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SOCIAL ENTREPRENEURSHIP AS PRACTICAL SOCIAL JUSTICE

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The notion of a special issue devoted to social entrepreneurship arose at a July 2012 GSBI Network meeting preceding the 18th IABJS World Forum in Barcelona. The Global Social Benefit Incubator (GSBI™) Network is a group of mission-aligned universities that incubate and accelerate social enterprises, or wish to. Sharing best practices and content, the group's aim is simple: help more social entrepreneurs help more people living in poverty. The GSBI Network includes Ateneo de Manila, ESADE, Javeriana, Loyola Institute of Business Administration, Santa Clara, and XLRI, as well as several of the nascent African Jesuit universities. Social enterprise incubator or accelerator programs are already in operation at some of these institutes, including ten years of GSBI experience at Santa Clara.

The GSBI originated from the observation that technology innovations benefiting humanity, such as those honored by The Tech Awards program, rarely achieved meaningful scale. The GSBI seeks to link social enterprises using these innovations to the Silicon Valley acumen of building scalable, sustainable ventures. While stories of innovations benefiting hundreds or thousands of lives are inspiring and heartwarming at black-tie events, and they certainly matter to those hundreds or thousands of people, such impact represents a tiny fraction of those suffering from the pressing problems of poverty.

On our planet with seven billion people, 1.5 billion lack access to electricity and thus are unable to read or engage in income-generating activities after night falls. Some 3 billion cook on open fires, using increasingly scarce wood and accelerating the tragic pace of deforestation. Nearly 1 billion lack access to safe drinking water, thereby repeatedly suffering from diarrheal diseases that rob their bodies and minds of

vital nutrients. Over 2.5 billion lack access to improved sanitation: they defecate in the open, and propagate the cycle of infectious disease transmission. For 147 million children under 5 years of age, such malnutrition impairs normal brain development, permanently excluding them from many educational and livelihood opportunities. Over 750 million adults are functionally illiterate: they cannot read or write. Half a billion smallholder farmers do not have access to fair market prices for the crops they labor to produce. The list of such statistics continues *ad infinitum*.

While traditional paradigms to stimulate economic development have met with some success, for the most part, they have not effected systemic change among poor communities. Too much is lost along the way, and in both directions. Development agencies funnel money through governments and large NGOs; corruption and inefficiency exact enormous taxes; solutions are sometimes culturally inappropriate. Free goods and services can unintentionally create collateral economic damage by spoiling markets, and often, the environment. The needs of the poor are poorly understood, and the poor are too infrequently involved in the design of sustainable solutions. Traditional knowledge may be trumped by well-intentioned "solutions": for example, the proliferation of monoculture now appears to be causing substantial environmental damage in many geographies where permaculture technologies that were developed over millennia were supplanted.

The social entrepreneurship movement holds enormous potential to address market and government failures. Social entrepreneurs tend to engage local communities in the design and delivery of their products and services, thereby ensuring that these are appropriate for the local context. By creating local jobs, social enterprises act as nuclei for economic growth while providing goods and services that address the needs of the poor. Respect for the environment and sustainability of the planet are frequent design input requirements as well as success metrics for social enterprises.

This special issue of the *Journal of Management for Global Sustainability* is devoted to social entrepreneurship, with an emphasis on solutions that preserve the planet's capacity to support our own and other species. The first two articles explore the nature of social enterprises and how they promote social justice and global sustainability. The next two examine the role of technology through opposite ends of a lens: appropriate design from the user perspective, and technology contributions to scaling and poverty alleviation. A trio of contributions focuses on off-grid clean energy, a sector of particular relevance to poverty alleviation in ways that reduce the human burden on the planet. The interplay between health and sustainable agriculture continues this theme in a fourth sector-

specific article. Finally, two articles analyze the role of human capital and of incubators and accelerators in scaling social enterprises.

But what is a social enterprise? Classic not-for-profit and for-profit paradigms are insufficient to capture the emerging diversity of social enterprise business models; the relevant dimension is social, and often environmental, impact, rather than economics. Woolley, Bruno, and Carlson examine social venture business models, evaluating the balance between economic returns and social impact in a sample size of 124 social enterprises. Their examination of institutional theory is rooted in practical questions: How do archetypes change over time? Why do some revenue models scale more successfully than others? How do the context and conditions of social issues affect the business model?

Santos examines the range of social enterprise definitions and categorizations, and adapts an integrative justice approach developed for multinational corporations serving base-of-pyramid markets. The key elements for just and fair markets that serve impoverished populations include elements of global sustainability, authenticity, co-creation of value, and representation of all stakeholders. Santos augments theory with a tool for practice: a set of meta-skills to help social entrepreneurs navigate tensions between charity and problem-solving, between social impact and financial sustainability.

Appropriate design of products and services for the poor is a vital element of successful social enterprises. The ten core competencies of frugal innovation for a more just, humane, and sustainable world are described by Banerjee and Basu, with the latter being recently described in Forbes as "changing the world" (http://www.forbes.com/sites/devinthorpe/2013/02/14/training-for-base-of-the-pyramid-population-proving-effective-in-india/). The authors illustrate each of these competencies with an example from a successful social enterprise, in essence providing an action guide to current and future practitioners. Many of the mini case studies illuminate the use of local resources, green technologies, and minimalist designs that serve the poor while reducing burdens on ecosystem services.

Technology platforms play a significant role in product and service design as well as in the operations of social enterprises. Mobile applications afford a stunning example of platform-enabled distributed innovation: developed world consumers choose from a multitude of smartphone apps; impoverished people of the planet benefit from the delivery of goods and services such as banking, market prices, and health care information. Fisac-Garcia, et al., analyze how ICT applications drive social impact both as innovations that provide direct benefit and as instruments to improve operational efficiency of social enterprises and

NGOs. These examples form a foundation for discerning how government and private sector investment in technology platform standards can accelerate social impact.

Author of *Green Energy for a Billion Poor*, Wimmer's contribution to this special issue introduces us to scalable clean energy solutions for the 1.5 billion people on the planet who are not connected to the grid. Informed by years of field experience working with Grameen Shakti, she illuminates how solar energy entrepreneurs turn rural villages into manufacturing hubs managed by women engineers. The business model is sustainable, and delivers environmentally sustainable energy to fuel these nuclei for economic growth.

Koch and Hammond explore the off-grid, clean energy opportunity, estimating that the market exceeds $1 trillion. They identify patterns of technology and business model adaptation from a database of off-grid energy social enterprises (http://www.energymap-scu.org/). Their thoughtful analysis includes deployable technologies organized by sources of power, attractive market segments, and viable business models. The value chain analysis is of particular interest to both practitioners and investors who seek to accelerate alleviation of energy poverty while promoting environmental sustainability.

Analyzing the same off-grid energy database, Albi and Lieberman provide specific examples that illustrate the three-dimensional aspect of successful social enterprises: appropriate technology solutions, business model innovations that overcome the inherent complexity of less-developed markets, and mechanisms to address contextual factors ranging from government subsidies and tariffs to culturally-aligned community governance paradigms.

Base-of-pyramid thought leader Hammond offers a perspective on how to scale impact in health care. He first notes that modern, large-scale agricultural practices are linked to malnutrition and lifelong health issues in both the developing and developed world. The link between nutrition security and sustainable agriculture thus affords a unique leverage point for development organizations. A second leverage point is safe drinking water. He observes that community-scale strategies, such as those employed by social enterprises, appear to have more potential as sustainable distribution models than centralized urban systems. Hammond advocates for investment in scalable models, linking healthcare, nutrition, and safe water.

Talent is critical to the scaling of any venture; however, as Harris and Kor describe, acquisition of appropriate human capital is particu-

larly daunting for social enterprises. They examine how human assets affect the success of ventures, and identify specific challenges related to attraction and retention of resources in two social enterprises working on different continents. In accord with this journal's focus on practical action, they propose strategies to ameliorate these challenges.

Incubators and accelerators help social entrepreneurs develop investment-ready business plans, and most critically, achieve meaningful scale. Casanovas and Bruno revisit the definition of social enterprise and explore the role incubators and accelerators play in scaling the impact of social enterprises. Academics and practitioners alike will benefit from their ten propositions about the nascent field.

When I was asked to serve as guest editor for this special issue, I imagined a series of manuscripts that would each contribute both academic knowledge and practical insights to the burgeoning movements of social entrepreneurship and global sustainability. The authors have certainly met that reasonable expectation. I did not imagine that the manuscripts would converge to create an integrated volume far exceeding the sum of its parts. I could not have imagined that, as the authors submitted their final manuscripts, a new Pope would be elected, his chosen name of Francis a symbol for service to the poor, his first words a reminder for humanity of our collective call to such service.

So, what next? Social entrepreneurship alone cannot answer all of the needs of the poor or of the planet: governments, corporations, NGOs, and other organizations must also invest in and commit to the alleviation of global poverty in ways that sustain the planet. But social entrepreneurship is undoubtedly a vital force for change at a unique moment in history. My work as editor has further convinced me that our vision at Santa Clara to positively impact 1 billion of the world's poor by 2020, though ambitious, is possible. We can do so by helping more social entrepreneurs achieve success and scale. GSBI Network incubators and accelerators are vital to realizing this vision and share a mission for a more just, humane, and sustainable world. Readers, whatever their vocations, might ask how their endeavors can contribute to this momentum, then intensify relevant efforts.

Social entrepreneurs are the visionaries who craft innovative business plans to serve the poor and benefit the environment; they are charismatic leaders who attract talent to implement their visions. This special issue is dedicated to them and their work, with the hope that the collective wisdom found within will accelerate progress in service to humanity and the planet.

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SOCIAL VENTURE BUSINESS MODEL ARCHETYPES

FIVE VEHICLES FOR CREATING ECONOMIC AND SOCIAL VALUE

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Abstract. Social ventures balance the economic and social dimensions of value creation to alleviate the problems created by shared collective issues. While much is known about economic value creation in conventional firms, little empirical work has focused on social ventures. As the number of social entrepreneurs continues to increase, the challenge of creating both economic and social value has emerged as an important research topic. In this article, we examine 124 social ventures from around the world to gain insight into ways social ventures pursue economic and social value creation. Five social venture business model archetypes emerge from the data. We conclude with implications for both theory and practice, and promising areas for future research.

INTRODUCTION

Social ventures have sparked considerable interest among organizational theorists and practitioners alike due to the recent increase in social entrepreneurship around the world and the novelty of their objectives. While social ventures have existed for decades, the awarding of the Nobel Peace Prize to Muhammad Yunus in 2006 for his work in pioneering the field of microfinance for women in poverty brought immediate and widespread attention to social venturing. The enormous reported success of Yunus' Grameen Bank, with a 98.6% repayment rate (Yunus, 2007), has garnered the attention of entrepreneurs and corporations alike. In fact, social entrepreneurs have been described as "the vanguard (of) worldwide transformation" to improve the quality of life and standard of living around the world (Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, 2008: 117).

The work to understand social ventures is a nascent yet promising endeavor (Dacin, Dacin, & Matear, 2010; Short, Moss, & Lumpkin, 2009). In this young area, many articles discuss the definition of social venture or social entrepreneur (Dacin et al., 2010; Dees, 1998; Mair & Marti, 2006; Peredo & McLean, 2006; Short et al., 2009; Zahra, Gedajlovic, Neubaum, & Shulman, 2009). Short and colleagues (2009) found that 38% of conceptual social entrepreneurship articles written between 1991 and 2009 focused on descriptions or definitions of the construct. Those articles constituted 20% of all published social entrepreneurship research. However, as the field has progressed in exploring the scope of social entrepreneurship and the concepts therein, little empirical work has been published (Weerawardena & Mort, 2006).

Scholars do agree on one topic—that the main distinguishing characteristics of social ventures are their funding or revenue sources and their missions. While social ventures tend to focus on social rather than economic goals (Mair & Marti, 2006), it is not clear what differentiates these goals or their enactment. Explicating not only the objectives of these ventures but also the methods used to accomplish these objectives is important in the understanding of how social ventures relate to traditional ventures (Florin & Schmidt, 2011). However, how social entrepreneurs assemble and employ resources to enact their missions remains unclear (Zahra et al., 2009).

In this article, we examine resource mobilization and mission enactment by asking 1) which business models do social ventures employ and 2) what is the relationship between an organization's business model and its social mission. Using a unique dataset of 124 early social ventures from around the world, we identify the most common business

models used. Furthermore, we explore how these business models are employed to fulfill the goals of the venture, such as fighting poverty, increasing educational opportunities, and improving the environment. To do so, we focus on the sources of funding, revenue, missions, and locations of these social ventures to determine if patterns exist. By examining these characteristics of social ventures through exploratory factor analysis and descriptive statistics, we find five social venture business model archetypes. These archetypes provide insight into how the unique objectives of social ventures, one of the very aspects that makes them so intriguing, are reached in a world heavily influenced by profit-maximizing concepts and mindsets.

The main contribution of this article is its empirical investigation of commonalities among social ventures and the identification of distinguishing characteristics. Literature in this area has largely treated social ventures as being homogeneous, with any variation found in the entrepreneur himself/herself (Zahra et al., 2009). We build on previous research by shifting the focus from the definition and recognition of the opportunity by the social entrepreneur to the enactment of the opportunity by the social enterprise itself. By identifying social venture business model archetypes, we build on the work defining a typology of social entrepreneurs (Zahra et al., 2009), and show how social ventures attempt to create and capture economic and social value.

