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SOCIAL VENTURES AS INNOVATORS AT THE BASE OF THE PYRAMID

ABSTRACT

This paper investigates the unaddressed potential of social ventures to implement social and technological innovations. The innovative activities of social ventures serving populations at the base of the pyramid (BOP) provide relevant evidence. Resource based theory and the concept of business ecosystems provided constructs to be operationalized through case evidence, while case studies helped integrate and adapt these theories to illuminate social entrepreneurship. The framework provides a basis for comparing two different social ventures creating value at the BOP: a technology-based social venture and another undertaking health delivery. These ventures enabled user interaction and feedback and enlisted public-private partnerships. The cases show how social ventures can develop innovative business models that combine internal resources with external resources from their ecosystem in order to build shared value. The conceptual framework can be used to identify key features of other cases of entrepreneurial value creation in conditions of poverty.

Key words: social entrepreneurship, shared value, innovation, business models

INTRODUCTION

An emerging stream of research examines new organizations that aim at achieving social impact (Phills et al., 2008, Seelos and Mair, 2005). The focus of this paper is on social ventures using innovative business models to address global challenges of poverty. Incentives to offer valued goods and services usually arise through market exchange. For the very poor who lack purchasing power, there is chronic under provision of services. Approximately 1.5 billion people live at the base of the income pyramid on less than \$1.25 per day caught in poverty traps. The development literature has documented attempts by government, development professionals and private sector multinationals to remedy these conditions (Webb et al., 2010, London and Hart, 2004). However, grassroots entrepreneurial efforts have received relatively little attention in the research literature. This paper investigates the unaddressed potential of social ventures to implement social and technological innovation. We show that the business models of two social ventures enabled them to sustain the generation of social value by connecting their internal resources with complementary resources from an ecosystem mobilized for innovation.

The first case study is of FrontlineSMS, a UK social venture that provides free software to enable low-cost means of mass communication. Its platform technology allows a community of grassroots non-governmental organizations (NGOs), international agencies and ordinary people to communicate at a distance by mobile telephony without Internet access. The second study is of an entrepreneurial NGO using a social franchising model to deliver healthcare. Operation ASHA (“OpASHA”), is working in partnership with the Indian Ministry of Health and Family Welfare to deliver tuberculosis treatment to the poorest patients in urban slums, achieving high rates of patient compliance and cure.

Using these two exemplars to clarify concepts and constructs that have wider generality, we examine the collaborative building of shared value by social entrepreneurs that enable delivery of innovations to populations at the base of the income pyramid.

Institutional scholars see opportunities for innovation as dependent on external market factors

and on social, political and institutional arrangements (Fligstein, 2001, North, 1990). In contrast, adherents of resource based theory see internal resource organization as the key to realizing business opportunities (Barney, 1991, Penrose, 1995, Wernerfelt, 1984). But few scholars have set these issues in the context of innovation by social entrepreneurs. How can social entrepreneurs enable shared value creation between multiple participants? Examining implementation strategies by social ventures helps to illuminate this research question. Social entrepreneurs, as a subset of all entrepreneurs (Dacin et al., 2010), can match supply and with both effective and latent demand in innovative ways to produce novel solutions (Drucker, 1985).

We propose that a social venture can develop a business model that links its internal resources with complementary resources in its environment in order to meet social needs. Theoretical grounding for the study lies in the resource based theory of the firm (Penrose 1995) and the concept of the innovation ecosystem (Adner 2006), adapted to the case of new social ventures. While theory points to relevant evidence, observations on the innovative business models of social ventures can inform resource-based and ecosystem theory. The ecosystem as we define it includes customers, suppliers, funders, providers of infrastructure, regulators and policy makers. The participants form a value web that adapts to change, supports innovation and can be viewed as an innovative ecosystem (Adner, 2006). The concept can be operationalized in terms of the transaction environment of the organization by identifying those with which the organization is in regular interaction.

We build on entrepreneurship studies that have researched how social entrepreneurs deliver missing services at the base of the pyramid (Mair and Marti, 2009). There has been increasing interest in how partnerships and alliances can make products and services available to the poor (Karamchandani et al., 2009, Webb et al., 2010). To this end a number of recent studies have focused on the role of public-private partnerships between powerful public actors and large multinational private-sector players. Evidence presented here indicates that social innovation at the grassroots level may enable such alliances to achieve their aims. The challenges facing entrepreneurial innovators include those of advancing their novel idea through the innovation process: from discovery to development and onto delivery of benefits accruing to the user (Hansen and Birkinshaw, 2007).

The paper is organized as follows. We begin with an overview of relevant literature on entrepreneurship and social value. We identify features of experience depicted in this literature that apply to social entrepreneurs serving base of pyramid communities. We use the case studies of FrontlineSMS and Operation ASHA to show how business models mobilize internal and external resources to build shared value. Our findings contribute to integrating theories of social entrepreneurship with mainstream theory on resource building, on business ecosystems and on the business models that bridge these domains.

LITERATURE REVIEW

Social Entrepreneurship as a sub-set of Entrepreneurship

Problems of deep poverty are seldom viewed as amenable to entrepreneurial solutions. Yet history shows that entrepreneurial innovations have persistently met needs in new ways, transforming many industries (Nairn, 2002). In simplest terms, this is because entrepreneurs have detected opportunities and realized them by linking up supply and demand, resources and opportunities in new ways (Drucker, 1985, Penrose, 1995). Entrepreneurs excel at recognizing and exploiting opportunities (Shane and Venkataraman, 2000). Research on entrepreneurial innovation shows how entrepreneurs can craft new hybrid structures needed to realize opportunities (Chandler, 1977, Mair and Marti, 2009).

Scholars continue to debate the definition of social entrepreneurship. All enterprises encompass to some extent the social aims of employment, growth and prosperity for the community (Reynolds et al., 2005). Not-for-profit organisations traditionally depend on resources from donors and funders (Salamon, 1995), but the ideal for the social venture is a revenue generation stream that is sustainable, an idea aligned with current pro-business ideology (Dart, 2004). This does not mean that their activities must depend on market returns, though they may do so (Peredo and Chrisman, 2006, Seelos and Mair, 2005). A key role of the social entrepreneur is to identify under-utilized resources and find ways of putting them to use to satisfy unmet social needs (Leadbeater, 1997).

Social Value

While most work on value creation has a focus on the creation and capture of economic value, it is increasingly acknowledged that the social value created by innovation is of no less importance. Moreover the principle of shared value recognizes that social needs, not just consumer needs, can provide contexts for value creation (Porter and Kramer, 2011). Thus an expanded view of value creation has emerged in recent work. It is recognized that there are two key conditions for value creation: first, the monetary amount exchanged must exceed the producer's costs of creating the value and second, the value enjoyed by the consumer must be perceived to be greater than from the consumer's closest alternative (Lepak et al., 2007).

