STRATEGIC FRAMEWORK FOR SOCIAL AND ECONOMIC VIABILITY IN INCLUSIVE INNOVATION PROJECTS

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ABSTRACT

Entrepreneurs with the ambition to structurally cater the Base of the Pyramid (BoP) market face two challenges. On the one hand, they need to 'go local' to ensure local ownership. On the other hand, they have to work towards a scalable business model. This paper presents a framework which combines the innovation phases with the challenges of local ownership (social viability) and scalability (economic viability). The framework is addressed to entrepreneurs developing products or services for end-consumers at the Base of the Pyramid and illustrated with cases from the VOICES project.

Keywords **–** Viability, Scalability, Ownership, Framework, BoP, VOICES

1. INTRODUCTION

Given the characteristics of the Base of the Pyramid (BoP), entrepreneurs with the ambition to structurally cater this market face different challenges. There is often a gap between the design of a service and the 'actuality' in which it is used [1]. This "design-actuality gap" model seeks to explain the high rates of failure of information systems in developing countries. It describes the match or mismatch between information system designs and local user actuality.

Up until recently, this gap was used to stress the need for local activity and ownership. BoP markets have to be understood at the ground level— from the bottom up—if a venture is to succeed in those marketplaces. Local ownership is needed as "firms will do better and learn more if they tailor their operations to the unique conditions of developing markets" and "firms will be better off if they exploit the differences between countries rather than utilizing a more homogenous strategy" [2] [3]. In fact, it is more than a focal point; given the unstructured character of this market place, it is the absolute basis [3] [4] [5].

More recently, the attention for local ownership has been accompanied by a call for more attention to scalability. To serve the poor sustainably, it is often necessary to target a broader segment [6]. Many enterprises achieved economic viability by adopting an expanded view of low-income consumers or business associates, engaging those both at the Base of the Pyramid, but also those in adjacent income groups. By doing so, the organizations providing the service can buffer the volatility and risks inherent in dealing with the very poor.

Current methodologies either address the focus on scalability and business model [2] [7] [8] or the focus on local ownership through co-creation and technology adoption [4] [5] [9]. We suggest a methodology that includes both of these aspects throughout the development of the innovation.

2. OBJECTIVES

In this paper we propose a framework to organize the strategic process that leads to the development of viable services for the BoP. The basis for this framework is the two challenges described in the previous section; the requirement of local ownership, i.e. the local consumer market as well as the local business ecosystem, and the requirement of scalability, i.e. reaching critical mass.

The framework should enable one to choose which requirements to focus on in the different phases of the development process. This framework enables the translation of these insights into a way to organize the decision making process. This is helpful in understanding when the different methodologies, strategies and advice mentioned in literature are relevant in making design and business decisions.

3. THE VOICES PROJECT

The VOICES project is a research programme which is partially funded by the European Commission under the 7th Framework Programme, is. The goal of the VOICES project is to facilitate diffusion and exploitation of European ICT research results by helping to unleash the potential of mobile ICT services for developing economies and resolving existing content and access barriers for such services. The success of VOICES depends on economic and social viability of the VOICE based services developed, to create community ownership of the services and to ensure a long lasting impact.

This paper includes two cases from the VOICES project.

4. METHODOLOGY

Research was carried out in two phases.

In the first phase we propose the strategic framework based on the theory as mentioned in the introduction.

In the second phase the theoretical framework is validated by applying it to two the case studies (m-Health and m-Agro pilots) of the VOICES project. We based our work on the deliverables from these pilots, on visits to the pilots on the ground in both Mali and Senegal in October and November 2011 as well as from interviews with stakeholders throughout the project period.

5. THE INNOVATION PROCESS

In very general terms, an innovation process starts with an idea and then proceeds in several iterative phases towards realization. Some authors have specifically focussed on innovation processes for a BoP context. A well-known overarching methodology for cyclical development in BoP is described in "The Base of the Pyramid Protocol: Toward Next Generation BoP Strategy" [5]. This protocol seeks to close gaps between design and actuality (in the words of Heeks [1]) by promoting a "Business Co-Venturing" strategy, as opposed to the currently dominant "Selling to the Poor" approach, in which the BoP only enters at the last stage, when well-intentioned, but mismatching products and services are introduced to the market [6]. Central principles in the Protocol are "mutual value" and "co-creation." Mutual value entails that each stage of the process creates value for all partners. The "co-" in "co-creation" describes the need for companies to work in equal partnership with BoP communities to create a sustainable business. The protocol identifies a number of phases that are not limited to conceptualization, design and experimental projects, but also include business expansion.