The article proceeds with a discussion of the literature on social entrepreneurship and social ventures. In the following section, the setting for the study and the methods are described. Findings start with identifying business models and progress to identifying relationships between business models and venture missions. We then discuss the implications of these findings for social entrepreneurs. Specifically, we contend that social entrepreneurs can benefit by knowing which business models are most suitable for scalable social ventures in their market sectors. Social entrepreneurs who understand their business model alternatives in the context in which their social ventures operate can improve their decision-making skills and the chances for the survival of their organizations. We conclude with opportunities for further research in this burgeoning area and a discussion of implications for the stakeholders of social entrepreneurs.

SOCIAL PROBLEMS AND BUSINESS SOLUTIONS

Social entrepreneurship increasingly garners interest from researchers and the public alike; however, a deeper understanding is stymied by the contention surrounding its definition. Work on social ventures has

engaged in various debates on its definition, especially the characteristics that differentiate social entrepreneurship from traditional forms of business enterprise (Austin, Stevenson, & Wei-Skillern, 2006; Dacin et al., 2010; Zahra et al., 2009). Definitions range from organized philanthropy (Van Slyke & Newman, 2006) to organizations aimed at progressive social transformations (Martin & Osberg, 2007). Definitions often refer to a "double bottom line" that emphasizes both social and economic dimensions (Emerson & Twersky, 1996). Some include a "triple bottom line" that portrays social, economic, and environmental dimensions of the enterprise (Desrochers, 2010). While we appreciate the veracity of the core ideas in these descriptions, there is but one unifying theme throughout: social ventures are "organizations seeking business solutions to social problems" (Thompson & Doherty, 2006: 362).[1]

In their attempt to clarify this cloudy territory, Zahra and colleagues (2009: 519) attempted to integrate the variety and diversity of definitions into one: "Social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner." Similarly, Dacin and colleagues (2010) find that the definitions of social entrepreneurship tend to converge on four key factors: 1) characteristics of individual social entrepreneurs, 2) operating sector, 3) processes and resources used, and 4) primary mission and outcomes. Of these four factors, the authors find the last two—use of resources and primary mission—as having the potential for the most significant variation. Thus, we focus this study on these two factors: processes/resources used and primary missions/outcomes.

Social ventures attempt to alleviate problems caused by shared collective issues by using methods traditionally applied to commercial businesses (Austin et al., 2006; Dacin et al., 2010; Meyskens, Robb-Post, Stamp, Carsrud, & Reynolds, 2010). As such, social ventures use resources to maintain operations and achieve their goals (Barney, 1991; Daft, 2009) much like conventional enterprises do (Dacin et al., 2010). However, while the literature on conventional entrepreneurship emphasizes sources of funding, including loans, capital from friends and family and venture capital investment during their formative years, studies have not determined the extent to which these same capital sources are available for and utilized by social ventures. In fact, it was not until the mid-1990's that selected venture capital firms with their own social mission targeted funds for social entrepreneurs. With increased numbers of for-profit and

[1]We acknowledge that the definition of social venture remains contentious. For reviews of the literature, please see Zahra et al., 2009; Short et al., 2009; Dacin et al., 2010.

non-profit organizations entering the social arena, social ventures have started to explore alternatives to obtaining the funding they need (Dees, 1998). Similarly, social ventures compete with conventional ventures to capture value, both social and economic. These facts raise questions: From where do social ventures obtain their funding and how are they employing these funds to reach their objectives? In essence, what are the characteristics of social venture business models?

The term "business model" gained popularity in the 1980's with the increased use of spreadsheets that enabled business modeling to become standard practice in developing and executing a business strategy. Since that time, a number of articles have been written that generally address the topic of business models. One of the earliest efforts to define business models was proposed by Timmers (1998: 4) as "an architecture for the product, service, and information flows, a description of the benefits for the business actors involved, and a description of the sources of revenues." In his analysis of e-commerce, he used a two-dimensional model of functional integration and degree of innovation to identify eleven Internet business models. Similarly, Amit and Zott (2001: 494–495) examined e-businesses and proposed defining a business model as "transaction content, structure and governance so as to create value through the exploitation of business opportunities." Through the years, work by scholars and practitioners building on these frameworks has culminated in identifying three main differentiating elements of business models: resources, value proposition, and profit formula (e.g., Chesbrough & Rosenbloom, 2002; Malone et al., 2006).

As mentioned earlier, one area in which conventional and social ventures differ is in their missions. In general terms, the mission of a conventional venture is to maximize shareholder wealth through value creation and appropriation. Social ventures maximize social benefit by creating social value (Mair & Marti, 2006). Thus, the missions of social ventures center on alleviating problems of society and community, both narrowly and broadly defined. In the case of the former, the mission may address the needs of a rural African village. In the case of the latter, the mission may aspire to improve the sustainability of the planet. These are shared collective issues that influence many people. Thus, in identifying business models of social ventures, the profit formula focusing only on pecuniary gains may not capture how an organization is providing communal value. For social ventures, the profit formula element of the business model should be replaced with a broader characterization of value such that social business models will focus on resource use, the value proposition, and social value creation and capture. For example, Florin and Schmidt (2011) found that social entrepreneurs create hybrid

organizations using business model innovations to enact social and environmental goals.

As discussed, the two main characteristics of social ventures with the most potential for variation are the processes of resource orchestration and primary mission identification. These overlap the social business model in that the mission of a social venture often describes the value proposition and value creation mechanisms; therefore, a powerful differentiator of one social venture from another will be the business models that they employ.

Social ventures "are sustainable only through the revenue and capital that they generate; thus, their financial concerns must be balanced equally with social ones" (Dacin et al., 2010: 45; see also Webb, Kistruck, Ireland, & Ketchen, 2009). In other words, to be sustainable, a social venture must not only create social value for the collective good, but also create economic value for sustaining the organization's continuing operations. Because conventional organizations have only one of these constraints, this dual requirement is peculiar to social ventures. However, while research in social entrepreneurship focuses on the individuals that create these organizations and their motives (Spear, 2006; Zahra et al., 2009), we have little insight into how these entrepreneurs attempt to enact their missions. The processes by which social entrepreneurs enact their missions are important since the balance between the economic and social aspects of a social venture's value creation is critical to its success. While theoretically intertwined, the relationships among a social venture's business models, missions, locations, and founding date remain unclear. In this article, we examine the relationship between business model and mission. We expect that our results should inform prospective social entrepreneurs who are confronted with the challenge of creating and executing business models that support organization sustainability and serve their missions. The more efficiently the social entrepreneur iterates his/her venture to the appropriate business model, the more impactful the venture will be.

METHODS

Setting

To examine the business models of social ventures, we use the data from social ventures participating in the Global Social Benefit Incubator (GSBI™) at Santa Clara University. Since 2003, the GSBI has helped social businesses develop sustainable business models through an intensive two-week residential program augmented by online collaborative education and intensive individual mentoring. Through 2010, 124 organiza-

tions had graduated from the GSBI program. Of these organizations, a third operate in South East Asia (mainly India), 28% operate in Africa and the Middle East, 15% in South America, 5% are located in Asia, and the rest operate in the Middle East, United States, or multiple areas. Table 1 summarizes the locations of our sample. The GSBI chooses organizations for participation based on the organization's social-oriented mission, commitment to the social mission, potential benefit to society, and the likely scalability of the social venture. While the database contains a bias toward successful organizations, such data were chosen for that very reason—they provide detailed information about the business models that were effective for social venture survival. Over 90% of the participating ventures were still operating in 2012.

Region	Count	Percentage
Asia	6	4.80%
SouthEast Asia	41	33.10%
South America	18	14.50%
Africa and Middle East	34	28.20%
Multiple regions	24	19.40%
Total	124	

Table 1. Sample of social ventures by geographic region

Data

Extensive archival data were collected for each of the organizations. Data included business plans, financial statements, correspondence, and websites totaling approximately 3,000 pages. These documents were open coded by at least two researchers for several variables, including source of funds, mission, organization's location (country and region), year founded, and year dissolved (if applicable). Open coding entails analyzing each line of data to determine labels, definitions, or events related to the research question (Strauss & Corbin, 1998). Since the initial funding of all 124 organizations was contributed (usually at the beginning of operations as start-up funding), the classification of funds was based on the primary drivers in the business models in long-term operations. After coding 15 organizations, researchers compared results and discussed similarities and differences for revenue and funds flow. Collectively, the researchers determined a final set of codes for each variable and then recoded the data accordingly.

The organizations were coded by their missions using the Millennium Development Goals (MDG), a categorization created by the United

Nations with the objective of ending poverty by the year 2015 (United Nations, n.d.). There are eight MDG, the first seven of which are relevant to social venture missions. The eight MDG are 1) eradicate extreme poverty and hunger, 2) achieve universal primary education, 3) promote gender equality and empower women, 4) reduce child mortality, 5) improve maternal health, 6) combat HIV/AIDS, malaria, and other diseases, 7) ensure environmental sustainability, and 8) develop a global partnership for development. The eighth is an institutional goal and not relevant to individual social ventures; thus, it was dropped from the analysis and not coded.

Some of the social ventures from the GSBI do not have missions described by the MDGs. These organizations tend to have missions related to the MDG, but broader in scope. For example, multiple organizations promote equality, but not exclusively for women. Reexamining the missions of the organizations in the sample led to the creation of six overarching goal categories: 1) poverty, 2) education, 3) equality, 4) health, 5) environment, and 6) other. The "other" category included ventures that did not fit into the preceding set of categories such as safety inspections of buildings, technology development, and translation services. All organizations were coded dichotomously for these six mission categories, each with its separate variable. Table 2 summarizes the number of ventures associated with each mission.

The context of an organization not only depends on its geographical location but also the time at which it was founded. Work in organizational demography and population ecology has generally found that the age of an organization influences its chances for survival (Hannan, 1998). At the same time, "the kinds of organizations that emerge reflect the social structures of the founding period" (Hannan, 1998: 132). Specifically, the types and structures of organizations that are socially acceptable reflect their institutional environments, which change over time (Meyer & Rowan, 1977). As social ventures have gained legitimacy in both the social and theoretical realms (Dart, 2004; Peredo & MacLean, 2006), options available to them change as well. For instance, as mentioned, venture capital firms only started dedicating funds to social ventures in the 1990's; thus, venture capital was not widely available for social ventures before that time. It would follow that the business models used by social ventures would change over time as well.

To capture the context and timing of the venture, we included variables on the venture's location and date founded. The ventures operate in 34 countries including India, Nigeria, South Africa, Kenya, Indonesia, Cambodia, Mexico, and Argentina. The firms were recoded using binary variables representing six regions: Asia, South East Asia, South America,

Africa, the Middle East, and the US.[2] The ventures were coded by year founded, which ranged from 1920 to 2009. The sample was then split into three cohorts using the creation of the MDG in 2000 as the basis for defining the first cohort and then splitting the remaining ventures into two roughly equal groupings. With an even split between the organizations founded in the years 2000 to 2009, the last year an organization in the sample was founded, each cohort included approximately a third of the sample. Binary variables represent each of the three cohorts: before 2000, 2000–2004, and 2005–2009.

Mission	Count	Percentage
Environment	19	15.30%
Poverty	67	54.00%
Education	16	12.90%
Health	13	10.50%
Equity	5	4.00%
Other	4	3.20%

Table 2. Summary of missions for social ventures in the sample

Analysis

To analyze the business models of these ventures, we used exploratory factor analysis (EFA). EFA is a data reduction method that identifies the number of factors (latent variables) that effectively represent the data (Kline, 1998). A factor or latent variable is an unobserved variable that is not measured directly by observed variables (Kelloway, 1998). In an exploratory factor analysis, the observed variables are considered linear combinations of factors (Suhr, 2003). EFA determines the number of factors that linearly reconstruct the observed variables (STATA, 2001). Each observed variable is correlated to or "loads onto" each factor and the factor loadings are the correlation between a variable and a factor. The model of exploratory factor analysis is

$$Y = X\beta + E$$

where Y is a matrix of observed variables, X is a matrix of factors, β is a matrix of factor loadings, and E is a matrix of errors called uniqueness values (Suhr, 2003).

[2]All ventures in the US operate in multiple countries.

In STATA, a tetrachoric correlation matrix was created since the variables were coded dichotomously (Uebersax, n.d.). Next, we ran an EFA based on this correlation matrix. The initial model included the maximum number of factors, which showed an extreme scenario to encompass all variance of the variables. However, the extreme case usually includes too many factors to effectively reduce the data since few variables load onto each factor. Next, we set upon determining the number of factors to effectively reduce the data but explain as much of the variance in the model as possible. These EFA results indicate the eigenvalue of each factor or the amount of variance explained by each factor. In this case, factors are used to represent business models. One method of determining the number of factors to retain is to perform a scree test by plotting the eigenvalues and determining the number of factors in the plot that represent the highest variance (Cattell, 1966). The results indicated that no fewer than four factors should be retained in the model. Next, we ran four EFA models retaining four, five, six, and seven factors. In each model, we identified which factor each variable loaded on to the strongest (highest). We then looked at patterns emerging from the factors. Models with six and seven factors resulted in factors with no income or revenue variables loading highly, thus rendering the models unproductive for this study. The models with four and five factors each resulted in factors loaded highly with at least one income or revenue variable, a mission, and a location. The model with five factors contained variables with lower uniqueness values than the models with four factors, which indicates a better fit with the data. To eliminate bias that arises from researcher arbitrariness, both four and five factor models were examined in light of theory regarding social entrepreneurship. This effort resulted in the retention of the five-factor model. Next, the models were rotated and factor loadings were determined.[3] From this process, archetypes emerged from the data depicting the most highly correlated funding or revenue, mission, location, and founding date. These archetypes are discussed in the next section.