The literature suggests that a supportive ecosystem (Adner, 2006) may be critical to building shared value. Social entrepreneurs cannot realize opportunities on a solo basis. As in the concept of open innovation as a source of growth for established innovators (Chesbrough, 2003), social entrepreneurs often work to harness positive network effects and resources. To sustain a product offering, the organization itself needs to be sustained and to engage in a renewal cycle with its resource providers, continuously improving its resource base and reinvesting returns in further operations.

New organizations have to show that they can meet needs of other participants in order to establish legitimacy and take part in a business ecosystem. Working with established organizations in the ecosystem allows a new entrepreneurial organization to gain legitimacy (Suchman, 1995) and to reduce risks (Eisenhardt and Schoonhoven, 1996). Collaboration with customers and suppliers helps to define the new value proposition around a seed innovation (Helfat and Peteraf, 2003, Moore, 1993). Once admitted to an on-going ecosystem, the entrepreneurial innovator can mobilize and leverage resources of other partners and ultimately contribute back to the innovation ecosystem. In some cases entrepreneurs need to create a new ecosystem that will support their innovations (Garnsey and Leung 2008).

Entrepreneurs need to build what Penrose called a productive base or resource base from which to operate (Penrose, 1995). A unique set of resources supports their unique selling point (USP), that is, enables them to offer value that is otherwise unavailable. We propose that an innovative

business model is needed to link internal and external resources to enable the venture to realize the opportunities in creating social value. In this paper we seek to understand: 1) how social entrepreneurs build a productive resource base from which to create value at the base of the income pyramid; 2) the nature of an innovative ecosystem in which entrepreneurs enlist others in the creation of social value; and 3) what business models can be used to achieve these benefits. Our approach is interpretive rather than positivist; the primary aim is to improve understanding rather than to provide predictions. We propose a conceptual model that can be systematically operationalized on the basis of constructs and evidence beyond the cases we present (Lee, 1991).

An explanatory model of value creation at the base of the pyramid

Social Entrepreneurship and value creation

In this section we draw on a range of literature to build a simple model of value generation by social entrepreneurs at the base of the pyramid. Here we address the innovative activity of entrepreneurs who initiate social transformation (Dees, 2001, Prabhu, 1999) and through new combinations, create value for themselves and the ecosystem (Bull and Willard, 1993, Schumpeter, 1934). What features of entrepreneurship do social entrepreneurs share? Like other entrepreneurs they are characterized by the following features, recognized by contributors to the entrepreneurship literature (Dacin et al., 2010). They show alertness to opportunity, as emphasized by classic writers (Kirzner, 1979, Schumpeter, 1934). This enables them to recognize and exploit opportunities to provide new goods and services (Venkataraman, 1997). They draw upon prior knowledge and understanding (Shane, 2000) to recognize new opportunities and fill an unmet need. This involves providing a new value proposition and linking demand and supply in new ways (Drucker, 1985). Entrepreneurs act on the decision to exploit an identified opportunity (Shane and Venkataraman, 2000) often by harnessing strong personal networks (Ozgen and Baron, 2007, Singh, 2000). They obtain, build and organize resources in new ways to realize opportunities (Garnsey, 1998, Penrose, 1995).

We see explanatory potential in applying these accepted features of entrepreneurship to our unit of analysis, the social venture. To make sense of the complex evidence and multiple constructs

in the field of social entrepreneurship we aim to connect the notions of opportunity realization and value generation (1) to resource building in the social venture; and (2) as occurring in the context of the venture's ecosystem. We propose that innovative business models enable the realization of opportunities by combining internal resources with enabling complementary resources from participants in its innovation ecosystem.

Every organization explicitly or implicitly employs a business model to enable it to create value for users and customers. The firm's business model represents the way the firm is organized to create and capture value (Teece, 2010). Figure 1 illustrates a model of an organization's value generation cycle, showing the firm as an input-output system obtaining resources from its ecosystem and transforming them into outputs of value to customers and users. If their mode of operation is to be sustained, the entrepreneurial organization must appropriate and retain some of the shared value, both economic and social (Davis, 1973, Casson, 1982, Garnsey et al., 2006). Retained value may be distributed or reinvested to propel the next phase of the value generation cycle.

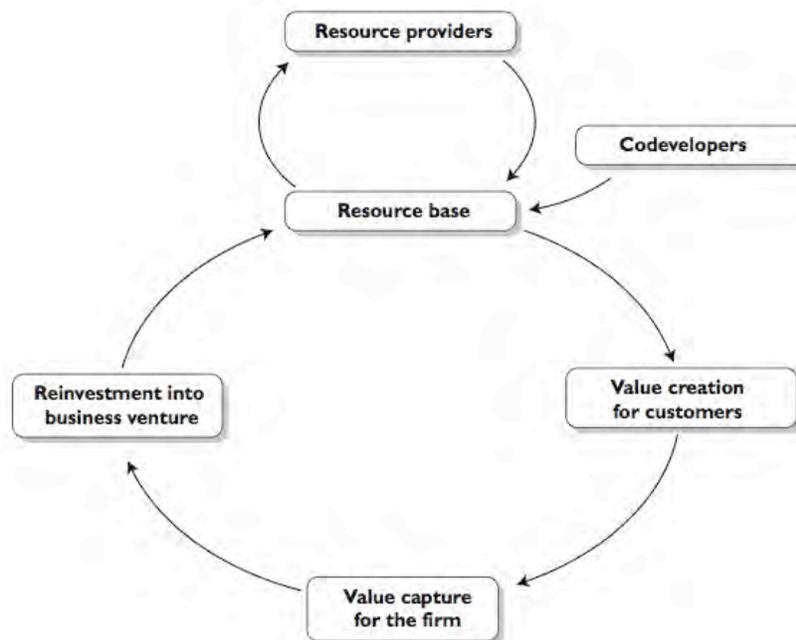


Figure 1: The value generation model. Source: adapted from (Müller and Garnsey, 2009)

An entrepreneurial start-up creates competitive advantage not only from its resource endowments, but from a unique assembly of resources that becomes its productive base (Brush et al., 2001, Penrose, 1995). Additional capabilities within the ecosystem can complement the firm's resource base; value-creating participants exert mutual influence to contribute to the ecosystem (Garnsey and Leong, 2008). Social entrepreneurs use their networks to seek necessary knowledge and resources and so form new combinations of intellectual and social capital (Nahapiet and Ghoshal, 1998, Singh, 2000). In this way they enlist input into their value generation cycle from partners and in return build shared value through their activities.

In most countries of the world, there exist poor populations whose concerns are with affordability, availability, and access to needed products and services (Prahalad, 2006). Multinational corporations have recognized these markets as a source of future growth (Prahalad and Hammond, 2002) and opportunity (London and Hart, 2004). But there have been few studies of grassroots ventures emanating from or directed to those at the base of the pyramid. It is argued that the poor should be encouraged to develop local capabilities and contribute to development (Karnani, 2007).

