network, and the other through its Bradesco Expresso brand, based on individually recruited retail outlets, all using computers to register financial transactions. In total, it had 24.2k agents (10/2009) serving over 5m customers. 27% of its customers were previously unbanked.
- **Innovation:** Bradesco created a low cost banking network reaching virtually every municipality in the country, based on equipping retail agents with software and card readers to handle basic banking services.
- **Sustainability:** The solution is reaching nearly all Brazilians who now have banking services close to their home, often avoiding hours of traveling to bank branches. While not necessarily “profitable”, these networks save a lot of cost to banks by leveraging existing computer infrastructure, giving these extended networks economic sense. For agents, profitability is low but banking services increase shop traffic and thus overall revenues. Though the system is simple (using existing infrastructure and technology) which has allowed it to scale rapidly, there are challenges to replicate it in other countries: regulation, availability of adequate agent networks, existing internet connectivity...



Bradesco agent of the Bradesco Expresso network, in Eloisa d'Autazes supermarket, with a point of terminal and barcode reader for financial transactions

Integrated payment solution company for the unbanked and under-banked in India

Executive Summary:

- **Organization:** Financial Inclusion Network & Operations Ltd. is a private financial services company offering technology and services to promote payment solutions for the unbanked and under-banked sector.
- **Project:** FINO was founded in July 2006, with the objective of building technologies to enable financial institutions to serve the unbanked, and to service the technology requirements of entities engaged in servicing the BoP. In February 2011 it is serving 28 million customers, providing them with access to pension and government scheme benefits, savings accounts, loans, remittance capacity, and health and disability insurance.
- **Innovation:** FINO has proved that biometric smart cards and technology solutions are able to overcome entry barriers for the banking and payment solution sector. Through the FINO Fintech Foundation, a non-profit arm, FINO now aims at tackling financial illiteracy by training its business correspondents who in turn train customers. Further it plans to set up a financial education academy.
- **Sustainability:** FINO systems are highly flexible, customizable, scalable, ready for deployment, and are effectively bringing banking services to previously unbanked people (around 28 million since inception). The growth rate of 30,000 customers per day in the last 4 years demonstrates FINO's ability to reach and retain BoP customers, while being fully profitable. With 700 million people in the unbanked sector in India, the market for local expansion is large. The next decisive step for FINO is to expand into the international market.



*FINO agent conducting financial transactions
for their clients in Rajasthan*



*FINO agent checking fingerprint of a customer
for financial transaction in Rajasthan*

SAFARICOM M-PESA

<http://www.safaricom.co.ke/index.php?id=745>



Providing financial services through mobile phones in Kenya

Executive Summary:

- **Organization:** Safaricom is the leading provider of converged communication solutions in Kenya.
- **Project:** M-PESA is an innovative mobile transfer solution that enables customers to transfer money, without needing a bank account, to other M-PESA or non-M-PESA users via a simple interface. It was launched early 2007 and has reached more than 13 million customers within 3 years.
- **Innovation:** Though not the first of its kind, M-PESA is an innovative mobile money service in that its business model – simplifying the end-user experience – allowed for viral spread. Key “innovative” features contributing to its success include the absence of registration fees, deposit fees, and minimum balances, the use of a simple user interface, and the technical possibility to send money to anyone, even non-registered M-PESA users, with a tariff structure that encourages non-registered users to register as well. Today M-PESA is innovating through the provision of new services (such as linking to bank accounts) that most mobile financial service providers are not yet offering.
- **Sustainability:** M-PESA is a flagship example of a mobile service used at large scale. It has been used by 38% of the Kenya population with indirect impact reaching 75% of the population. It relies on a simple to use application from an end-user perspective combined with the branding, market penetration (80% market share) and pre-existing reach (network of 23,000 M-PESA agents) of Safaricom. In FY2010, M-PESA generated \$94 million in revenue for Safaricom, amounting to 9% of total revenues for the company. While it solves an urgent social problem and seems to be financially sustainable, very specific conditions made the Kenya introduction a success while other replications have yet to be successful.