FINDINGS

Revenue and Funding

Social ventures obtain financial resources mainly through contributions and earnings from governments, donors, impact investors or customers. GSBI ventures used one or multiple methods to obtain funds, including grants, donations, sales, transaction fees, licensing royalties, franchise royalties, or subscriptions. In total, 39% of the ventures relied

[3]All models, scree plot, and rotations are available from the authors upon request.

on contributions, 82% earned an income, and 21% used a combination of both. Table 3 summarizes these methods and their representation in the sample. Half of the ventures obtained revenue directly from the sales of products or services. Across all ventures, 44% offered products and 42% offered services. Ventures also used a per transaction fee to earn revenue (26% of sample). Additionally, 21% and 24% of the ventures obtained funding from grants and donations, respectively.

Main Resources	Number of Social Ventures	Percentage of Sample
Sales	62	50.00%
Products	55	44.40%
Services	52	41.90%
Coop	1	0.80%
Grants	26	21.00%
Donations	30	24.20%
Per transaction fee	32	25.80%
License/franchise	7	5.60%
Subscriber/access	8	6.50%
Other	3	2.40%

Table 3. Summary of GSBI social ventures by major financial sources
Note: The total does not equal 100% since some firms are equally split between two major financial sources.

Ventures obtained contributed capital from individuals, mission-aligned foundations, or government entities that provide funds without receiving a product or service in return. Contributed capital ventures rely on these parties to provide funds in the form of grants and donations. For example, the *Comite para Democratizacao da Informatica de Brasilia* (CDI-DF) provides free computers, software, training, and technical maintenance in Brazil and is funded by monetary and product donations. *Meds and Food for Kids*, a provider of highly nutritious foods to malnourished Haitian children, was initially funded through a World Bank Grant before being funded by donations. Organizations also obtain donations as a percentage of third-party sales.

Earned income ventures provide products or services as a means to fund their social agenda. The income is based on products or services with an "economic buyer" that may or may not be the direct beneficiary of the products/services. Ventures earned income from sales of products

or services, coop fees, per transaction fees, licenses, franchises, and subscriptions. Half of earned income ventures did so through direct sales of products or services, often making the goods that they sold. Alternatively, ventures sold goods produced by third parties. Organizations also earned an income through transaction fees (26%), subscriptions (7%), and licensing and franchising fees (6%). Examples include *b2bpricenow.com* which provides an online portal for rural farmers to trade goods and charges a fee per transaction, *Video Volunteers* which utilizes earned income from licensing fees when it helps create separate video businesses in the slums of Brazil, and *Transclick* which uses a subscription-based income model providing real-time translation on phone calls.

A small group of five ventures was composed of hybrid models with two (or more) legal entities, at least one of which was based on contributed capital drivers and (at least) one based on earned income drivers. For example, *Synergo Arts* helps artists and artisans around the world with ergonomic work solutions such as the ergonomic weaving benches it creates and distributes. It finances its activities by collecting donations and providing consulting services for a fee.

Business Model Archetypes

As described, funding, missions, location, and year of founding were examined using EFA. Comparing the sources of funding to primary missions and location of the social ventures also showed several patterns. Descriptive statistics and a correlation matrix of the variables are shown in Tables 4 and 5, respectively. The factor analysis with five factors retained is shown in Table 6.[4] Each of the five factors represents a social venture archetype, summarized in Table 7. The five social venture archetypes are 1) Government Contributions, 2) Private Contributions, 3) Product Sales, 4) Service Offering, and 5) Licensing and Franchising.

Social ventures using the Government Contributions business model archetype obtain funds primarily through grants and donations from their national governments and international government entities such as the United Nations. These ventures most often support equality-related missions in multiple regions, with an emphasis on South America. The ventures relying on government support are mainly those founded before 2000.

[4]Resulting model: $X^2(378) = 9919.98$ $p<0.0000$

Variable	Mean	SD	Min	Max
Products	0.44	0.50	0	1
Services	0.42	0.50	0	1
Coop	0.01	0.09	0	1
Grants	0.21	0.41	0	1
Donations	0.24	0.43	0	1
Sales	0.50	0.50	0	1
Transaction	0.26	0.44	0	1
License/franchise	0.06	0.23	0	1
Subscriber	0.07	0.25	0	1
Other	0.02	0.15	0	1
Mission-Environment	0.15	0.36	0	1
Mission-Poverty	0.54	0.50	0	1
Mission-Education	0.13	0.34	0	1
Mission-Health	0.11	0.31	0	1
Mission-Equity	0.04	0.20	0	1
Mission-Other	0.03	0.18	0	1
Asia	0.05	0.22	0	1
SouthEast Asia	0.33	0.47	0	1
South America	0.15	0.35	0	1
Africa and Middle East	0.27	0.45	0	1
Multiple regions	0.19	0.40	0	1
Found before 2000	0.38	0.49	0	1
Found 2000-2004	0.34	0.48	0	1
Found 2005-2009	0.28	0.45	0	1

Table 4. Descriptive Statistics

The Private Contributions business model archetype social venture obtains funds primarily through individuals, investment organizations, and private foundations. These funds are usually in the form of grants, cash donations, product donations, the donation of a percentage of the donor's sales, and equity investment. The primary missions of Private Contributions ventures tend to focus on health. Social ventures relying on private contributions tend to be located in Africa and the Middle East, but are also found in South East Asia. These tend to be founded between the years 2000–2004.

	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	Government	1											
2	Products	-0.51	1										
3	Services	0.16	-0.49	1									
4	Coop	-0.25	0.50	-0.43	1								
5	Grants	0.56	-0.31	0.06	-0.31	1							
6	Donations	0.37	-0.43	-0.28	-0.35	0.36	1						
7	Sales	-0.29	0.87	-0.51	0.53	-0.32	-0.37	1					
8	Transaction	0.11	-0.59	0.75	-0.42	-0.03	-0.24	-0.57	1				
9	License/franchise	-0.26	0.08	0.06	-0.24	0.12	-0.06	-0.11	0.27	1			
10	Subscriber	0.36	-0.31	0.57	-0.24	0.12	0.11	-0.26	0.05	-0.31	1		
11	Other	-0.19	0.20	0.10	-0.07	-0.31	-0.41	0.18	0.26	-0.19	-0.21	1	
12	Mission-Environment	-0.36	0.24	-0.05	-0.14	-0.14	0.14	0.29	-0.18	0.29	0.12	-0.23	1
13	Mission-Poverty	-0.02	0.07	0.06	0.44	-0.13	-0.25	0.11	0.18	-0.10	0.03	0.52	-0.31
14	Mission-Education	0.49	-0.12	0.20	-0.24	0.29	0.23	-0.07	-0.06	-0.42	0.48	-0.26	-0.19
15	Mission-Health	0.28	0.04	-0.31	-0.16	0.32	0.31	0.02	-0.21	0.26	-0.33	-0.17	-0.16
16	Mission-Equity	-0.14	-0.47	-0.05	-0.16	0.23	0.22	-0.53	0.11	-0.17	-0.23	-0.09	-0.13
17	Mission-Other	-0.27	0.08	0.06	-0.11	-0.35	-0.37	-0.07	0.16	0.45	-0.24	-0.05	-0.12
18	Asia	-0.27	-0.06	0.19	-0.09	-0.41	0.16	0.01	0.04	-0.26	0.39	-0.05	0.20
19	SouthEast Asia	0.16	-0.06	0.10	0.54	0.05	-0.15	0.02	0.08	-0.07	0.06	-0.25	0.11
20	South America	0.01	0.06	-0.21	-0.32	0.28	0.20	0.02	-0.12	0.07	-0.44	0.27	0.07
21	Africa and Middle East	-0.12	-0.08	0.12	0.39	-0.13	0	-0.02	0.06	-0.14	0.21	-0.43	0.16
22	Multiple regions	0.11	-0.13	-0.02	-0.36	0.17	0.07	-0.18	0.04	0.33	0.13	-0.32	-0.01
23	Found before 2000	0.25	-0.32	0.01	-0.41	0.30	0.43	-0.42	-0.12	0.24	0.27	-0.46	0.12
24	Found 2000-2004	-0.11	0.16	-0.10	0.56	-0.05	-0.06	0.24	-0.20	-0.10	-0.13	-0.33	-0.01
25	Found 2005-2009	-0.10	0.09	0.13	-0.25	-0.12	-0.25	0.13	0.32	-0.09	-0.07	0.64	0.02

Table 5a. Correlation Matrix

The Product Sales business model archetype is not simply about selling a venture's own product, but includes the sale of third party products in resale and wholesale. Product Sales social ventures focus on an education mission, primarily in Asia. These ventures are usually those founded in the latest cohort, between the years 2005 and 2009.

	Variable	13	14	15	16	17	18	19	20	21	22	23	24	25
13	Mission-Poverty	1												
14	Mission-Education	-0.31	1											
15	Mission-Health	-0.30	-0.18	1										
16	Mission-Equity	-0.29	-0.13	-0.10	1									
17	Mission-Other	-0.28	-0.15	-0.10	-0.04	1								
18	Asia	0.07	0.21	-0.27	-0.20	-0.21	1							
19	SouthEast Asia	0.21	-0.19	-0.05	0	-0.38	-0.24	1						
20	South America	-0.19	-0.05	0.10	0.21	0.15	-0.31	-0.39	1					
21	Africa and Middle East	0.11	-0.01	-0.10	-0.01	-0.43	0.54	0.60	-0.60	1				
22	Multiple regions	-0.43	0.22	0.11	0.12	0.37	-0.27	-0.33	-0.29	-0.35	1			
23	Found before 2000	-0.37	0.11	0.13	0.09	0.23	0.08	-0.14	0.21	0.03	0.12	1		
24	Found 2000-2004	0.08	0.07	-0.16	-0.04	0.04	-0.08	0.21	-0.05	0.10	-0.11	-0.48	1	
25	Found 2005-2009	0.17	-0.12	0.10	-0.01	-0.38	0.08	-0.07	-0.18	-0.03	0.05	-0.48	-0.51	1

Table 5b. Correlation Matrix (continued)

The Service Offering business model archetype includes not only simple service transactions (fee-for-service), but also includes vendors that are membership or subscription based, or ventures that provide access to markets such as a coop or online marketplace. For example, *Digital Divide Data* provides IT services to libraries, publishers, businesses, and institutions for a fee, and provides job opportunities by training young Cambodians and Laotians. *E-shop Africa* provides access to a web-based marketplace for African artisans. Service Offering ventures focus on alleviating poverty in many areas including Asia, South East Asia, Africa, and the Middle East. The Service Offering archetype highlights the relationship between earning an income through services and the mission of poverty alleviation. This finding is consistent with Prahalad (2005), Hart and Christensen (2002), and others who argue that poverty reduction can be accomplished through traditional market (earned income) approaches. Service Offering ventures are among the youngest, being founded between the years 2005 and 2009.

	Factor					
Variable	**1**	**2**	**3**	**4**	**5**	**Uniqueness**
Government	0.58	0.18	0.21	-0.52	0.05	0.32
Products	-0.79	-0.34	0.14	0.11	0.29	0.14
Services	0.40	0.56	-0.46	0.24	-0.12	0.24
Coop	-0.78	0.18	0.41	-0.13	-0.34	0.06
Grants	0.57	-0.14	0.26	-0.46	-0.11	0.37
Donations	0.55	-0.11	0.47	-0.19	0.21	0.38
Sales	-0.80	-0.21	0.21	-0.01	0.36	0.14
Transaction	0.34	0.37	-0.69	0.10	-0.35	0.13
License/franchise	0.11	-0.45	-0.19	0.44	-0.38	0.42
Subscriber	0.40	0.62	0.14	0.23	0.35	0.27
Other	-0.37	0	-0.78	-0.37	0.26	0.04
Mission-Environment	-0.12	-0.08	0.21	0.51	0.23	0.62
Mission-Poverty	-0.44	0.42	-0.28	-0.34	-0.14	0.42
Mission-Education	0.40	0.23	0.28	-0.06	0.46	0.50
Mission-Health	0.17	-0.43	0.19	-0.31	-0.01	0.65
Mission-Equity	0.34	-0.10	-0.05	-0.17	-0.35	0.72
Mission-Other	0.04	-0.50	-0.29	0.55	-0.28	0.28
Asia	-0.04	0.52	0.06	0.42	0.50	0.30
SouthEast Asia	-0.21	0.48	0.33	-0.16	-0.54	0.30
South America	0.12	-0.63	-0.12	-0.31	0.11	0.47
Africa and Middle East	-0.15	0.68	0.40	0.22	-0.17	0.27
Multiple regions	0.40	-0.32	-0.05	0.31	0	0.64
Found before 2000	0.63	-0.20	0.28	0.28	0.06	0.41
Found 2000-2004	-0.35	0.05	0.42	0.02	-0.38	0.55
Found 2005-2009	-0.16	0.18	-0.61	-0.25	0.35	0.39

Table 6. Factor Analysis Results with Five Factors Retained

Number of observations = 124
Retained factors = 5
Number of parameters = 115
LR test: independent vs. saturated: chi2(300) = 0.0004104 Prob>chi2 = 0.000

Archetype	Resource Source	Location	Founded
I. Government and Equality	1 – Government grants	South America	before 2000
	2 – Donations	Multiple Regions	
II. Private Contributions and Health	1 – Foundation grants	Africa	2000–2004
	2 – Donations	Middle East	
	3 – Contributions plus product or services (hybrid)	SE Asia	
III. Product Sale for Education	4 – product sales—own product	Asia	2005–2009
	5 – product sales—third party product	South America	
	6 – product sales—student produced		
IV. Services to Fight Poverty	7 – Own services (sales by transactions)	Asia & SE Asia	2005–2009
	8 – Membership (fee to join / subscription based)	Africa	
	9 – Access vendors (coop or market access)	Middle East	
V. Licensing and Franchising for the Environment	10 – License or franchise product	Multiple Regions	before 2000
	11 – License or franchise services		

Table 7. Social Venture Archetype Summary

The Licensing and Franchising business model archetype includes the licensing of products and the franchising of business processes and models. Franchising is becoming a more frequent business model for social ventures (Tracey & Jarvis, 2007). In our sample, such social ventures tend to have missions focused on the environment or issues not captured in the other categories. The Licensing and Franchising archetype is the most global of the ventures, often operating in multiple regions. The relatively global operations for this archetype follow the hypothesis, proposed by Zahra and colleagues, that "social ventures are likely to

internationalize when they have or can develop particular capabilities that could be deployed to serve unique social needs" (Zahra et al., 2008: 125). Licensing and Franchising social ventures attend to issues common in many societies. For example, *Meridian Design, Inc.* tackles the problem of unclean water by designing and licensing its water purification technology, thus attending to an issue faced throughout the world. Similarly, *Frost Protection Corporation* licenses its agriculture products that help farmers protect crops from cold temperatures.