Building shared value in innovation ecosystems

In order to examine the role of the social entrepreneur in context, we position their value-creating activities within their wider innovation ecosystem (Adner, 2006). Innovation often involves the phased transformation of ideas into end products for the customer (Afuah, 2003, Hansen and Birkinshaw, 2007). Ventures in resource-constrained settings exploit opportunities to create and secure value by acquiring, leveraging, and building resources in new ways (Sirmon et al., 2007, Hugo and Garnsey, 2005). How conducive an environment is for entrepreneurial innovation depends on the nature of the ecosystem, but this can be altered by activities that build networks, trust and legitimacy (Ozgen and Baron, 2007, Singh, 2000).

Shared value is promoted by practices that enhance the competitiveness of a organization while improving economic and social conditions in the communities in which it operates (Porter and Kramer, 2011). As Porter points out, the concept of shared value blurs the line between for-profit

and non-profit/non-governmental organizations. On the one hand an organization with a social focus must also plan strategically for long-term operational viability, on the other, economic organisations need to achieve social objectives to gain legitimacy. It is argued that building shared value is not a redistribution of value between the participants of the ecosystem, but an expansion of the total pool of economic and social value. Participants in the ecosystem may contribute to the mission to which other participants in the value chain are committed.

Value created by each individual organization can be of benefit to other participants, a process formalized in partnerships. There is specialization among producers of knowledge in an innovation ecosystem and the entrepreneur often takes on the role of integrating these activities. Resource providers may support several participants in the innovation ecosystem who pursue a common mission. The organization develops a circle of direct and indirect partners making up its ecosystem network (Waddock et al., 2002).

RESEARCH FOCUS AND METHOD

Our research design involved iteration between theory and evidence. Key concepts pointed to relevant evidence while observations informed and enhanced the explanatory model used. Prior theory provided grounding for the evidence, but the evidence made it possible to adapt and extend this theory as a basis for analysis and comparison. To inform and advance our model, two in-depth case studies were conducted of sustainable social ventures. The case studies of FrontlineSMS and Operation ASHA draw on an inductive and interpretative tradition (Van Maanen, 1983) to fill gaps in existing theory (Siggelkow, 2007). A case study method is recommended to present and interpret rich evidence, and provide exemplars to inform understanding of a phenomenon that is still obscure (Eisenhardt, 1989). The aim of the conceptual model was to compare the organizations selected for observation on a systematic basis. “Multiple cases are a powerful means to create theory because they permit replication and extension among individual cases...this corroboration helps researchers to perceive patterns more easily and eliminate chance associations” (Eisenhardt, 1991 p.620). The conceptual framework of the paper operationalizes the concepts of value generation and the innovative ecosystem.

The objective of this paper is to explore how social ventures build an internal resource base and gain complementary resources in order to realize opportunities. The research findings showed that both social ventures developed an innovative business model to connect the internal and external resources required.

Teleconference interviews and in-person interviews were held with each organization in the time period Summer 2011 – Spring 2012. Additional data collected derives from field interviews, site visits and observations of organizational operations. In selecting interview subjects, founders were interviewed first to tap into their experience and ability to offer understanding of the case history (Greenhalgh and Taylor, 1997, Patton, 1990). To guard against retrospective bias and to facilitate triangulation, testimonies were checked against personal interviews with junior staff and compared with extensive archival sources and review of secondary data including company documents, grant proposals and press reports and third-party databases as recommended by (Jick, 1979). Interviews varied from thirty minutes to two hours. Key interviewees checked the written cases.

Collected testimonies were analyzed and coded in order to identify how the two entrepreneurial organizations combined resources and developed their business models. This allowed for an identification of primary themes around co-value creation at the base of the pyramid. An inductive approach was used to take into account the organization's value creation, using an interpretive approach to identify the nature of relations with other ecosystem participants (Garud et al., 2002).

ORGANIZATION-LEVEL EVIDENCE

Case study history of FrontlineSMS

Ken Banks founded kiwanja.net in 2003 with a mission to use mobile technology to tackle key global challenges in international development such as health, social and environmental concerns. He noticed early the potential of mobile phone technology to enable mass

communication and diffusion of knowledge. kiwanja.net operates several projects with FrontlineSMS being the largest. FrontlineSMS’s product offering is free open source software that can turn a laptop and mobile phone into a central communications hub without reliance on an Internet connection. The program enables users to send and receive text messages with groups of people through mobile phones and SMS messaging. Since its inception, users in 80+ countries have benefited from this open source software program. FrontlineSMS has a growing team of 15 staff members. Figure 2 depicts the organizational structure of FrontlineSMS, the most prominent project under kiwanja.net.

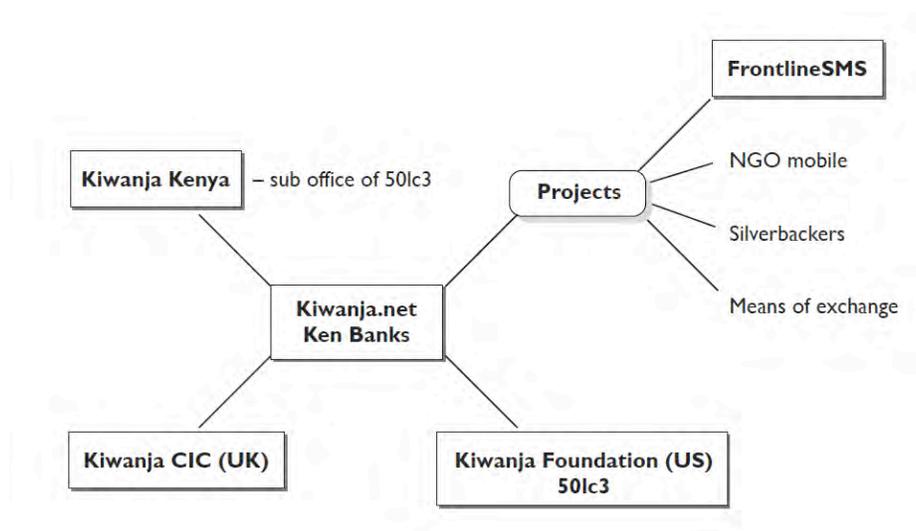


Figure 2: Kiwanja.net organizational structure including FrontlineSMS

Recognizing an opportunity and mobilizing resources

Banks was first inspired to think about the radical benefits of mobile technology when he was working on wildlife conservation efforts in rural South Africa. He noted that there was no Internet access in Kruger National Park and “to communicate, Park Rangers often had to jump into Land Rovers and go notify people village-to-village,” says Banks.

Having initially formed the idea of group SMS without the Internet, Banks quickly wrote a concept note and shared it with trusted colleagues who shared his concept note with two ex-Vodafone directors to verify interest and validity. The idea won recognition and two friends offered Banks with £5,000 each to make the prototype. Although not a trained computer

scientist, Banks had taught himself to program at a young age. In the summer of 2005, he spent 5 weeks coding in Visual Basic to make the first version of code, which he also tested himself. The code was released on a new FrontlineSMS website and a couple of weeks after release, the first user logged on from Zimbabwe.