M-PESA advertisement

Acronyms

AFD	French Development Agency
ARPU	Average Revenue per User
BDT	Bangladeshi Taka
BoP	Base of the Pyramid
BPO	Business Process Outsourcing
CAPEX	Capital Expenditure
CDI	Center for Digital Inclusion
CEO	Chief Executive Officer
CGAP	Consultative Group to Assist the Poor
CKW	Community Knowledge Workers
CSO	Citizen Sector Organization (non-governmental, non-for-profit)
CSR	Corporate Social Responsibility
ECG	Electro Cardiogram
EHP	Electronic HealthPoint
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FI	Financial Institution
FMCG	Fast Moving Consumer Goods
GDP	Growth Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GSMA	Groupe Speciale Mobile Association
ICT	Information and Communication Technologies
ICT4A	Information and Communication Technologies for Agriculture
ICT4D	Information and Communication Technologies for Development
ICT4E	Information and Communication Technologies for Education
ICT4H	Information and Communication Technologies for Health
IFC	International Finance Corporation
INR	Indian Rupee
IT	Information Technologies
IVR	Interactive Voice Response
m-banking	Mobile banking
MERIT	Mass Employment Through Rural IT
MFI	Micro Finance Institution
MILLEE	Mobile and Immersive Learning for Literacy in Emerging Economies
MIS	Market Information System or Management Information System
MNC	Multi National Corporation
MNO	Mobile Network Operator
MSME	Micro Small and Medium Enterprises
NAFDAC	National Agency for Food and Drug Administration and Control of Nigeria
NGO	Non-Governmental Organization
NHH	Narayana Hrudayalaya Hospital
OECD	Organization for Economic Co-operation and Development
OPEX	Operational Expenditure
P2P	Peer-to-Peer or Person-to-Person
PPCO	Pocket Public Calling Office
PPP	Purchasing Power Parity
R&D	Research and Development
RML	Reuters Market Light
SEWA	Self-Employed Women Corporation
SIM	Subscriber Identity Module
SME	Small and Medium Enterprises
SMS	Short Message Service
TRCL	Telemedicine Reference Center Limited
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VPO	Village Phone Operator
WHO	World Health Organization

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Agence Francaise de Developpement (AFD) - Proparco



AFD is a bi-lateral public development finance institution that has worked to fight poverty, support economic growth and promote and protect global public goods in developing and emerging countries and the French Overseas Provinces, for 70 years.

AFD executes the French government's development aid policies, in such diverse sectors as schooling, maternal healthcare, help for farmers and small-business owners, clean water supply, infrastructure construction, and fighting climate change, among other concerns.

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Through offices in more than fifty countries, AFD provides financing and support for development work initiated by nation-states, local governments, public- and private-sector enterprises, and nongovernmental organizations. AFD proposes a wide range of tools²⁵ to respond to the specific needs of its aid beneficiaries: grants, budgetary aid, subsidized or market-rate loans, guarantees, equity and/or capacity-building technical assistance.

Ericsson



Ericsson is the world's leading provider of technology and services to telecom operators.

Ericsson is the leader in 2G, 3G and 4G mobile technologies, and provides support for networks with over 2 billion subscribers and has the leading position in managed services. The company's portfolio comprises mobile and fixed network infrastructure, telecom services, software, broadband and multimedia solutions for operators, enterprises and the media industry. The Sony Ericsson and ST-Ericsson joint ventures provide consumers with feature-rich personal mobile devices.

France Telecom-Orange



France Telecom-Orange is one of the world's leading telecommunications operators with 170,000 employees worldwide, including 102,000 employees in France, and sales of 11.2 billion euros in the first quarter 2011.

Present in 35 countries, the Group had a customer base of 215.9 million customers as of 31 March 2011, including 141.6 million customers under the Orange brand, the Group's single brand for internet, television and mobile services in the majority of countries where the company operates. As of 31 March 2011, the Group had 156.7 million mobile customers and 13.9 million broadband internet (ADSL, fibre) customers worldwide. Orange is one of the main European operators for mobile and broadband internet services and, under the brand Orange Business Services, is one of the world leaders in providing telecommunication services to multinational companies.

²⁵ Each beneficiary and partner receives tailored financing and services. In 2010, AFD approved more than €6.8 billion for financing aid activities in developing and emerging countries, including €957 million for the French Overseas Provinces. Within the group activity, PROPARCO committed €940 M. The group funds will help 13 million children go to school, improve drinking water access for 33 million people and provide €428 million in microloans benefiting more than 700,000 people. Energy efficiency projects financed by the AFD group in 2010 will save nearly 5 million tons of carbon dioxide emissions annually.