DISCUSSION

Organizations range from purely economics-driven to purely charity-driven (Margolis & Walsh, 2003). Social ventures and entrepreneurs lie in the middle of this spectrum, attempting to bring together economic and social value creation (Dacin et al., 2010; Emerson & Twersky, 1996). Social entrepreneurs often use business model innovations to incorporate social value creation into their strategic objectives (Florin & Schmidt, 2011). However, within that portion of the spectrum consisting of social ventures, great heterogeneity remains. In this article, we attempt to shed some light on the types of social ventures by highlighting heterogeneity across mission and context. By examining a database of 124 social ventures that have participated in the GSBI over the past nine years, we find that the mission of a social venture is often tied to a particular business model, i.e., poverty and a services-based business model, or equality and a government support-based model. Furthermore, by examining patterns in capital, missions, and locations of social ventures through factor analysis, we find that not only are these elements related, but also that they can be summarized by five business model archetypes.

This study builds on institutional theory that seeks to understand how organizations are "imprinted" by their environment (e.g., Boeker, 1988; Johnson, 2007; Kriauciunas & Kale, 2006). In their efforts to change their social or environmental contexts, social venture entrepreneurs are both constrained and enabled by that same context. Conventional ventures struggle with the same circumstances (Oliver, 1991); however, social ventures provide an extreme example. As such, social ventures may have a different yet equally complex set of environmental influences. Starting with the lack of traditional funding sources such as those focused on profit-maximization and available to for-profit firms, social ventures are directly and immediately influenced by their context.

This article contributes to entrepreneurship literature by focusing on how organizations enact their objectives. We show that social ventures use a subset of business models that are largely linked to their mission

and environmental contexts. This finding raises questions: Are business models, funding sources, and objectives of conventional organizations similarly linked? What is the variance across cultural, institutional, conventional and social ventures? Similarly, in studying social ventures, scholars focus on ventures with a particular type of objective: social missions. In doing so, this work highlights the importance of a venture's objectives to its choice of business model. A better understanding of this relationship would be useful across the different types of ventures.

This study also extends our understanding of the range of social ventures. First, through an empirical study of social venture business models, missions, locations, and time of founding, we show both commonalities and differences among social ventures. We find that social ventures are not homogeneous as previously treated in the literature. Furthermore, the data shows that the relationships among these four constructs can be captured by five archetypes: Government Support, Private Contributions, Product Sales, Service Offering, and Licensing and Franchising. The archetypes help explicate the differences between social and conventional ventures, as well as how social ventures endeavor to achieve their economic and social objectives. Because these organizations represent a specialized sample of social enterprises that develop and scale, it is these types of organizations that offer the greatest promise for effectively addressing social issues. Knowledge gained from a study of these organizations can be useful for informing the vast majority of social ventures that are neither sustainable nor scalable. The archetypes developed here are based on relatively successful ventures—as mentioned, over 90% of this sample was still operating through 2012. It thus follows that nascent social entrepreneurs can look to these archetypes for guidance.

Limitations and Future Research

Empirical studies on social ventures are plagued with the difficulty of obtaining data and sample selection (Short et al., 2009). This study attempts to overcome these limitations by using data from participants in the GSBI. While archival and interview data were obtained for each venture, sample selection was limited to those ventures with a manager who knew about, applied for, and was selected for the program. This GSBI selection process may bias the sample toward successful or more developed ventures. In this vein, the sample represents only ventures with access to knowledge about the program and the means to apply, which requires literacy skills and Internet access. Therefore, ventures in remote areas without much external contact, those with poorly educated management, or those without the means to apply for the program are eliminated from inclusion.

While we do not make claims as to the long-term effect of archetype choices, the sample does represent ventures able to acquire at least a minimum set of resources. Additionally, the GSBI program is limited to about 20 participants per year. As the program developed, however, competition increased; as a result, the later cohort may represent better prepared ventures. Despite these limitations, the study does capture an understudied aspect of social ventures: the ways social ventures seek their goals of economic and social value creation. The richness of the data allowed for the relationship between business models and social mission to emerge. The business model-mission relationship revealed in the study contributes to the growing body of literature on social ventures that seeks to understand how organizations embody more than economic goals.

One obvious area of investigation that is vital for social ventures is the extent to which business models and archetypes change over time. The rationale is that in most successful commercial ventures, business models tend to evolve over time as the nature of the marketplace and competitive environment change, and may need to be radically changed for survival or further growth (e.g., in the computer industry). We have anecdotal evidence from GSBI alumni that business evolution or radical change is equally likely in social ventures. It is possible that the S-curve is relatively flat for a longer period in the case of social ventures and that the time to "positive cash flow" and "break even" is longer (e.g., 7–10 years as opposed to 2–5 years for pure profit maximizing enterprises). An investigation to test this type of hypothesis will require a comparative study between social ventures and conventional firms.

The most significant area for investigation is the extent to which certain social venture revenue models scale more successfully than others. Such studies must focus on the unit economics of the social venture. Since social ventures balance social and economic dimensions, determining the economic success of such ventures may be less relevant than determining their social impact; thus, we must first determine how we define success in the social realm. A related area of inquiry has to do with the extent to which the different types of business models are associated with various measures of double or triple bottom line performance metrics. In particular, does higher social value creation necessarily reduce financial performance, require contributed capital for positive cash flow, or require greater patience on the part of investors? Similarly, these questions highlight the need for studies on the value chains required for each archetype, the key income and expense drivers in each value chain, and whether simple value chains are more sustainable or scalable than complex ones.

Social issues occur in every corner of the world. As organizations are imprinted with the context and conditions in which they are founded (Boeker, 1988; Stinchcombe, 1965), it follows that social ventures are imprinted with their locations as well. For one, the objective of the venture may be location dependent. For instance, some social issues are location dependent, such as Amazon forest conservation in South America or remote Internet access in rural locations. In addition, the social structure surrounding the venture may embody norms regarding the type of missions that are socially acceptable or legitimate (Carroll & Hannan, 2000). Thus, location is an important factor in the creation of a social venture. The extent to which the context of the venture is related to the business model or mission remains an open question.

CONCLUSION

It is perhaps the socialness of social ventures that makes them so interesting. The organization and strategy field has focused on the economic ends of firms, classifying organizations chiefly as for-profit or not-for-profit. Recently, however, extensions of corporate social responsibility and, most recently, social entrepreneurship are a refreshing complexity to the field. Although not a new phenomenon, our understanding of the social side of organizations is limited. Examining social ventures is a promising area of research with implications for both theory and practice. Our focus on the relationships among business models, mission, location, and founding year seeks to explicate some of the confusion surrounding social ventures. As social ventures continue to multiply and evolve, research into the nature of these social ventures should provide useful guidance to social entrepreneurs. We build on previous research by shifting the focus from the definition and recognition of the opportunity to the enactment of the opportunity—in this case, business model archetypes.

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SOCIAL ENTREPRENEURSHIP THAT TRULY BENEFITS THE POOR
AN INTEGRATIVE JUSTICE APPROACH

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Abstract. The phenomenal growth of social entrepreneurship over the last decade has ably demonstrated how technology, innovation, and an entrepreneurial spirit can afford better solutions to the vexing social and environmental problems of our time than can traditional aid and charity-based efforts. In most cases, but not always, the poor and disadvantaged have benefited from the growth of social entrepreneurship. In order to ensure that social entrepreneurship does indeed benefit the poor, it is imperative that there be normative guidelines for fair and just engagement with impoverished populations. A model that has been presented in the marketing and public policy literature is the integrative justice model (IJM) for impoverished populations. While the IJM was developed primarily in the context of multinational corporations (MNCs) operating in emerging markets, its applicability extends beyond MNCs. This article attempts to apply the IJM principles in the context of social entrepreneurship in order to provide social entrepreneurial organizations (SEOs) with a normative framework aimed at ensuring that the poor truly benefit from their activities. Based on this framework, the article suggests certain areas to which SEOs ought to be particularly attentive in their practice. The article also makes some suggestions for further research.

INTRODUCTION

In July 2010, the Oxford Poverty and Human Development Initiative (OPHI) of Oxford University and the Human Development Report Office of the United Nations Development Programme (UNDP) launched a new poverty measure called the Multidimensional Poverty Index (MPI) (United Nations Development Programme, 2011). The MPI uses the same three dimensions as the Human Development Index: Health, Education, and Living Standards. However, it shows the number of people who are multidimensionally poor, that is, those who suffer deprivations in 33% or more of the weighted indicators. The ten indicators considered are: Nutrition, Child Mortality, Years of Schooling, School Attendance, Cooking Fuel, Sanitation, Drinking Water, Electricity, Flooring, and Assets (Alkire, Roche, & Seth, 2013; Alkire & Santos, 2010). About 1.7 billion people in the 109 countries covered by the MPI live in conditions reflecting acute deprivation in health, education, and standard of living. Even in an affluent country like the U.S., about one in six people lives in poverty (Crary, 2011; U.S. Census Bureau, 2011).

A traditional approach to alleviating poverty in the developing world has been through development aid. This approach, however, though still supported strongly by some development economists such as Jeffrey Sachs (2005), has not met with much success in the fight against poverty. Rangan and McCaffrey (2004) argue that although trillions of dollars were expended by way of investment and aid to developing countries in a twenty-five year timeframe, hardly a dent was made in global poverty. Prahalad (2005: 3) echoes this position and points out that "for more than 50 years, the World Bank, donor nations, various aid agencies, national governments, and lately, civil society organizations have all fought the good fight, but have not eradicated poverty." Within this scenario, there have been two emerging trends in low-income markets, characterized as the base or bottom of the pyramid (BoP) market. One is a growing interest of multinational corporations (MNCs) in this segment; the other is social entrepreneurship.

Evidence for the first trend is contained in "The Next Billions: Unleashing Business Potential in Untapped Markets" (World Economic Forum & Boston Consulting Group, 2009), a report released at the annual meeting of the World Economic Forum in 2009. Examples of MNCs that have ventured into the BoP market in recent years include *Unilever* (Prahalad, 2005; Rangan, Sehgal, & Rajan, 2007), *Cemex* (Prahalad, 2005; Segel, Meghji, & García-Cuéllar, 2007), *Kodak* (Dikkers & Motta, 2007), *Nestle* (Simonian, 2006), and *Proctor and Gamble* (Silverman, 2006). Historically, the limited purchasing power of the low-income segment acted

as a deterrent to the economic involvement of MNCs with this group (Prahalad, 2005). Thought of in classic "definition of a market" terms, the poor may have the desire for goods and services but they simply lacked sufficient ability to constitute a viable market segment. This financial hurdle was overcome by multiple analyses demonstrating that there was a profit potential in the BoP market (Hammond, Kramer, Katz, Tran, & Walker, 2007; Prahalad, 2005). For firms experiencing saturation in servicing many high and middle income markets, along with an excess in production capacity, seeking growth opportunities in the BoP market is a logical strategy from a business perspective (Christensen, Raynor, & Anthony, 2003; Hart, 2007; Johnson & Nhon, 2005; Prahalad, 2005; Schultz, Rahtz, & Speece, 2004).

Evidence of the second trend was the 2006 Nobel Peace Prize awarded to Muhammad Yunus and the Grameen Bank (Nobel Foundation, 2006). In their press release, the Nobel Prize Committee acknowledged the role that an innovative solution such as micro-credit plays in poverty elimination. Over the last few decades, there has been an increase in entrepreneurial and innovative solutions to some of the vexing social and/or environmental problems of our time.

In addition to the Grameen Bank that pioneered micro-credit, examples of organizations that have developed innovative solutions to social and/or environmental problems include *Husk Power Systems* (biomass gasification using rice husk, www.huskpowersystems.com), *Solar Sister* (women-centered direct sales network to bring solar technology to rural Africa, www.solarsister.org), *Gram Vikas* (integrated model of rural community development, www.gramvikas.org), and *Fundacion Paraguaya* (financially self-sufficient educational institutions, www.fundacionparaguaya.org.py), among many others.

Since its inception in 2003, and on through 2012, the Global Social Benefit Incubator (GSBI) at Santa Clara University in California has helped over 150 socially-minded entrepreneurs "to build sustainable, scalable organizations and solve problems for people living in poverty around the world" (http://www.scu.edu/socialbenefit/entrepreneurship/gsbi/). Ashoka, the organization that Bill Drayton founded in 1980 to support social entrepreneurs, has about 3,000 Fellows in over 70 countries (www.ashoka.org). Created by Jeff Skoll in 1999, the Skoll Foundation has driven large-scale solutions to the world's pressing problems. Over a period of 13 years, the foundation awarded more than $358 million, supporting around 97 social entrepreneurs and 80 organizations in five continents around the world (www.skollfoundation.org).