During this time Banks was engaged in consulting during the day and would work on FrontlineSMS only at night and weekends, checking emails, fixing bugs and uploading new code. In 2006, Banks was awarded a Stanford University Reuters Digital Vision Fellowship as a collaboration fellow and moved to the United States for the first time. A breakthrough came in 2007 when a loose coalition of Nigerian NGOs used FrontlineSMS software to monitor their national elections. Through FrontlineSMS, voters could text complaints to a computer where the data was shared with international election monitoring bodies. This received popular press media coverage and helped diffuse the knowledge of FrontlineSMS software. Furthermore, in 2007, FrontlineSMS was used by Pakistan and Myanmar activists to trade information and stay connected with each other and the international community (Economist, 2007).

FrontlineSMS received a boost from the MacArthur Foundation and \$200,000 to further the work in 2007. This grant allowed Banks to rebuild the FrontlineSMS website and make significant upgrades to the software and most importantly, allow Banks to stay at Stanford for an additional year and work on his social venture full-time.

Banks returned to the UK in June 2008 by which time there were many more hundreds of users of FrontlineSMS. The competitive advantage of FrontlineSMS is its history in helping innovators use mobile technology to further their reach and impact while the users contribute valuable feedback and expertise back to the online community. In 2008, FrontlineSMS entered into its first official external partnership with another NGO called Ushahidi. Ushahidi is an emergency response newsgathering platform that shares information in remote areas via email and mobile phones. The opportunity to pair SMS software together with open-source mapping tools is realized through this partnership and adds great value to communication in remote geographies.

In January 2009, the Hewlett Foundation granted FrontlineSMS \$400,000 and allowed Banks to

hire FrontlineSMS's first employee, a lead software developer. Additional resources were mobilized in 2010 and 2011 from the Rockefeller Foundation, Open Society Institute and Omidyar Network respectively to scale up FrontlineSMS applications.

FrontlineSMS: An entrepreneurial innovator

FrontlineSMS is a social venture that operates on an open, information-sharing, community based culture. FrontlineSMS itself does not confine itself to any one particular sector, but focuses on lowering communication barriers for users wherever they may be. The business model depends on initiatives by users. The users facilitate direct social impact and share best practices and failures with the FrontlineSMS community in a dedicated community portal. An illustration of value generation by FrontlineSMS is show in the figure below.

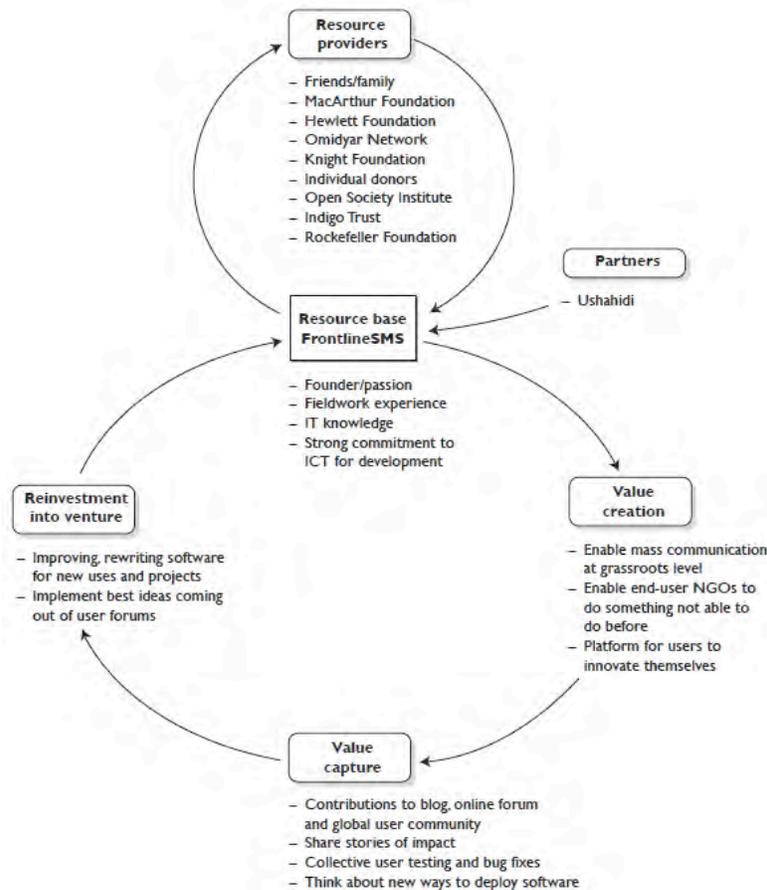


Figure 3: Value generation model applied to FrontlineSMS

The resource base of FrontlineSMS is indispensable to the social venture even though the capital value of these resources is not great. Monetary infrastructure and investment costs for software development are relatively low, but human resources are essential and are rare, inimitable resources for the social venture. In particular, the focus, commitment and passion of the staff contribute to value creation. The value created is not easily measured as it takes the form of a free public good. The product offerings of FrontlineSMS are downloadable gratis from its Internet website including user guides and support services. The diversity of NGO organizations and individuals who use FrontlineSMS software has precluded direct monitoring and evaluation of social impact; activities and objectives of users differ greatly. FrontlineSMS creates value by lowering barriers to mass communication and allowing customers to connect with their own end-users and innovate in their own local contexts. FrontlineSMS captures value for its social venture from the online community hosted by its website. The online forum allows the organization to harness valuable customer feedback, fix bugs and gives FrontlineSMS new ideas about areas of expansion. The value captured by FrontlineSMS is a proxy measure for the value created from its free software because it is an indication of usage. Customers provide FrontlineSMS with stories and contribute guest posts. “These stories really mean a lot to the funders”, Banks says, “The posts and comments are direct evidence of social impact, evidence that would otherwise be impossible for FrontlineSMS to collect.”

From the popularity of the topics on the online discussion forum, FrontlineSMS software developers can monitor which functions are most useful and what further functionality is needed. As a result of this value recovery and re-investment into FrontlineSMS, many funders have decided to support popular applications of the open software. FrontlineSMS launched FrontlineSMS:forms in 2009 that allows for low-cost real time data collection and aggregation for NGOs and fieldworkers (PRNewswire, 2009).

Accessing resources in the innovation ecosystem

FrontlineSMS currently runs on a donor-resourcing model where the business model is designed to attract resource input from grant funding. The resource providers also act as unofficial partners as they provide networks and expertise help. The social mission of FrontlineSMS and

its free offering aligns with the mission of their donors to fund great ideas that change the world.