This protocol thus has a focus on the successful set up of a field trial as part of a successful development cycle, leaving the characteristics of 'the field' in which this trial is embedded out of scope. In other development cycles the focus is more on these field characteristics, for example on the need to create 'a level playing field' with 'western' partners as well as local partners. In the innovation cycle of the BoP innovation centre for example, 'Preparing the ground' and 'learning from each other' precede steps like co-creation and market introduction [10].

Though the development cycle concepts explained above have different set-up, three generic phases can be distracted, namely the design phase, the pilot phase and the commercialization phase.

- Phase 1: design: The design phase involves activities in requirements, appearance, usability, and of course design
- Phase 2: pilot: a pilot can have different focus: technical, user or commercial focus. For each of the focus a different group of people is selected
- Phase 3: commercialize: typically involves activities on strategies how to diffuse the product, distribution channels and marketing campaigns.

6. HYPOTHESIS: A STRATEGIC FRAMEWORK

By combining the development phases with the focus on either local ownership (social viability) or scalability (economic viability) a strategic framework is proposed. The approach proposed here can be captured and illustrated with a matrix that is formed by the binominal variable 'social and economic viability' and the trinomial variable 'phase' (Figure 1).

The difference with the frameworks discussed earlier is that we make an explicit distinction between the *strategic focus* and the *phases*: the strategic focus is either achieving local ownership or achieving scale; the phase refers to the level of maturity of the service: in the design or redesign phase (infancy), in the piloting phase (adolescence; market adaptation) or a fully commercial service (mature, growth and consolidation).

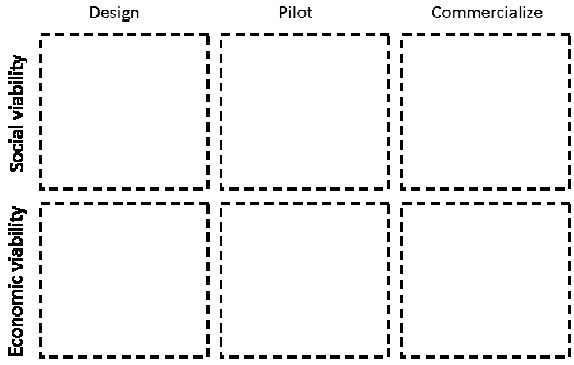

Figure 1 Strategic Framework

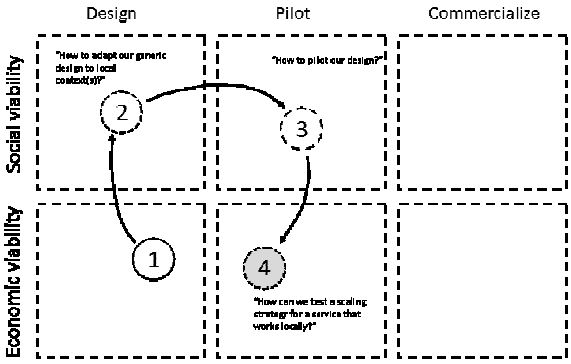

Figure 2 Example route 1

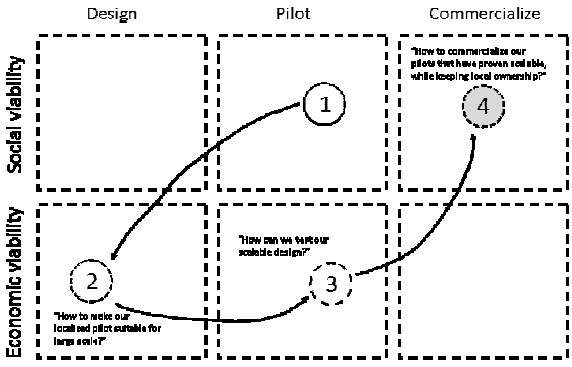

Figure 3 Example route 2

By making use of the proposed approach, the methodology becomes suitable for both mature products entering new markets as well as for new products entering an existing market.

A multinational, for example, might have a proven ICT service which has reached large scale in the Western world and which the company would like to introduce in a BoP context. In **Error! Reference source not found.**, an example route is drawn of the situation. In the case of the proven ICT service, the starting point would be a 100% scaled product (#1). The challenge for this company would be to find solutions to create local ownership in the BoP in this phase (#2) and how to design a pilot in this context (#3). Consequently, the company might want to implement the pilot in various regions to test a certain scaling strategy that works locally (#4).

In the case of a local entrepreneur, the route may look different (**Error! Reference source not found.**). The local entrepreneur may for example have developed a successful pilot of a mobile based VOICE service in a local context (#1). Consequently the local entrepreneur may wish to develop a scalable service. Therefore he or she will have to go back to the original design of the service and adapt it to make it suitable (e.g. in speed, infrastructure) for expansion, while keeping in mind local ownership (#2). Consequently he or she will have to test the service on the scalability (#3). Lastly, the entrepreneur will have to work on the commercialization phase (#4).