Academic interest in the field of social entrepreneurship has also grown substantially. An internet search conducted by Huybrechts and Nicholls (2012: 32) in March 2011 using EBSCO and Google Scholar identified about 75 articles and 23 books on the topic of social entrepreneurship. In addition, journals such as the *Social Enterprise Journal* (Emerald) and the *Journal of Social Entrepreneurship* (Routledge) were created to focus on the area of social entrepreneurship. There has also been a growing interest in social entrepreneurship as a career choice (Hodgson, 2012).

The first trend, namely that of MNC involvement in the BoP, offers on one hand the hope of a more inclusive capitalism and of empowering market segments that were previously kept at the periphery of economic development. However, on the other hand, given the historical exploitation of these segments by business entities, there is also a growing concern about the danger of greater exploitation of poor and disadvantaged populations. Such exploitative practices have included predatory lending, tainted insurance, unconscionable labor practices, and exorbitant rent-to-own transactions (Grow & Epstein, 2007; Hill, Ramp, & Silver, 1998; Karpatkin, 1999; Murphy, Laczniak, Bowie, & Klein, 2005; Young, 2006). In order to enhance fairness when engaging BoP populations, Santos and Laczniak (2009a) have proposed a normative ethical model labeled the *integrative justice model* (IJM) for business with impoverished populations.

The IJM is constructed using a normative theory building process from the discipline of philosophy and is comprised of ethical elements that ought to be present when fairly and justly marketing to the poor (Bishop, 2000; Santos & Laczniak, 2012). The key elements of the IJM have been derived from moral philosophy theories, corporate social responsibility frameworks, and religious doctrine.

I begin the remainder of this article with an elaboration of the IJM. I then highlight the foundational principles of Catholic social teaching, the religious doctrine from which the IJM elements are derived. The growth of the field of social entrepreneurship has been accompanied by a relatively high degree of uncertainty as to what constitutes its domain. I therefore draw on some current understandings of social entrepreneurship and suggest a working definition of a social entrepreneurial organization (SEO). The purpose of such a definition is to provide a basis for modifying the IJM so as to suggest principles that are more aptly suited to the context of social entrepreneurship.

As the focus of SEOs is on social impact, such a goal is considered an *a priori* good. As a result, it might appear that SEOs are exempt from the need for an ethical framework. But an end, however worthy and noble, can be pursued through means that might not be so. An ethical

framework therefore provides a basis for SEOs to ensure that the means they use are also ethical. To that end, I put forth some implications of the modified IJM for SEOs. I conclude by identifying limitations and making suggestions for further research.

THE INTEGRATIVE JUSTICE MODEL (IJM) FOR IMPOVERISHED MARKET SEGMENTS

As mentioned earlier, the entry of MNCs in the BoP presents the opportunity for greater involvement of populations that were previously kept at the periphery of economic development. However, owing to the constraints and disadvantages that people in these markets face, there is an increased possibility of exploitation of these populations. With the aim of developing an equitable and fair approach to marketing, especially when directed toward impoverished populations, Santos and Laczniak (2009a) propose a normative ethical framework labeled the "Integrative Justice Model" (IJM) for marketing to the BoP.

The IJM does not integrate different types of justice such as legal justice, procedural justice, etc. Instead, in the realm of distributive justice, it integrates the notions of fairness and equity as presented in various strands of thought in moral philosophy, management theory, and religious doctrine (Santos & Laczniak, 2009b, 2009a). These perspectives are:

1. Catholic social teaching;
2. Habermas' discourse theory;
3. Kant's categorical imperative;
4. Rawls' difference principle;
5. Ross' theory of duties;
6. Sen's capability approach;
7. Virtue ethics;
8. Classical utilitarianism;
9. Service-dominant logic of marketing;
10. Socially responsible investing;
11. Stakeholder theory;
12. Global sustainability; and
13. the Triple bottom line.

See Appendix A for a brief synopsis of these theories.

These perspectives, when examined together, reveal five key elements of "just" and "fair" markets especially when involving impoverished

populations (see Appendix B for the theoretical support of these elements and Appendix C for the IJM model). These five elements are:

1. Authentic engagement with consumers, particularly impoverished ones, with non-exploitative intent;
2. Co-creation of value with customers, especially those who are impoverished or disadvantaged;
3. Investment in future consumption without endangering the environment;
4. Interest representation of all stakeholders, particularly impoverished customers; and
5. Focus on long-term profit management rather than on short-term profit maximization.

While the above elements are not intended to be an exhaustive list of "just" and "fair" marketing with impoverished populations, they can be seen as distinct and symbiotic dimensions of what constitutes a "just" marketplace. These dimensions are not fragmented and isolated ones, but are rather to be considered in their entirety as interdependent and related characteristics. In the following section, I summarize Catholic social teaching, one of the frameworks on which the IJM is based.

CATHOLIC SOCIAL TEACHING

Catholic social teaching (CST) refers to the corpus of Church documents that relate to the Church's response and commitment to the social demands of the gospel in the context of the world (Santos & Laczniak, 2009b). A generally accepted starting point for the Catholic social tradition is Pope Leo XIII's encyclical in 1891 entitled *Rerum Novarum* which was a response to many of the social abuses that were taking place in the Industrial Revolution. The four foundational principles of the Church's social doctrine are: (a) the dignity of the human person, (b) the common good, (c) subsidiarity, and (d) solidarity (Pontifical Council for Justice and Peace, 2004).

The principle of human dignity affirms that human life is sacred and that human beings, by virtue of being created in God's image, have an inviolable dignity. Such dignity is not something that human beings acquire by their efforts but rather is an intrinsic part of what it means to be human. The principle of human dignity implies that all persons,

regardless of race, color, and creed, ought to be treated with full respect. Treating people as objects would be a violation of the principle of human dignity.

The second principle, namely that of the common good, is broadly understood as the overall social conditions that enable individuals or groups to attain their fulfillment more easily (Pontifical Council for Justice and Peace, 2004). Unlike the utilitarian approach, which focuses on the greatest good for the greatest number, the principle of the common good is geared toward the benefit of all. The principle implies that the goods of the earth have been given for all to use and therefore all people have a right to benefit from their use. This implication does not mean that the Church opposes private ownership—in fact, the Catholic Church has been a strong proponent of the right to private property, but it holds that all people should have equal access to the ownership of goods and property (John Paul II, 1991; Pontifical Council for Justice and Peace, 2004).

The third principle of subsidiarity refers to helping or supporting lower or subordinate levels to achieve their fulfillment while respecting their freedom. The word "subsidiarity" comes from the Latin *subsidium,* which means help. Thus, subsidiarity does not merely mean delegating power to lower levels but also creating structures that better enable the exercise of that power. A major implication of subsidiarity is that of participation in the common good.

The final principle, solidarity, affirms the intrinsic social nature of the human person. As Pope John Paul II (1988: 420) reminds us, solidarity is not just a "feeling of vague compassion or shallow distress at the misfortunes of so many people, both near and far. On the contrary, it is a *firm and persevering determination* to commit oneself to the *common good*." The principle of solidarity "expresses in summary fashion the need to recognize in the composite ties that unite men and social groups among themselves, the space given to human freedom for common growth in which all share and in which they participate" (Pontifical Council for Justice and Peace, 2004: 86).

The four foundational principles of CST mentioned above provide a helpful guiding structure to ensure that entrepreneurial initiatives do indeed benefit the poor. With regard to social entrepreneurship, the Catholic Church's support for this growing field is perhaps evident, though not explicitly mentioned, in Pope Benedict's third encyclical *Caritas in Veritate* (Benedict XVI, 2009). Simha and Carey (2012) utilize a hermeneutic approach and contend that the central message of Pope Benedict's encyclical supports social entrepreneurship endeavors.

A WORKING DEFINITION OF A SOCIAL ENTREPRENEURIAL ORGANIZATION (SEO)

The growth of social entrepreneurship over the last few decades has been accompanied by a relatively high degree of ambiguity about its defining characteristics and the elements that distinguish it from for-profit or non-profit enterprises. The Skoll Foundation defines social entrepreneurs as "society's change agents, creators of innovations that disrupt the status quo and transform our world for the better." However, many for-profit organizations would fit this definition too. As Martin and Osberg (2007) point out, confusion arises because "both the entrepreneur and the social entrepreneur are strongly motivated by the opportunity they identify, pursuing that vision relentlessly, and deriving considerable psychic reward from the process of realizing their ideas." What distinguishes social entrepreneurs from other entrepreneurs, however, is that social benefit and "social mission achievement" are the central concerns for social entrepreneurs (Kickul & Lyons, 2012). Martin and Osberg (2007: 35) define social entrepreneurship as having the following three components:

1. Identifying a stable but inherently unjust equilibrium that causes the exclusion, marginalization, or suffering of a segment of humanity that lacks the financial means or political clout to achieve any transformative benefit on its own;

2. Identifying an opportunity in this unjust equilibrium, developing a social value proposition, and bringing to bear inspiration, creativity, direct action, courage, and fortitude, thereby challenging the stable state's hegemony; and

3. Forging a new, stable equilibrium that releases trapped potential or alleviates the suffering of the targeted group, and through imitation and the creation of a stable ecosystem around the new equilibrium, ensuring a better future for the targeted group and even society at large.

After analyzing twenty definitions during the period 1997–2007, Zahra, Gedajlovic, Neubaum, and Shulman (2009: 522) suggest that "social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner." Zahra et al. (2009) identify three types of social entrepreneurs: Social Bricoleur, Social Constructionist, and Social Engineer. Social Bricoleurs focus on local social needs, Social

Constructionists introduce reforms and innovations to the broader social system, and Social Engineers introduce revolutionary change to address systemic problems within existing social structures.

Huybrechts and Nicholls (2012) point out that there are three features of social entrepreneurship which are common to most definitions. The first is the primacy of social and environmental outcomes over profit maximization. The second feature is an innovative mindset that is manifested in new organizational models and processes, and in new ways of framing societal challenges to arrive at new solutions to these challenges. The third feature is market orientation.

According to Huybrechts and Nicholls (2012), while those three features have perhaps been historically present in organizations, the recent acceleration in social entrepreneurial discourse arises from four main drivers. The first is an explosion of global challenges in areas such as "climate change and environmental degradation; inequality and poverty; lack of access to basic healthcare, clean water and energy; mass migration; international terrorism" (Huybrechts & Nicholls, 2012: 40). The second driver is the rise of social media which has increased global connectedness among people and increased the ability to identify and respond to social and environmental needs. The third driver is a redefinition of the role of the state, and the fourth is a growing challenge to sustain social organizations.

Analyzing a variety of definitions in the literature, Dacin, Dacin, and Tracey (2011) suggest four key factors that definitions of social entrepreneurship focus on. These are: (1) the characteristics of the individual social entrepreneurs; (2) their sphere of operation; (3) the processes and resources used by the social entrepreneurs; and (4) the mission of the social entrepreneurs. According to Dacin et al., the factor that holds the most promise for the field is the mission of the social entrepreneur: to create social value by providing solutions to social problems.

Based on the discussion above, and utilizing a term used by Mair, Battilana, and Cardenas (2012), I arrive at the following working definition:

> A social entrepreneurial organization (SEO) is one that aims at co-creating social and/or ecological value by providing innovative and lasting solutions to social and/or environmental problems through a process of empowerment and in a financially sustainable manner.

SEOs as understood by this definition could be for-profit, not-for-profit, cooperative, hybrid, etc.

A MODIFIED IJM FOR SEOS

While the primary focus of an MNC is the profit motive, that of a SEO is to provide innovative and lasting solutions to social and/or environmental problems. As such, there could be operational and organizational characteristics that differentiate a SEO from an MNC. In the following paragraphs, I discuss some of the differences so as to propose a modified IJM that is better suited to the context of SEOs.

In the original IJM, the first key element was authentic engagement with non-exploitative intent. In the case of SEOs, however, the issue of exploitative intent almost becomes superfluous. Such redundancy arises from the benevolent nature of most SEOs, a characteristic that is also true of charitable organizations. In contrast to MNCs that are largely focused on individual gain and profit, SEOs are oriented toward others and are focused on creating social value. This shift in focus reduces the chances of exploitation although it may not completely eliminate the possibility of exploitative occurrences.

A key differentiator between MNCs and SEOs is that, in the case of the latter, social impact is the primary focus. Although MNCs may create social wealth, such creation is often a by-product of the process of economic value creation unlike in the case of SEOs where social value creation is the primary objective (Seelos & Mair, 2005). This perspective, however, then creates the problem of distinguishing non-profit SEOs from other non-profit enterprises because all of these organizations are focused on social impact and social value creation. A key differentiator between non-profit SEOs and other non-profit organizations is that the former seeks to empower its beneficiaries, particularly those who are most disadvantaged or marginalized. According to Müller (2012), Grameen Bank was able to empower women through microloans and to build on the resource pool of ideas, motivation, and skills that these women already possessed.

Müller (2012) distinguishes between the business models of social entrepreneurs, commercial entrepreneurs, and traditional non-profit organizations along three dimensions: value proposition, value architecture, and revenue model. According to Müller (2012: 116), "the social entrepreneur's value proposition is typically linked to mitigating social or environmental problems"; "they want to eliminate the root cause of the problem." This latter point perhaps distinguishes SEOs from traditional non-profits that also work in the same problem areas but usually focus more on providing instant relief (a BandAid) rather than on solving the root cause of the problem. So, for instance, a soup kitchen does a yeo-

man service in providing food to people who do not have food for their sustenance. However, the soup kitchen does not enquire into the reasons why people who benefit from their services do not have food to eat, and if something can be done about their situation. These are inquiries SEOs would typically make and act upon.