AFD creates strong working relations with various international aid actors, particularly bilateral donors, the European Commission, United Nations agencies, multilateral development banks (World Bank, African Development Bank, Asian Development Bank), local governments, foundations, private-sector companies, and nongovernmental organizations. These partnerships promote good practices and joint actions, such as project co-funding, for greater aid coherence and effectiveness.

Through research and other forms of knowledge creation, AFD also leverages its intellectual assets and those of its partners, in order to weigh in on international debates. PROPARCO has issued several publications about the Telecom sector in its magazine *Private Sector and Development*, and particularly one addressing the problematic "What are the economic and social impacts of the mobile phone sector in developing countries?".

Acting as a responsible company, Orange is committed to contribute to the social and economic development where it operates. This is done in three ways: by deploying infrastructure and basic communications services, by offering value added services to meet key needs such as education, health or rural development, and by supporting the development of the local innovation and entrepreneurial ecosystems through university partnerships, participation in the creation of local incubators or funding of awards granted to innovative projects. The need for improvement in the identification and qualification of innovative solutions for the BOP, that are sustainable and scalable led Orange to suggest to Hystra to launch this project.

For more information (on the internet and on your mobile): www.orange.com, www.orangebusiness.com, www.orange-innovation.tv

ICCO



ICCO is the Dutch interchurch organization for international cooperation. ICCO's mission is to work towards a world in which people live in dignity and prosperity, a world where poverty and injustice are no longer present. We give financial support and advice to local organizations and networks across the globe that are committed to connect poor people to value chains and empower excluded groups in societies. Rather than supporting individual projects, ICCO believes in changing systems through a programmatic approach. ICCO works in 41 countries in Africa, Asia and Latin America in partnerships with civil society organizations, including development organizations, cooperatives, churches and businesses.

In the area of ICT for Development we participate in the Connect for Change (C4C) Alliance with four other Dutch development organizations, lead by IICD in The Hague. ICCO manages the program "ICT for Economic Development" of C4C, with the objective to improve the income and employment opportunities of small-scale farmers and entrepreneurs through better access to markets and financial services and improved productivity by using ICT.

TNO

TNO also contributed to this report – see next section on authors.

Authors and contributors

The project took place over the course of 8 months in 2010-2011, led by a team of Hystra consultants and involving Hystra network partners, Ashoka experts and entrepreneurs, TNO contributors, and Andrew Mack Global (AMG) experts.



Hystra works with business and social sector pioneers to design and implement hybrid strategies, innovative business approaches that are profitable, scalable and eradicate social and environmental problems; and combine the insights and resources of business and citizen sectors.

Hystra itself is a hybrid organization, a for profit tool for social change. Hystra consists of a core team of full time consultants and of a growing network of partners already present in 12 countries. For more information, visit www.hystra.com.



ASHOKA FULL ECONOMIC CITIZENSHIP

Ashoka Innovators for the Public: founded in 1980, Ashoka is the world's working community of more than 3,000 leading social entrepreneurs. It champions the most important new social change ideas and supports the entrepreneurs behind them by helping them get started, grow, succeed, and collaborate. As Ashoka expands its capacity to integrate and connect social and business entrepreneurs around the world, it builds an entrepreneurial infrastructure comprised of a series of global initiatives that supports the fast-growing needs of the citizen sector. Ashoka's vision is to create change today, for an everyone a changemaker society to become the reality of tomorrow. For more information, visit www.ashoka.org.



TNO, the Dutch Organization for Applied Scientific Research, connects people and knowledge to create innovations that boost the sustainable competitive strength of industry and well-being of society. As an independent non-for-profit research organization, innovation with purpose is what TNO stands for. TNO transfers its innovative knowledge and experience into emerging and developing countries via its corporate program dedicated to "Innovation for Development". The vision of this program is a world where social challenges in developing and emerging economies are solved by local people deploying sustainable innovative solutions. TNO contributes with its core competences: high-level expertise in technical and social innovations, connecting people and managing system innovations and transitions in various sectors (e.g., Energy, ICT, Food and Health). Through a co-creation process involving partners and stakeholders TNO launches market-based and community-based innovations to ensure a sustainable socioeconomic impact for low-income groups. For more information visit: www.tno.nl/I4D.



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