Through the Stanford Reuters Digital Fellowship program, Banks was able to access additional resources in the US beyond those available in the UK. Figure 3 shows that for FrontlineSMS, primary funders sources are headquartered in the United States while their program is delivered primarily to developing countries. As a small, agile social venture, FrontlineSMS has the advantage of quickly responding to user needs and improving its product offering by writing and fixing software. Its product offering is delivered online and FrontlineSMS does not have to be located close to its customers.

FrontlineSMS can oversee and integrate all phases of the innovation process from idea/problem discovery, development of software solution through to delivery of improved product (posting new code for download on website). Banks rapidly built the initial prototype based on his novel idea. Subsequent development and diffusion in the FrontlineSMS ecosystem is a longer term, iterative process. FrontlineSMS delivers its product to users via its Internet download option. In turn, the multiple users within its network implement the software and report on potential bugs, benefits and challenges. Feedback is then harnessed to improve future versions of the product.

Banks is aware of the vulnerability of NGOs in that the donors must continually be persuaded to provide funds for offerings that do not benefit them directly. Only so long as the donors feel some obligation to benefit users and have confidence that FrontlineSMS is helping users, can the value generation cycle at FrontlineSMS be sustained. It is for this reason that Banks believes that FrontlineSMS “needs to create a for-profit arm at some point in order to be sustainable; it is being considered in our consolidation strategy.”

Case Study History of Operation ASHA

The second social venture studied is Operation ASHA (“asha” meaning “hope” in Hindi). The social venture was founded by Dr Shelly Batra and Mr. Sandeep Ahuja in 2006 with the mission to eliminate tuberculosis worldwide. Tuberculosis, an infectious disease caused by bacterium *M.tuberculosis* is estimated to cause 100 million lost workdays and \$300 million USD direct costs and \$3 billion USD indirect costs to the overall Indian economy (Rajeswari et al., 1999). It

is clear that failure to detect, treat and prevent TB greatly impedes national development.

Operation ASHA (“OpASHA”) is built on a foundation of partnering with the government to overcome the “last mile” delivery problem for patients. The founders say:

In India, the government provides TB medications for free to all diagnosed patients, TB specialist consultations are free, diagnostics are free, but delivery and compliance is hard.

Operation ASHA currently serves 4 million disadvantaged slum-dwellers in 1353 slums spread across 14 cities in India. Operation ASHA distributes TB drug treatment through the WHO-endorsed TB treatment guidelines of Directly Observed Treatment, Short-Course (DOTS)¹ strategy. Operation ASHA helps identify TB cases in hard to reach slum areas and in turn, treats TB patients directly.

Recognizing an opportunity and mobilizing resources

Treating tuberculosis is a difficult task, as patients are required to be on daily antibiotic therapy for six months. Even though treatment of tuberculosis is free in the Indian public health system, for migratory populations and hourly labourers, visiting a public health clinic daily is difficult. Due to the ties between health and poverty, the poor are especially vulnerable to further decline if faced with the high economic and social costs of illness or death of a family member (Bank, 2004).

OpASHA’s model increases access to tuberculosis treatment and lowers stigma of attending government clinics for the patients. OpASHA clinics are located in popular urban community intersections and provide access to counselling. A TB medicine rack is placed alongside shops, huts and temples of authorized Operation ASHA medicines Providers. These sites provide TB education and awareness as well as a convenient place for patients to take their medicine. These clinic Providers offer flexible operating hours so that patients do not have to miss work to obtain their medication.

¹ WHO Definition of DOTS TB Strategy http://www.wpro.who.int/sites/stb/dots_definition.htm - accessed January 12, 2011

OpASHA has created a social innovation model based on social franchising of individual clinics that maximizes the number of people helped with available resources. The franchising business model consists of a contractual relationship between a franchisee and a franchisor in which the franchisee agrees to produce a product or service in accordance with a strict protocol set out by the franchisor (Curran and Stanworth, 1983). Social franchising is an attempt to use franchising methods to achieve social, rather than financial objectives alone (Montagu, 2002). The success of the franchisee operational model is dependent on capturing economies of scale associated with large organizations while being flexible enough to adapt products and services locally (Kauffman and Eroglu, 1998).

In the case of Operation ASHA, growth is not measured in profits alone. There is no payment of franchising fees upstream to OpASHA as the franchisor. The establishment of individual clinics and remuneration paid to the staff are classified as community job creation and a positive externality alongside its core mission of TB elimination.

Operation ASHA opened its first clinic in New Delhi in 2006 with the Provider of the clinic being a former cured TB patient. Each Provider (eg. shop owner) is asked to devote one shelf in their high-traffic location to store OpASHA TB medicines and to tick off the patient's name every time medication is taken each day. Each urban slum clinic serves on average 60 patients with an approximate 10 minute walking time for each patient to the clinic. The Provider is paid on average 500 rupees a month (\$10-12 USD) and has low incentive to take on additional patients, which may decrease quality and attention of care. 2000 rupees per month is the average income for these chosen Providers and therefore the extra 500 rupees from Operation ASHA is a welcome contribution.

There are additional benefits for the OpASHA TB clinic Provider other than direct remuneration. For example, news spreads by word of mouth leading to increased foot traffic to the small business location, beneficial for small-shop owners or local private clinicians. In addition, as part of the TB medicines provision by the government of India, OpASHA clinics are stocked with over-the-counter medicines to treat TB drug side effects such as headache or nausea. These common medications are also provided free of charge to all persons within the urban slum who

request it from the Provider. The Providers gain respect in the communities they serve. Operation ASHA clinics provide specific care for TB patients but also provides an in-road for quality medicines in areas where access is usually scarce.

For every two Operation ASHA clinics and Providers, there is an assigned Operation ASHA Counsellor. The Counsellor's role is to identify, educate and treat each TB patient. Prior to commencing the medicines regimen, the Counsellor first visits the patient's home and explains to the patient the importance of TB treatment, and dangers of non-compliance. Medical advice and education are dispensed not only to the patient, but also to immediate family members to create a support network. The Counsellor is in full-time employment with Operation ASHA earning a base salary and incentive bonus for low defaults in their coverage area.

For every 8 Operation ASHA clinic centers combined with 4 Counsellors, there is 1 Program Manager who leads this replicable unit². Operation ASHA has enabled a scale-able model of TB delivery through the use of standardized training, facilitation and processes configured as a social franchise model (Prata et al., 2005). Operation ASHA's model provides high standard quality TB care per DOTS strategy, and also supports micro-entrepreneurs in its Providers and creates full-time gainful employment for its Counsellors and Program Managers.

Counsellors receive a monthly base salary from OpASHA headquarters and also receive a bonus for maintaining patient compliance with the TB medicines regimen. For example, when a patient misses a scheduled dosage appointment with the Provider clinic, the Provider informs the Counsellor and it is the Counsellors responsibility to locate the patient, re-educate the importance of compliance and ensure the patient gets back on track. Secondly, Counsellors are also compensated through a government of India scheme for active TB case-finding. Counsellors will observe, inquire and check upon suspected TB patients in the local community and if upon correct diagnoses after laboratory tests, Counsellors receive \$4 USD per active-case TB identification. Counsellors will thus monitor closely the work of the Providers and work diligently on patient tracking.