Co-creating value that is aimed at solving root causes of the problems of poverty implies collaborating with those affected by poverty in order to determine those root causes, as well as to devise solutions and then deliver them. An organization that exemplifies this approach is Gram Vikas, a social enterprise and rural development organization headquartered in Orissa, India (Pless & Appel, 2012). Gram Vikas' success is driven by the concept of 100% inclusion that involves "participatory decision making processes, shared responsibility taking and equal opportunities" (Pless & Appel, 2012: 389). The inclusion of the various stakeholders, and particularly disadvantaged groups, in the entire value creation process results in each of these groups assuming ownership of the solution and its delivery. Such an approach has a greater possibility of being sustained over a longer period of time, as Gram Vikas's longevity illustrates—it has been 34 years since its formal registration in 1979 (Pless & Appel, 2012).

In the first editorial essay for the *Journal of Management for Global Sustainability* (*JMGS*), the editorial board emphasized that global sustainability "involves the creation and maintenance of a world that works for everyone with no one left out" (Stoner, 2012: 3). The phrase "sustainable ecosystems" used in the IJM proposition conforms to the understanding of global sustainability that the *JMGS* editorial board puts forth, and not to the narrow interpretation of the words "sustainable" or "sustainability" as referring to a call for "continuing and unending business success." Creating a sustainable ecosystem implies fostering conditions that would enhance human and ecological flourishing not just in the present but also in the future.

Hockerts (2010) hopes that future research in the area of social entrepreneurship will shift the focus from the individual and the organization to sectoral phenomena. The creation of sustainable ecosystems would support such a shift in focus but would also require cross-sectoral collaboration. To elaborate, it is not sufficient for a SEO to focus on a single aspect of poverty because poverty has various dimensions that are often inter-related. Creating a sustainable ecosystem would require individual SEOs to collaborate not just within their sector but also across sectors. Montgomery, Dacin, and Dacin (2012) term such collaboration "collective social entrepreneurship."

With respect to interest representation, it is important for the enterprise to consider the interests of all its stakeholders and to take these into account, whatever the organizational form might be—whether a MNC, traditional non-profit, or SEO. Interest representation of stakeholders does not imply balancing the competing claims of these stakeholders but rather is aimed at giving due consideration to the interests of all in such a manner that no stakeholder is disadvantaged.

Many development aid efforts did not achieve their intended purpose because the interests of the poor clients were often not represented (Rangan & McCaffrey, 2004). Interest representation of all stakeholders can better take place if there is participation of stakeholders at different levels. This approach was the one Gram Vikas adopted through its participatory decision-making (Pless & Appel, 2012).

As SEOs are mostly long-term oriented, the issue of short-term profit maximization does not usually arise. At the same time, it is important for the SEO to be financially viable and sustainable as an institution over time. While financial viability might be attained through the procurement of funds (contributed income) or through commercial activities (earned income), an important consideration needs to be the efficient utilization of resources. Outcomes measurement and social impact assessment are tools that are gaining significance in helping SEOs be more financially effective and efficient.

Based on the discussion in the preceding paragraphs, I suggest replacing the "nonexploitative intent" component of the first IJM element with "empowerment particularly of disadvantaged groups." Likewise, the second IJM element should be modified to include social and/or environmental value creation that is aimed at solving root causes of problems. Furthermore, the third IJM element should be modified from "investing in future consumption, without endangering the environment" to "creation of sustainable ecosystems." The fourth and fifth IJM elements do not need much modification. Interest representation of all stakeholders is true for MNCs and SEOs. In the case of SEOs, the fifth element can focus on financial viability. Table 1 compares the IJM elements for MNCs and SEOs.

IMPLICATIONS OF THE IJM APPROACH FOR SEOS

An often-heard criticism of normative approaches is that they are often too general to be of practical use to managers (Marcoux, 2000). To respond to that criticism, Santos and Laczniak (2012) propose decision

principles for each of the IJM characteristics that MNC managers can use as valuable markers in their decision making (see Appendix D). It is beyond the scope of this article to engage in a similar exercise for SEOs. Such an endeavor is something I propose to undertake in the not too distant future. However, based on the IJM, we can generate a checklist of areas that SEO managers ought to consider.

	IJM for MNCs	**IJM for SEOs**
1	Authentic engagement with consumers, particularly impoverished ones, with non-exploitative intent	Authentic engagement aimed at empowerment particularly of disadvantaged groups
2	Co-creation of value with customers, especially those who are impoverished or disadvantaged	Social and environmental value co-creation aimed at solving the root causes of problems associated with poverty
3	Investment in future consumption without endangering the environment	Creation of sustainable ecosystems through a process of innovative social change
4	Interest representation of all stakeholders, particularly impoverished customers	Interest representation of all stakeholders, particularly impoverished and disadvantaged segments.
5	Focus on long-term profit management rather than on short-term profit maximization	Financial viability and sustainability

Table 1: Comparison between the IJM elements for MNCs and SEOs

Empowerment is a key differentiator between SEOs and non-profit or other social enterprises. A key test for SEOs is to determine whether their processes are aimed at empowering those whom they engage, particularly disadvantaged segments. If the pioneering social entrepreneurs and managers of SEOs still want to maintain the locus of control, then this desire is a likely indication that the SEO might not be organizationally sustainable.

As the majority of SEOs are involved with impoverished populations, it is tempting to assume a paternalistic stance in arriving at solutions

to the problems facing this population. However, the key to sustainable SEO ventures will be to assume an attitude of humility and to help impoverished populations come up with their own solutions. Such an approach will ensure that the ownership of SEO initiatives resides with the impoverished segment.

Furthermore, cross-sectoral collaboration or "collective social entrepreneurship" (Montgomery et al., 2012) requires humility and is essential for creating sustainable ecosystems. If social entrepreneurs or managers of SEOs are unwilling to participate in collective social entrepreneurship and are instead totally focused on their individual enterprise, then the likelihood of their initiatives being sustainable over time is reduced. Creating sustainable ecosystems requires social entrepreneurs and SEOs to focus on the bigger picture and the common good rather than on their own individual efforts.

Because many social entrepreneurs emerge from local contexts, it is perhaps easier for them to consider the interests of some of the more obvious stakeholders in their local communities. What might be a challenge is to take into account the interests of other stakeholders outside their immediate locales, such as investors or the government. However, as SEOs scale, this challenge might extend to other members of local communities as well. Therefore, it might be imperative for SEOs to devise ways of being more intentional in representing the interests of all their stakeholders, broadly defined.

A major task for SEOs is to be financially sustainable. As SEOs often project an entrepreneurial mindset that is oriented towards the earned income approach, there are reduced possibilities of procuring funds from philanthropic sources. In addition, as SEOs often work in challenging environments, their earned income models are mostly limited by the financial constraints facing their target group. SEOs have to navigate this space and develop innovative ways of being financially sustainable over the longer run.

Finally, the IJM elements are not isolated and fragmented principles, but are rather inter-related ones. Therefore, it is important to consider all five of these characteristics while evaluating the functioning of the SEO. It is the expectation that SEOs that score high on all five elements will indeed benefit their primary target group, the poor, and do so in ways that will reduce the numbers of those in poverty in future generations. Of course, such validation is the task of future research.

From the discussion in the preceding paragraphs and based on the IJM for SEOs, I propose the following points that SEO managers and executives ought to pay attention to:

- To what extent are our processes and functioning aimed at empowering the constituencies we engage?
- Is there a system in place for shared-control and succession planning?
- Do we co-create solutions with our target groups?
- To what degree do we collaborate with other SEOs—those within the same sector we operate in and those in other sectors?
- What is the composition of the decision makers? Are the voices of marginalized groups included in decision-making?
- How does our business plan ensure financial stability not just for the present but also for the foreseeable future?
- Do our approaches to reducing today's problems also reduce the likelihood of the same or similar problems in the future?

LIMITATIONS AND FUTURE RESEARCH

A major limitation of this article is that it takes a normative model that has been theoretically developed for another context, namely MNC involvement in BoP markets, and tries to modify that model for the context of social entrepreneurship. An alternative approach would have been to engage in a theory building process specific to the field of social entrepreneurship. The reasoning behind the choice of adapting the existing model rather than creating a new one was that the focus in both situations is to create win-win situations for all participants, particularly disadvantaged ones. As such, the derivation process would have been very similar and would have likely resulted in more or less similar elements.

A major contribution of this article has been to present a normative framework for SEOs with the aim of ensuring that the poor truly benefit from social entrepreneurial activities. While some are critical of the nor-

mative approach as lacking precise guidelines for implementation, such a framework does provide a much more solid basis for evaluating whether SEOs really do benefit the poor than is provided by a purely descriptive approach. That being said, it was not my intention to propose a normative framework in opposition to existing positive theories. I think both theories should and must complement each other. An excellent positive theory to date is that proposed by Filipe Santos (2012); that we share the same last name is purely coincidental. However, what might not be so coincidental, and in keeping with the nature of the field of social entrepreneurship, is future collaborative research between normative and positive theorists. Future descriptive research can evaluate the degree to which the functioning of SEOs conforms to the IJM characteristics. Future research can also attempt to operationalize the model for the context of SEOs.

CONCLUSION

According to Dees (2012), there are two cultures that are enmeshed in the development of social entrepreneurship—one is the culture of charity and the other that of problem-solving. Dees (2012) identifies five tensions that these cultures create: (1) spontaneous caritas vs. reasoning; (2) sacrifice vs. investment; (3) giving vs. markets; (4) relieving suffering vs. solving problems; and (5) caring for vs. empowering. Dees (2012) recommends five strategies to help align the two cultures. Two of these strategies are to engage supporters in problem-solving and to improve the affective positioning of problem-solving.

In a similar vein, Smith, Besharov, Wessels, and Chertok (2012) highlight the competing demands that the dual focus of social impact and financial sustainability place on managers of SEOs, and develop a theory of leadership for social entrepreneurship. Drawing on paradox research, they propose three meta-skills to help social entrepreneurs navigate these competing demands: acceptance, differentiation, and integration. "*Acceptance* involves acknowledging competing demands as an inherent part of organizations and learning to live with them. *Differentiation* focuses on recognizing the unique contributions of each alternative, whereas *integration* entails simultaneously addressing both alternatives and seeking synergies between them" (Smith et al., 2012: 466).

Undoubtedly, the dual focus on social and environmental impact and on financial sustainability as well as the two cultures of charity and problem-solving create challenges for SEOs. Those challenges call for the development of organizational paradigms that can enable manag-

ers in SEOs to be more successful in navigating among them. However, as we do develop such paradigms, an important question that we need to continually place before us is whether the poor, who are mostly the intended beneficiaries, are truly benefitting from these efforts. Such a focus is crucial because recent research is indicating that the poor are not always benefitting from MNC engagement in the BoP nor from all social entrepreneurial activities. For instance, Varman, Skalen, and Belk (2012) are critical of ITC's e-Choupal initiative in India. Likewise, Arora and Romijn (2011) hold that BoP initiatives make the big companies richer while adding a few pennies in the pockets of the poor. Furthermore, as these initiatives do not take into account the unequal power relations at the BoP, they can create power structures that further disadvantage the poor. In the context of social entrepreneurship, microlending, which gained prominence particularly after Muhammad Yunus received the Nobel Prize in 2006, is also coming under criticism. Ethnographic research by Karim (2011) is critical of microlending's claim of poverty reduction and of fostering entrepreneurial activity among the poor. While some might dismiss such research as being one-sided or as painting an overly pessimistic picture, it might instead be desirable to allow that research to motivate us to be more intentional in ensuring that social entrepreneurial efforts do indeed benefit the poor. It is hoped that the IJM for SEOs presented in this article provides an impetus for a more intentional engagement with impoverished populations that does indeed benefit them and the environment and thus helps fashion a more humane and sustainable world. Toward this end, the IJM approach calls upon SEO managers to pay special attention to certain areas such as empowerment, co-creation, interest-representation, and financial sustainability. Future longitudinal research can evaluate whether focusing on these areas does indeed help in ensuring that the poor benefit from the activities of the SEO.

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APPENDIX A: SYNOPSIS OF THEORIES (LACZNIAK & SANTOS, 2011)

Moral Philosophy and Religious Doctrine: Catholic Social Teaching

Catholic social teaching (CST) comprises the tradition of Papal, Church Council, and Episcopal documents that deal with the Catholic Church's response and commitment to the social demands of the gospel in the context of the world. At the heart of CST are four principles that are referred to as the permanent principles of the Church's social doctrine (Pontifical Council for Justice and Peace, 2004). These are: dignity of the human person, the common good, subsidiarity, and solidarity.

1. *Human dignity:* The Church affirms that human life is sacred and human beings, by virtue of being created in God's image, have a certain "inviolable dignity." Therefore, all human persons, regardless of race, color, and creed, possess an inherent dignity of being in the likeness of God, and therefore, righteously, should be accorded full respect.

2. *The common good:* In its broad sense, the common good is understood as the social conditions that enable individuals or groups to attain their fulfillment more easily. Furthermore, each person should have access to the level of well-being necessary for his [or her] full development.

3. *Subsidiarity:* Basically, this principle holds that a greater or higher association should not do what a lesser and subordinate organization can do. The word *subsidiarity* comes from the Latin *subsidium* which means help. Thus, the principle of subsidiarity refers to helping or supporting others while respecting their initiatives and capabilities.

4. *Solidarity:* This principle affirms the intrinsic social nature of the human person and the awareness of the interdependence between individuals and peoples. Solidarity is a firm and persevering determination to commit oneself to the common good.