As may be concluded from the examples, throughout the development phases, strategic focus should be taken into consideration. For instance, although the piloting is usually geared towards achieving local ownership, it is critical that in the design and especially in the commercialization phase, local ownership is an integral part of the design and decision making process. The other way round, it is equally critical to include (learning what to) scale as a requirement in the piloting phase in order to reach economic viability. Further, it is important to note that the phases are not linear but iterative; fundamentally it is a process of continuous improvement that has no starting point or end point.

7. APPLYING THE FRAMEWORK TO THE PILOTS

To see the value of the strategic framework in practice, we have applied it to the m-Health and m-Agro pilot of the VOICES project. These are both pilots 'under development' and not finished services yet. We will first give a high-level introduction to the pilot and then apply the framework to see how this facilitates the pilot with valuable information for next steps.

7.1 THE M-HEALTH PILOT

In the m-Health pilot, lab technicians use a voice service to input epidemiological data. This allows for more efficient registration of disease outbreaks. The voice system is also used to provide lab technicians with up-to-date information about diseases and has a quiz function as well, aimed to improve knowledge of lab technicians.

The m-Health pilot focuses on collecting data and increasing technical knowledge. The value propositions can be seen as focused on increasing efficiency of services that are already offered to the end users (those end users being patients). The m-Health pilot focuses on laboratory staff as users. Those users work for the RNL (National Network for Laboraties Senegal), so they can be seen as internal and professional users. These users are not users of the voice services that truly fall in the BoP category (although the m-Health service obviously increases the efficiency of health services that are provided to BoP patients, but those patients will not use these voice services).

7.1.1 Design

During the design phase, specific focus was on local ownership. The main goal of this phase was to develop uses cases for new applications for health services in cooperation with the main stakeholders of the project. Furthermore field visits were done to meet end-users and all stakeholders in order to understand their work, expectations and needs. There was frequent contact between the partners with regard to the technical requirements of the applications and joint development was an important part of the design phase. No specific focus was put on the scaling elements.

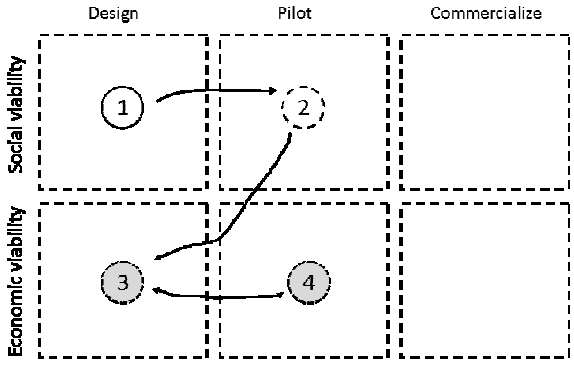

Figure 4 m-Health pilot

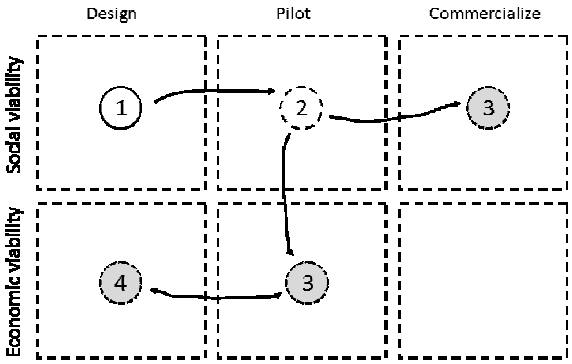

Figure 5 m-Agro pilot

7.1.2 Pilot

In the m-Health case, the pilot phase has just started at the moment of writing. During this phase, the partners of the project especially focus on technical and usability testing. Extensive testing and validation currently takes place**.** Furthermore, there is regular contact with the Health Ministry, a key stakeholder in the project, with the aim of strategic alignment. During the pilot phase, the service is provided for free; only the monthly internet cost are due by the local partner. Is it important to note that the partners of the project are only used in the pilot phase and will step out of the project afterwards. These strategic focus points indicate that the main focus remains on the elements related to local ownership.

7.1.3 Commercialize

When we look at the next phase of the development process for the m-Health service we can say that the m-Health project is somewhat different from 'regular' start-to-finish service design because the commercialization phase is currently out of scope. This means that the focus of the pilot will not be on the business goal of scale, and this is explicitly left to the commercialization phase. This is partly mitigated by the inclusion of the intended commercial party as an advisor in the pilot. However, because the pilot uses a platform for application development which is specifically intended for small scale, open source applications, the service will have to be redesigned for scale after the pilot. Although some results from development in the pilot may be re-used, the service will need

additional work so it can be used on a commercial scale. This is represented in steps in Figure 4.