² Per discussion with Dr. Shelly Batra January, 2011

An Entrepreneurial Innovator: Operation ASHA

The micro-entrepreneur business model that Operation ASHA has built to create jobs and deliver effective healthcare for TB patients in urban slums generates value for both the end-patient and their community. The value generation and economic and social benefits shared by Operation ASHA is illustrated below.

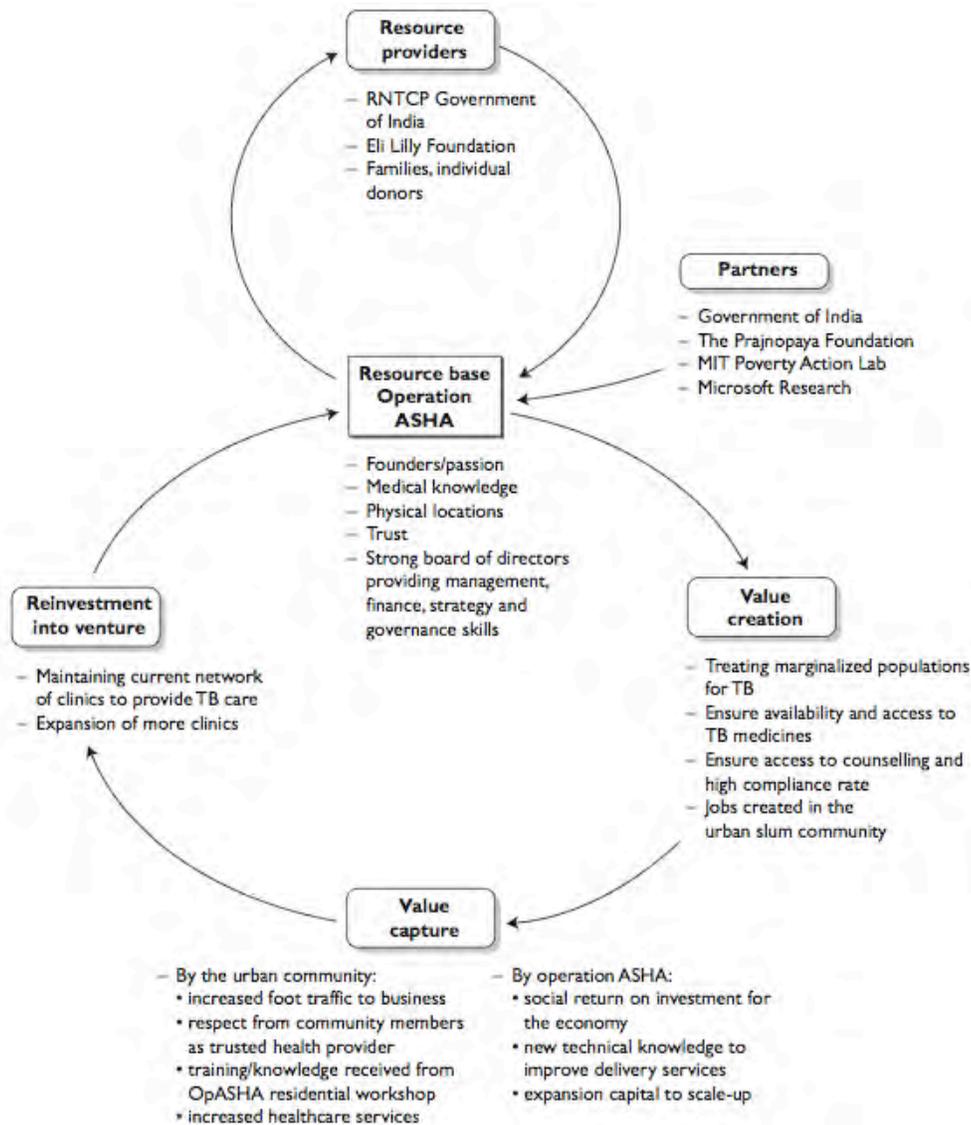


Figure 4: Value generation model applied to Operation ASHA

Value creation can be measured as collective value delivered to the customer, or patient. OpASHA has treated over 10,000 patients and a potential 120,000 infectious have been prevented, indirectly saving the Indian economy \$2.4 USD million on healthcare expenditures and benefiting millions of urban slum-dwellers. It is estimated that each cured individual will earn an additional Rs. 6,000 (\$120) per year after treatment. The urban slum community and operational partners share the economic and social value captured by successful treatment. Reinvestment into OpASHA means an ability to expand and maintain the franchisee network.

Accessing resources in the innovation ecosystem

OpASHA builds value through a network of partnerships within its innovation ecosystem. The partnerships support the social franchising business model and new technological innovation to allow its operations to deliver more value for less cost. The central partnership with the Indian Ministry of Health and Family Welfare provides free TB diagnosis and medicines for each OpASHA patient served (valued approximately \$375 USD per patient). In addition, the government awards \$25 per patient to any NGO working to provide DOTS treatment to TB patients. OpASHA clinics can each be financially sustainable through partnership with the public sector after two years. The government of India covers 80% of OpASHA's operating costs³. The remaining 20% of costs are cultivated through external resource providers including individual donors, corporations and large foundations. OpASHA receives non-financial technical support from its Board of Advisors including strategy, governance and financial advice.

OpASHA has partnered with Microsoft Research to use technology to monitor incentive pay. An eDOTS biometric system linked to an electronic medical records (EMR) database has been developed using open-source software tailored to OpASHA's requirements. Operation ASHA development manager and co-founder explained to us:

Monitoring the work of our Counsellors is very important as part of their pay is incentive-based. We need to effectively use technology to reduce monitoring costs of our individual clinics. Using an electronic database allows our field staff to cover more clinics and enable expansion.

The standard regimen requires patients to take their medicines under the direct supervision of a

³ Per discussion with Dr. Shelly Batra January, 2011

health worker. However, there is no reliable way to ensure that the observation took place at the Provider clinic. The eDOTS technology provides a solution to this problem by confirming a TB patient's presence by requiring patients to scan their fingerprint at a clinic's terminal machine. This creates instant evidence of a patient's attendance to a clinic and real-time database information for Operation ASHA at headquarters.



Figure 5: Operation ASHA Counsellor using the eDOTS electronic medical records system

The integration of innovative eDOTS technology helps OpASHA in multiple ways at different organizational levels. For the Counsellor, eDOTS allows for ease of follow-up with patients on the missed regimen schedule. For the Program Manager, an automatic, reliable and timely report is generated at request and helps with coordination of multiple sites. For OpASHA headquarters, synchronized operational data is received for accurate planning. The integration of baseline tracking and monitoring technology allows for better reliability, decreased monitoring costs and increased transparency.