Moral Philosophy and Religious Doctrine: Habermas' Discourse Theory

The German philosopher Jürgen Habermas (1990) proposed that instead of postulating *a priori* moral norms, such as Kant's categorical imperative, one should arrive at these norms through a process of practical

discourse. Habermas' discourse theory features moral agents who strive to put themselves in each others' place. Fairness, in discourse theory, is achieved by putting oneself in the place of every other party. Discourse theory, thus, places empathy and dialogue at the heart of the process for arriving at a reasoned agreement of what constitutes a valid moral norm (McCarthy, 2001; Nill & Schultz, 1997).

Moral Philosophy and Religious Doctrine: Kant's Categorical Imperative

The philosopher Immanuel Kant is well-known for his duty based theory of ethics. For Kant, acting out of duty is not contingent upon potential outcomes but rather is based on adhering to fundamental laws that can be rationally designated as universal maxims. Kant (1785) called such a fundamental law the "categorical imperative," or the supreme principle of morality, and proposed the following three formulations:

1. Act only on maxims that you will to be universal laws of nature.
2. Always treat the humanity in a person as an end and never as a means *merely*.
3. Act as if you were a member of an ideal kingdom of ends in which you were both subject and sovereign at the same time.

Moral Philosophy and Religious Doctrine: Rawls' Difference Principle

The influential Harvard philosopher John Rawls (1971) uses a thought experiment called the "original position" to arrive at a conception of justice that should be acceptable and fair to all. In this position, individuals do not know in advance their future status in society (i.e., class position or social status, wealth, intelligence, strength, and so on). Rawls calls this condition a "veil of ignorance." Rawls (1999: 266) proposes that in this "original position," free and rational persons, wanting to further their own interests and at the same time wanting to minimize their social risk (as they do not know in advance what their "revealed" status will be), would arrive at two moral principles. These are:

1. Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all; and

2. Social and economic inequalities are to be arranged so that they are both (a) to the greatest benefit of the least advantaged, and (b) attached to offices and positions open to all under conditions of fair equality of opportunity.

The first part of the second principle is also known as the *difference principle*.

Moral Philosophy and Religious Doctrine: Ross' Theory of Duties

The Scottish-born moral philosopher Sir William D. Ross held that there are certain principles that we know intuitively because they are self-evident. Ross (1930) calls these principles *prima facie* (meaning at first sight) duties and lists six such duties. They are duties of (1) fidelity, (2) gratitude, (3) justice, (4) beneficence, (5) self-improvement, and (6) nonmaleficence.

Moral Philosophy and Religious Doctrine: Sen's Capability Approach

The Nobel Laureate Amartya Sen (1999) advocates broadening the framework of development economics. For Sen, economic growth should be considered not merely in monetary terms such as gross domestic product (GDP), aggregate income, or supply of goods and services, but in perspectives that involve expanding the capabilities, entitlements, and freedoms of people. According to Sen (1999: 75), a person's capabilities specifically refer to "the alternative combinations of functionings that are feasible for her [or him] to achieve." A capability then is "a kind of freedom: the substantive freedom to achieve alternative functioning combinations." Sen (1999: 17) considers the expansion of freedom the primary end as well as the principal means of development. The view of freedom here is one that "involves both the processes that allow freedom of actions and decisions and the actual opportunities that people have, given their personal and social circumstances." Sen (1999: 10) lists five distinct types of instrumental freedoms that are interconnected and complementary. These are: (1) political freedoms; (2) economic facilities; (3) social opportunities; (4) transparency guarantees; and (5) protective security. Each of these freedoms advances the general capability of a person.

Moral Philosophy and Religious Doctrine: Virtue Ethics

Virtue ethics is one of the oldest moral frameworks and focuses on the virtues and the perfection of personal character. A prominent and contemporary proponent of the virtue ethics tradition is the philosopher Alasdair MacIntyre. Virtues, according to MacIntyre (1984), are acquired

human qualities that help develop personal character. While there is disagreement on the list of virtues, in the context of linking virtue ethics to international marketing, Murphy (1999: 113) proposes five core virtues that an ethical business organization should possess: (1) integrity, (2) fairness, (3) trust, (4) respect, and (5) empathy. Taken together, these virtues provide a helpful benchmark for what constitutes a virtuous firm.

Managerial Frameworks: Socially Responsible Investing

In the wake of corporate scandals in recent years, companies are beginning to realize that a substantial number of investors are not interested solely in the financial performance of a company—they are also concerned about social and environmental issues. According to the Social Investment Forum (2006), socially responsible investment (SRI) assets in the United States rose more than 258% from $639 billion in 1995 to $2.29 trillion in 2005. At the same time, the question of whether or not socially responsible firms outperform those that are not has not yet been definitively answered, if it ever can be. Vogel (2005: 42), for instance, reviewed academic studies of the relationship between profitability and social responsibility and concluded that there is "little support for the claim that more responsible firms are more profitable." However, the fact that SRI assets over a ten year period from 1995 to 2005 increased four percent faster than the entire universe of managed assets in the United States is indicative of a marked shift in investor preferences (Social Investment Forum, 2006). This return level is also indicative of the notion that SRI is not the naive financial strategy that some of its early critics made it out to be (Glassman, 1999).

Managerial Frameworks: Stakeholder Theory

In contrast to *shareholder* theory which holds that a firm's exclusive responsibility is to its shareholders (Friedman, 1962, 1970), stakeholder theory maintains that a firm has a responsibility to other constituencies that have a stake in it (Freeman, 1984). Freeman, Harrison, and Wicks (2007) define a stakeholder as "any group or individual who can affect or is affected by the achievement of a corporation's purpose" (p. 6) and point out that "value creation is a joint process that makes each primary stakeholder better off" (p. 52). In other words, there does not have to be any trade-off involved, meaning that the interests of some stakeholders do not have to be sacrificed in favor of the interests of other stakeholders. For the interests of stakeholders to be better served, Freeman, Harrison, and Wicks (2007: 112) recommend that managers should "put

themselves in the stakeholder's place and try to empathize with that stakeholder's position."

Managerial Frameworks: Global Sustainability Perspective

With the growing awareness of climate change and global warming, there is a temptation to limit thinking about the scope of sustainability to just the threats to the environment. However, as the Copenhagen Declaration at the 1995 World Summit on Social Development pointed out, "economic development, social development, and environmental protection are interdependent and mutually reinforcing components of sustainable development" (United Nations, 1995). This understanding was further developed at the 2002 World Summit on Sustainable Development at Johannesburg which stated that "poverty eradication, changing consumption and production patterns, and protecting and managing the natural resource base for economic and social development are overarching objectives of and essential requirements for sustainable development" (United Nations, 2002). This journal, of course, joins many sustainability experts and leaders in taking a broad, encompassing, and integrative view of the inherent nature of global sustainability.

Managerial Frameworks: Triple Bottom Line

A prominent advocate for the Triple Bottom Line (3BL) concept is John Elkington (1998). The 3BL approach basically calls for an enlarged mindset that moves from an exclusive focus on financial measures and toward considering the social and environmental aspects of the business as well. While current profits are an indicator that a business may be functioning well in the economic domain, a preoccupation with short-term financial returns can ironically act against the long-term interests and survival of the corporation. A mania by management concerning short run financial hurdles can, in numerous cases, reduce the ability of the firm to position itself advantageously for future business opportunities, create resentment among stakeholders, and engender costly regulation.

APPENDIX B: THEORETICAL SUPPORT FOR IJM PROPOSITIONS (LACZNIAK & SANTOS, 2011)

Proposition: Authentic engagement with consumers, particularly impoverished ones, with non-exploitative intent

Theory:

- Catholic Social Teaching [common good, human dignity, solidarity]
- Kant's Categorical Imperative [1st and 2nd formulation]
- Ross' Theory of Duties
- Service-Dominant Logic of Marketing
- Virtue Ethics

Proposition: Co-creation of value with customers, especially those who are impoverished or disadvantaged

Theory:

- Catholic Social Teaching [human dignity, subsidiarity]
- Habermas' Discourse Theory
- Kant's Categorical Imperative [3rd formulation]
- Service-Dominant Logic of Marketing

Proposition: Investment in future consumption without endangering the environment

Theory:

- Catholic Social Teaching [common good, human dignity]
- Classical Utilitarianism
- Sen's Capability Approach
- Service-Dominant Logic of Marketing
- Sustainability Perspective

Proposition: Interest representation of all stakeholders, particularly impoverished customers

Theory:

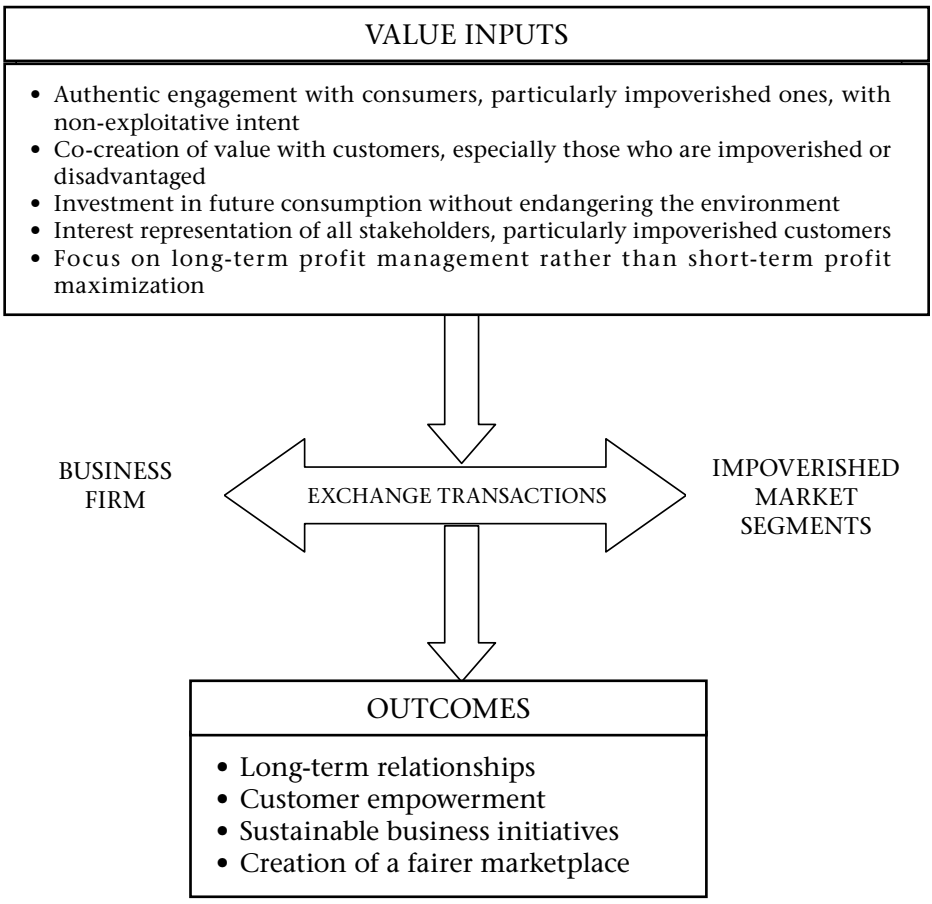
- Catholic Social Teaching [common good, subsidiarity]
- Classical Utilitarianism
- Habermas' Discourse Theory
- Kant's Categorical Imperative [2nd formulation]
- Rawls' Difference Principle
- Service-Dominant Logic of Marketing
- Stakeholder Theory
- Global Sustainability Perspective

Proposition: Focus on long-term profit management rather than short-term profit maximization

Theory:

- Catholic Social Teaching [common good]
- Classical Utilitarianism
- Service-Dominant Logic of Marketing
- Socially Responsible Investing
- Triple Bottom Line
- Global Sustainability Perspective

APPENDIX C: AN INTEGRATIVE JUSTICE MODEL FOR IMPOVERISHED MARKETS (SANTOS & LACZNIAK, 2009A)



APPENDIX D: IJM DECISION PRINCIPLES FOR MNC MANAGERS (SANTOS & LACZNIAK, 2012)

IJM Element 1: Authentic engagement with non-exploitative intent

a. Develop trust with customers at all levels.

b. Build competitive advantage through a process of collaboration rather than focusing on eliminating competition.

c. Subscribe to a long-term perspective which holds that improving the quality of society and the environment is to the benefit of all.

d. Never take advantage of the relative weaknesses of customers. Instead, the company should make maximum efforts, using its own relative strengths to relieve these shortcomings, so that the consumer experience is enhanced. In effect, companies ought to build a trustworthy reputation for fair dealing, dependability, and continuous care.

e. Encourage employee volunteering, particularly in impoverished neighborhoods.

f. Foster social sustainability while ensuring profitability in the long run.

g. Support the formalization of consumer rights that guarantee safety, redress, sufficient information, and other basic requirements of exchange fairness.

IJM Element 2: Co-creation of value

a. Instead of autonomously positing what constitutes value for impoverished consumers, involve such consumers in the value-creation process itself.

b. Use resources to ensure that the company's fairly priced offering proposes what is of best economic value for its targeted impoverished customers.

c. Engage in a co-creation process that fosters sustained partnerships and develops mutual trust with impoverished customers that extends beyond the consumption of the product or service.

d. Leverage local innovativeness and actively seek ways in which impoverished customers can participate in the value co-creation process.

e. Constantly seek input from the company's impoverished customers either directly or through observation, and incorporate this feedback into decision-making processes.

f. Consider ways in which impoverished customers can be given an ownership stake in the company.

g. Partner with local NGOs so as to leverage the expertise, goodwill, and network of the NGOs in a mutually advantageous manner.

h. Collaborate with the local community so as to tap into the social networks they constitute.