7.2 THE M-AGRO PILOT

In the m-Agro pilot, producers of local non-timber forest products use SMS to input information about the availability and price of local non-timber forest products. This is aggregated by voice technology into a spoken communiqué that is broadcasted on local radio. The goal of this voice service is to automate the creation of those communiqués, so that local supply and demand can be connected. In the future, the voice service will be expanded so that local producers can use the voice service to directly create a communiqué (without the NGO actively acting as aggregator). A meeting-scheduling service using the same method is also planned.

The m-Agro pilot focuses on increasing the efficiency to create and handle communiqués. The value propositions can be seen as focused on increasing efficiency of services that are already offered to the end users. For the m-Agro pilot, the users are diverse. In the initial VOICES intervention in the existing Radio Marché system the voice service affects only the NGO staff and radio broadcasters. The NGO staff can be seen as internal users, while the radio broadcasters are external users. In a later stage, the voice service will be expanded to also include producers of agricultural products, who can be seen as external end-users. Both NGO staff and radio broadcasters can be seen as professional users, while the producers of agricultural products are treated more as customers rather than professionals. The producers of agricultural products are the users of the voice services that fall in the BoP category.

7.2.1 Design

During the design phase, the main focus of the project was to develop use cases and requirements with regard to the service. The uses cases and requirements are based on extensive field study in interaction with stakeholders and users, using elicitation techniques including local workshops and interviews. Active participation of the end-users, radio stations ensured the local needs became clear. The design phase was done in close cooperation with a local NGO to ensure strategic alignment. Overall, a lot of attention was given to local adoption elements, but less focus on scalability.

7.2.2 Pilot

In the m-Agro case, the demarcation between design and pilot phase is less obvious, because the VOICES project does an intervention in the already operational Radio Marché service (which in itself can also be seen as a service that has not matured yet to the commercialization stage). Specific focus is on the testing and validation of the Radio Marché System. Many issues that are taken for granted in a "usual setting", are uncertain and have to be tested and validated in this rural African context. Many technical difficulties have been needed to overcome to now be able to offer the voice based service to users, however, little attention has been placed on the piloting of 'scaling elements'.

7.2.3 Commercialize

For the m-Agro pilot, plans are to continue developing on the same platform. The roadmap towards either local commercialization or towards achieving scale is not yet crystallized, also because of some delays related to the Mali political situation. Focusing more on scaling might require additional design work. The current status is visualized in Figure 5.

7.3 Comparing the pilots

When comparing the two pilots it becomes apparent that both services can be seen as services that are delivered to service providers (RNL and Sahel Eco), rather than to end users. In the m-Agro pilot, the pilot service delivers the platform to Sahel Eco. Content is manually inputted by Sahel Eco, while in a later stage, content will be put in by the end-users themselves. In the m-Health pilot, the pilot service delivers both platform and content to RNL, although in a later stage content providers might be found to supply relevant content (quizzes, epidemiological information).

In both cases, the revenue model is currently underdeveloped. In the m-Health pilot, costs of the service are expected to be covered by the Ministry of Health. In the m-Agro pilot, no revenues from end-users (producers of local products) are foreseen, so the cost of the service is to be bared by the NGO. The revenue model of both services can be seen as cost-saving, rather than value-creating, which matches with the focus on internal users rather than external customers.

8. CONCLUSION

Entrepreneurs with the ambition to structurally cater the BoP market face two challenges throughout the product development process. On the one hand, they need to focus on local ownership. On the other hand, working towards a viable and sustainable business model calls for strategies of scaling. In this paper we have proposed a framework which combines the innovation phases with the challenges of local ownership and scalability. We have illustrated the framework with two case studies that currently in the pilot phase. The case studies give rise to two main observations on the fit between the approach developed in this document and the pilots in the VOICES project.

Firstly, the pilots serve as a living lab as part of a project with a fixed timeframe. As most of the project partners will not be part of the commercialization phase it is likely to be challenging to take scaling elements into consideration. Secondly, the VOICE services developed are aimed at increasing efficiency internally at a service provider that is offering services to the BoP and thereby the direct beneficiaries of the VOICE services are in fact professional, intercompany users. Considerations on local ownership are therefore very different than when services are offered directly to the BoP consumers.

These two observations lead to preliminary conclusions on the applicability of the framework. We expect the framework to be most relevant for:

1. Services to be supplied by a service provider directly to its BoP customers.
2. Users that are end-consumers of the service.
3. Users that fit the BoP definition in terms of income, but also in terms of e.g. education or knowledge.
4. Services being offered by commercially driven service providers.

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