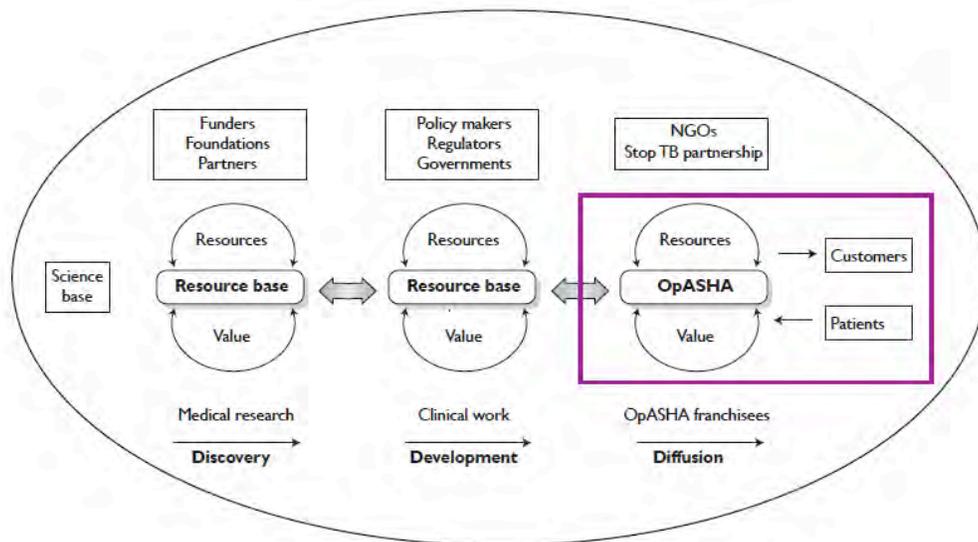


Figure 6: Operation ASHA occupies a delivery role in the innovation ecosystem for tuberculosis treatment and control

The value created in the delivery of healthcare diffuses to all other parts of the innovative ecosystem. OpASHA relies on innovations produced by other participants such as drug suppliers and diagnostic firms to help innovate for medical tools to fight TB. Armed with better tools, OpASHA can deliver future innovations easily through its established franchisee network.

Diffusion effects are also in evidence outside of India. At the international level, Operation ASHA founders have been elected onto the Board of the Stop TB Partnership, a global alliance of organizations working to combat TB. The Board position allows OpASHA to share its operational business model and disseminate best practices to other national TB programs.

ANALYSIS OF CASE STUDY EVIDENCE

The cases of FrontlineSMS and Operation ASHA demonstrate the factors that enable social ventures to innovate on a sustained basis in two contrasting sectors and locations. Both exemplars have successfully created value and achieved social impact by building business models that suit their operating contexts and cater for base of pyramid and grassroots needs (Table 1).

Table 1: Key factors compared for innovation by FrontlineSMS and Operation ASHA

	FrontlineSMS	Operation ASHA
Year Launched	2005	2006
Sector	Information, Communications, Technology for Development	Global Health
Intervention	Discovery, Development, Delivery	Healthcare Delivery
Size (as of employees) ¹	15	180
Business models	Open-source, user collaboration online	Social-franchising, public-private partnership
Resource base	Founders passion, IT knowledge, ICT products travel easily over geographic boundaries	Founders passion, medical knowledge, local context and trust in community
Resource providers	Foundations / Funders	Government of India / Funders
Value created	Enables mass communication at grassroots level, platform for users to innovate themselves	Treatment of TB for marginalized populations, jobs created in local community
Value captured	Iterative contributions to blog by users and online forum to share stories of impact and new ways to deploy software	Social return on investment for the economy, trust gained within community, best practices and technical knowledge gained
Current and future markets	Sector-specific programs: education, microfinance, legal, radio	India expansion and expansion abroad using same model
Time to market	5 weeks	8 months
Founder(s) characteristics	12 years field experience working on conservation and development projects in Africa, self-taught in IT, degree in social anthropology	10 year collaboration between experienced medical doctor who did annual pro-bono work in the slums and Former government of India official who helped fundraise of pro-bono supplies and medicines

¹As at 2012

Table 1 compares the innovation process in the two cases, showing how key concepts were informed by evidence. A business model is a design for an organization, both conceptual and

operational. It represents the way an organization creates value and retains enough of the value it generates to sustain its activities. Thus the value generation cycle shown for each case operationalized business models. The evidence shows that a key challenge to social ventures is to devise an innovative business model that can develop internal resources and mobilize complementary resources of other participants in their ecosystem.

FrontlineSMS chose an open-source model to help its users lower the costs of communication in the field. Users deploy FrontlineSMS software and conducts downstream field-testing. Product benefits and resilience reports are then fed back to the FrontlineSMS team through an online community that is transparent to all customers, further advancing user-led innovation. Operation ASHA chose a social-franchising business model to standardize delivery of medicines over extended treatment periods. Its product offering is also free and provided as an extension of India's public health policy. Building shared value that attracts sustained funding allows social ventures to sustain their operations and continue to create and capture value in the long-term (Figure 1). Social ventures interacted systematically with ecosystem participants in order to further their innovations in an open innovation model. The case comparison reveals a marked difference between innovators in that one was extending an already operational innovation ecosystem (OpASHA) to the other that created a new innovation ecosystem to diffuse a disruptive new technology (FrontlineSMS). This advances the conceptual framework, showing the need to differentiate between mobilization of participants in an existing innovation ecosystem (Adner, 2006) and construction of a new ecosystem for innovation.

Both FrontlineSMS and OpASHA demonstrate effective entrepreneurial solutions to accessing hard-to-reach customers at the base of the income pyramid. In facilitating communication and delivery of healthcare services, both operate in areas where there were no such services before. The benefits for the end user are much greater than the current alternatives (inadequate or expensive communications and healthcare), so meeting a key criterion for value creation, superiority to substitutes (Lepak et al 2007). To date, both social ventures are relatively small in terms of age and number of employees, but as they scale up, building additional evidence and credibility; their social impact will increase.

The resource providers (donors) of both social ventures recognize that the activities they are funding have positive social impact, both direct and indirect. There is a high level of trust by the donors in the integrity and dependability of the founders. As shown in Table 1, the founders possessed in-depth field knowledge prior to starting their social ventures. Idea formation and opportunity recognition initially derived from their urge to solve problems they faced in their daily operations. This enabled them to recognize real needs and develop solutions of value to other users. Banks was working on conservation projects in South Africa when he first thought of improving communication efficiency among park rangers and local communities. Dr Batra and Ahuja had been collaborating for over ten years on pro-bono medical services for Indian slum populations before starting Operation ASHA. The founders wanted to innovate in order to improve the way they could serve their communities. Each social venture piloted their idea independently of large resource providers, using the founders' own time and resources. However, neither social venture could have grown and scaled up their operations without the support of complementary strategic resource providers.

The value generation cycle of the two BOP social ventures lack the customer payment link that translates user benefits into direct economic returns as compared to commercial ventures. The social entrepreneurs must convince funders that their grants will be devoted towards shared goals and to support further social impact. OpASHA has the more secure source of funding of the two, backed by supportive government policy on achieving TB elimination. FrontlineSMS depends on international donors who have other commitments, but so long as the applications of its technology continually attract new donors, a commercial arm of the kind under consideration may not be needed. Direct beneficiaries can be measured by the number of users of FrontlineSMS software and the number of patients treated by OpASHA. However, the indirect benefits of improved communications for grassroots NGOs and of the reduction in cases of infectious disease cannot be easily measured, they are invaluable.

Building shared value in innovation ecosystems

The scarcity of economic resources at the base of the pyramid makes it difficult for supply and demand mechanisms to operate as they do in developed market structures. Each of these social ventures detected and responded to unexpressed but latent demand and developed business

models to provide needed services. In this section, we compare how their business models help build shared value within the innovative ecosystem.

FrontlineSMS uses mobile telephony to lower communication barriers for users at the base of the pyramid worldwide. It creates shared value together with the multiple users who use, test, report and feedback into software development. This is an ecosystem in which network effects operate as more users download FrontlineSMS software and implement it in their own projects, subsequently sharing their results, leading to more users taking up this offering. Users are further empowered to build their own systems of plug-ins around the core software (Banks, 2011). Uses include epidemiology tracking (Freifeld et al., 2010) and election monitoring (Economist, 2007). Current users ensure that the donor resource providers are able to see evidence of the social impact created by the software; this reassures them that their funds are being well spent to benefit users in need. FrontlineSMS enables additional social entrepreneurship; it offers technology innovation that give local people ownership of tools they need to accomplish their goals. By sharing the results of implementation, new knowledge created can be shared with other users and resource providers alike. This diffusion of knowledge can result in new users, new software functionality and further progress for FrontlineSMS's mission.

Operation ASHA builds shared value through its social-franchising business model with its primary resource provider, the Indian Ministry of Health and Family Welfare. The government enables OpASHA's business model by providing free medicines, diagnosis and bonuses for Counsellors when they maintain high compliance rates and actively find cases. In turn, through efforts working with marginalized populations, OpASHA enables better TB healthcare delivery, and decrease in overall TB disease burden. OpASHA's competitive advantage lies in reaching patients beyond the reach of the public health system. The founders' personal networks linking the medical and public policy arenas in India enabled them to tackle an epidemic and to provide a solution that could be scaled up. Drawing on their prior knowledge (Shane, 2000) and recognizing critical issues faced by the poor, they were able to attract inter-organizational partners to help them further their social mission and technology partners to support growth in key areas.

As shown in Figures 3 and 4 and summarized in Table 1, both case study firms operate in areas that attract little commercial interest and suffer from resource-scarcity. They have operationalized their business models by recruiting resource providers whose aims are aligned with their social missions. There are no realistic alternatives or substitutes available to their users who are unable to afford higher-end solutions. The resource providers recognize that the social ventures they are funding are filling gaps in the innovation system as lone providers. “We have zero direct competitors,” commented Banks of FrontlineSMS, “Nobody else is working in the same way, in the last mile at the base of the pyramid.”

Increasingly, as social ventures begin to grow and scale up their activities, their resource providers also evolve. For example, FrontlineSMS is starting to move away from restricted program funding where the resource provider gives a grant for a specific program or software application, to receiving general operational funding. This allows FrontlineSMS to invest in scaling up operations and finding ways to maintain financial sustainability. The same is true for Operation ASHA, which started with direct grants and a single clinic. It took about 8 months for OpASHA to assess its pilot project with regard to patient compliance, to test and modify the counselling model and ensure smooth communications. OpASHA clinics can be self-sustaining after two years in a health system providing government incentives and free medicines. Resource providers are now funding expansion rather than maintenance costs of existing clinics.

FrontlineSMS enjoyed the much more rapid development process that is possible in IT. From inception, Banks built his first prototype in five weeks. The iterations of the software including bug fixes can be as fast as hours. In general, healthcare products and services require a longer development trajectory than software and IT products and services. Diffusion of OpASHA’s services require a large contingent of staff who deliver counseling and follow-up in person, whereas FrontlineSMS’s offering is diffused via the Web. OpASHA’s resource providers are experienced in the health field and understand the longer time demands. OpASHA’s primary resource provider, the government, is also its primary strategic partner. The values co-created by the social ventures are shared in a continuous feedback loop with their resource providers.

While our conceptual model enabled us to compare FrontlineSMS and OpASHA on a systematic

basis, the evidence they provide also informed our value generation model. The cases show how social ventures with limited resources can innovate effectively to meet needs of impoverished populations. In these cases, innovative business models harnessed network diffusion effects and social-franchising techniques, respectively. The cases confirm that value can be generated and operations sustained to meet the needs at the base of the pyramid. Existing ecosystems can be made more effective (e.g. through healthcare delivery to marginalized pockets) or new innovation ecosystems can be constructed (e.g. to diffuse low cost technologies to the poor).

DISCUSSION AND CONCLUSIONS

This study advanced through iteration between theory and evidence. Theoretical constructs helped us identify relevant evidence, and subsequent observations advanced and refined the theoretical approach. The cases differed considerably in sector, location and business model but the conceptual framework identified common traits and processes that might otherwise have been overlooked. Both met a key challenge for social ventures, to develop unique internal resources and use these to attract complementary resources from others. Their business models met donor requirements that social impact be realized from their funding, thus aligning users, donors and innovators in a value generation cycle. The case studies of social ventures demonstrated that an operational business model enables strategic objectives to be achieved even when these involve social and not purely economic value. Evidence on the business models of social ventures showed how these could be developed to link internal and external resources needed to create social value even in environments of scarcity. To make this possible, sector-specific resource providers are required who understand the opportunities and challenges in their field. For example, innovations in ICT can be rolled out rapidly but encounter complex network effects, while healthcare innovations require patient funders. In conditions of resource scarcity, well-informed resource providers can contribute more than financial resources to the social venture by sharing their expertise and experience on strategy and governance. Further research could apply the conceptual model to other sectors and innovations and use multiple case studies to extend and elaborate theory (Eisenhardt, 1991). Future work can also give more consideration to funder goals and needs of BOP social ventures.

Recent research on innovation has concentrated on large multi-national corporations who view the base of the pyramid as providing new sources of demand (Dess et al., 2003, Immelt et al., 2009, Prahalad and Hammond, 2002). Entrepreneurial actors in grassroots ventures are still a largely unknown force. But even limited evidence reveals their great potential. They can devise innovative business models that create and capture value in resource-scarce ecosystems and advance innovations from idea to deliverable. The case studies show how this can be achieved: through shared value creation by social entrepreneurs together with external resource providers, public and private, enlisted on a shared mission.

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