IJM Element 3: Investment in future consumption

a. Invest in research and development aimed at developing innovations for impoverished markets that are both socially beneficial and environmentally friendly.

b. Strive to increase the capabilities of impoverished segments to ensure that these impoverished segments can better participate in the market economy.

c. Pay employees a living wage to ensure that they can contribute to the overall economy of which the firm is also a part.

d. In the conception, production, and delivery of goods or services, strive to ensure that the ecological footprint is minimized.

e. In keeping with an emerging global sustainability perspective, a business firm in impoverished markets ought to afford access to products and services (e.g., leasing or sharing) rather than focus on ownership of these.

IJM Element 4: Interest representation of all stakeholders

a. Consider what matters to the company's stakeholders and what is to their advantage. Furthermore, demonstrate through business policies and ethical audits that such accommodations have indeed taken place.

b. Treat impoverished customers as primary stakeholders since they have a continuing and essential interest in the firm, and are also vital to the growth and survival of the business initiative once a commitment to target this segment is made.

c. Encourage employees to have first-hand experience of the real world of low-income consumers.

d. Ensure that promulgated decisions, actions, and procedures do not further disadvantage impoverished customers.

e. Engage in dialogue with impoverished customers about the company's products and services to ensure a greater likelihood of the customers' interests being taken into account.

f. Make efforts to understand the difficulties and constraints faced by impoverished customers and try to alleviate these so as to enhance the overall consumer experience. This strategy might involve investing in education, health care, sanitation, and access to credit that expand the capabilities of impoverished consumers and enable a richer firm-consumer relationship.

g. Include consumer education and counseling as part of the marketing strategy to ensure better representation of the long-term interests of impoverished customers and to enable customers to make better informed choices.

h. Develop and promote products and services that are especially relevant to the impoverished market segment.

i. Enable impoverished customers to have better access to the market in order for them to better participate in the market economy.

j. Make the company's products and services affordable, accessible, and available.

k. Ensure that information about the company's products and services is easily understood by its impoverished customers.

IJM Element 5: Long-term profit management

a. Instead of seeking to maximize financial returns in the short run, aim at creating sustainable value in the long run.

b. Consistent with the role of a social as well as an economic institution, consider social goals as ends in themselves rather than as means to a financial end.

c. Increase business success with a long-term perspective based on social, environmental, and financial returns.

d. View impoverished markets as sources of opportunity, innovation, and competitive advantage.

e. Support local communities in their holistic development in terms of supporting education, health, sports, the arts, etc. at a scale and focus befitting the local community and culture.

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FRUGAL INNOVATION
CORE COMPETENCIES TO ADDRESS GLOBAL SUSTAINABILITY

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Abstract. The call for global sustainability is echoed by societal, environmental, and economic needs across the globe. In answering this call, a design innovation process that properly considers the needs and context of citizens in the developing world is necessary in order to develop appropriate, adaptable, affordable, and accessible solutions, products and services. This process, called "Frugal Innovation," is rapidly becoming a standard against which sustainable solutions are assessed. Through an exploration of Frugal Innovation Core Competencies (*Frugal Innovation Lab, Santa Clara University*), and corresponding case studies of field solutions, a model is presented to begin sustainably addressing global human needs.

INTRODUCTION: A CALL FOR GLOBAL SUSTAINABILITY

Global sustainability is intimately related to societal, environmental, and economic equity. When seeking sustainable solutions to global challenges, it is critical that all inhabitants be treated with equity. From a moral or a business standpoint, equity is inextricably linked to sustainable, globalized solutions. World hunger, poverty, social injustice, and general lack of resources that afflict billions of people are all important aspects to consider when ideating for large-scale sustainability solutions.

In answering the call for global sustainability, we present the concept of Frugal Innovation. Frugal Innovation is a design innovation process in which the needs and context of citizens in the developing world are put first in order to develop appropriate, adaptable, affordable, and accessible services and products for emerging markets. Social enterprises are built around the idea of Frugal Innovation and entrepreneurship to solve sustainability challenges in Bottom of the Pyramid (BOP) markets. In the past, the BOP—or those 4 billion people who live on less than an average of $5 a day—have not been the focus of innovative energies. Frugal Innovation inverts conventional views to empower and enable the BOP (see Figure 1). The balance of economic power is expected to shift dramatically over the next half century, with fast-growing emerging market economies accounting for an ever-increasing share of global output (Johansson et al., 2012). The United States is expected to cede its place as the world's largest economy to China as early as 2016. India's GDP is also expected to pass that of the United States over the long term. These two Asian giants combined will soon surpass the collective economy of the G7 nations. Fast-aging economic heavyweights, such as Japan and the Euro area, will gradually lose ground on the global GDP table to countries with younger populations like Indonesia and Brazil. Given this seemingly indisputable trend, Frugal Innovation has blossomed to target these underserved populations, encouraging entrepreneurship and sustainable growth for all participants. Most developed countries have failed to embrace a frugal approach in the past, and the world is seeing resource shortages, environmental damage, and a plethora of other negative consequences as a result of the conventional approaches to product and service innovation.

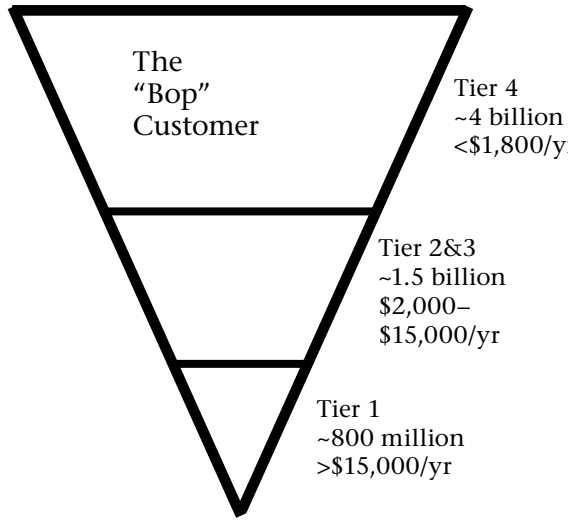

Figure 1: Inverted Pyramid

The 10 Core Competencies of Frugal Innovation were developed by the Frugal Innovation Lab at Santa Clara University. The 10 Core Competencies are:

1. ***Ruggedization***
2. ***Lightweight***: portable for varying transportation options
3. ***Mobile Enabled Solutions***: connectivity anytime, anywhere
4. ***Human Centric Design:*** easy-to-use, intuitive designs that require little to no prior knowledge or training to utilize
5. ***Simplification***: minimalist features and functional requirements
6. ***New Distribution Models:*** non-conventional channels and access.
7. ***Adaptation:*** leveraging existing products, inputs and services

8. ***Use of Local Resources:*** sourcing without importing equipment or materials
9. ***Green Technologies***: powered by renewable resources
10. ***Affordability:*** low input and operation costs

These 10 core competencies are rapidly becoming a standard for developing appropriate, affordable, adaptable, and accessible solutions and assessing an innovation's adequacy and readiness for successful market penetration. The competencies form the basis for making powerful contributions to a more global sustainability, including greater inclusiveness and social equity. Their role in evaluating new technologies and processes for consumers in emerging economies will enable them to become increasingly important and influential in the global market landscape within the next 5–10 years.

To illustrate each of these competencies, we present brief case studies that depict tangibly how each one of the competencies has been applied to product and service innovation. These innovations were all created with the intention of developing sustainable solutions that address immediate needs while integrating a long-term outlook. When scaled, these solutions can contribute to a more sustainable world by aiding the efforts to end global poverty, world hunger, and social injustice, and to protecting the capacity of the planet to support our own and other species. Initially, direct benefit will be readily apparent; however, the potential for far-reaching, positive domino effects as a result of the proper implementation of these innovations is also tremendous.

The following cases explain the process of generating positive change via Frugal Innovation; we hope they will also motivate readers to take action by engaging with—and embracing—the opportunities to make similar innovative and valuable contributions in emerging markets. Frugal Innovation prioritizes the needs of all stakeholders of business, including the end consumers, the environment, and future generations. By focusing on *how* we produce and consume, social, environmental, and economic sustainability can become a global reality.

THE 10 CORE COMPETENCIES OF FRUGAL INNOVATION

The importance of Frugal Innovation lies partly in its ability to be economically efficient under conditions of severe scarcity. Frugal Innovation opens a door for developing country entrepreneurship and innovation through its recognition of, and emphasis on, the im-

portance of home-country involvement. By restructuring traditional business models, designs that are frugally innovated meet demand that is already present, ensuring a certain amount of viability from the initiation of a project (Zeschky, Widenmayer, & Gassman, 2011). Frugal Innovation uses innumerable aspects of the domestic marketplace to generate affordable and *applicable* innovations for use by consumers, including those who are at the BOP.

Characteristics	**Frugal Innovation**	**Conventional Innovation**
Driver	What do they need	What would be nice to have
Process	Bottom-up	Top-down
Core Capabilities	Functionality—rugged, lightweight, adaptable, simple	Desirability and design
Location	Developing, Emerging Markets	Developed Markets

Figure 2: Alternative Models of Innovation

The idea of "Reverse Innovation" is a crucial one to consider in responding to global sustainability goals. While related to Frugal Innovation, Reverse Innovation is the concept of taking ideas that have been developed in an emerging market and coaxing them to flow uphill to Western markets. Implicitly, Reverse Innovation can be seen as benefiting primarily consumers in developed countries who benefit from less expensive products and services pioneered in developing countries. Frugal Innovation emphasizes how innovations can be created for resource-constrained environments, the direct benefits to BOP members, and the role that can be played by the populations at the BOP. Those BOP innovators seek opportunities for growth and advancement and become an important source of the innovations from which they will benefit and that may also be transferred to more developed countries. Given this potential for knowledge and technology acquisition sourced from the developing world, developed countries' business leaders have begun to adjust their existing business models to incorporate value-adding intelligence from these emerging economies (Baiyere, 2011).

Health care is a prime example of how options generated for emerging markets can play a significant role in reshaping how health care is administered in developed nations. For instance, such reverse innovations include GE's electrocardiograph (ECG) machine, which typically weighed 15 lbs. and cost $5.4 million. In 18 months, GE was able to

engineer the same functionalities to fit into a portable handheld device for about 60% of its wholesale cost. Combining their technical know-how with existing parts, GE engineers were able to adapt a printer that is used in bus terminal kiosks across India to serve the needs of the new ECG machine. The net effect is a reduction from $2,000 to $800 for an ECG machine, which translates to under $1 per patient per scan. This lower cost ECG is not only relevant to the audience that it was developed for—expanded access to affordable ECGs in the developed world is critical as well. There is a broadening two-way avenue of innovative ideas being built between the developed and developing world that holds the potential to elevate both in a positive direction.

Generally speaking, developing countries have lower living standards, less developed industrial bases, and a low Human Development Index (HDI) when compared with developed countries (Sullivan & Sheffrin, 2003). Populations in developing countries have restricted access to products and processes that are readily available in developed countries, and for many reasons, including general misconceptions and immense market barriers (Prahalad, 2005). Addressing market demand through a Frugal Innovation approach improves BOP living conditions, creates new sources of growth and cost-saving opportunities, and provides access to innovation (Hart & Christensen, 2002). Frugal Innovation has the potential to elevate humanity as a whole by giving all individuals opportunities to be entrepreneurs and value-demanding consumers at the same time.

Given that global sustainability is so entwined with equity, it is significant that Frugal Innovation is so focused on inclusive innovation (defined as the inclusion of fundamental social responsibilities in strategy and operations management [Nijhof, Fisscher, & Looise, 2002]). In other words, Frugal Innovation has the potential for inclusiveness, starting with the area from which it originates. Innovation is truly inclusive when it is intended for the benefit of people universally, and is exclusive when it is aimed only at a particular segment of the population—i.e., a specific socioeconomic group (Prahalad & Mashelkar, 2010). Examples such as Gandhian engineering follow the purpose of "more from less for many" by moving from "low price, low performance" to "low price, high performance" (Altenburg & Lundvall, 2009). Alternately, Jugaad engineering focuses on utilizing makeshift materials that are available in the context of extremely limited resources (Tiwari & Herstatt, 2012).

Frugal Innovation is readily apparent in the 10 cases presented below. All of them are true examples of progress toward global sustainability, with Frugal Innovation lending an important helping hand in the success of the enterprises described therein.

Key Concept	Author(s)	Year	Example	Innovation Outcome
Reverse Innovation	Govindarajan & Ramamurti	2011	GE's ECG	Add bells and whistles to developing country innovation that competes in developed countries
Gandhian Engineering	Prahalad & Mashelkar	2010	Tata's Nano	Break down a complex process/product and rebuild in the most economical way
Jugaad	Radjou, Prabhu, & Ahuja	2012	YES BANK's CAT	Innovate with an eye toward economical efficiency but also social and environmental bottom-lines

Figure 3: Frugal Innovation Models

CORE COMPETENCIES & CASE STUDIES

Ruggedization: *designed for harsh physical environments (e.g., heat, moisture, pests)—ToughStuff: Durable Solar Panel Charging System*

The founders of ToughStuff International, Andrew Tanswell and Adriaan Mol, were inspired to help low-income families in the developing world by creating technologies that would assist in eliminating energy poverty (ToughStuff, 2010). ToughStuff's various solar-powered products, like its solar panel charging system, provide accessible, inexpensive solutions to energy poverty and allow for a better standard of living. Human development and emergency relief are two particularly important areas of focus for ToughStuff, and their products have been extremely effective in aiding progress in both arenas.

The solar panel charging system that ToughStuff developed can power LED lamps, mobile phones, and radios (Marlow, 2009). The system not only eliminates the recurring cost necessary to charge these critical, livelihood sustaining devices, but also the extensive time that is necessary to travel to charging stations. Able to charge at night from energy gathered and stored during sunlight hours, capable of withstanding extreme temperatures, and tested in deplorable conditions, the system has proven to be incredibly durable in all environments. Developing

world economies are fully able to use ToughStuff's systems reliably, easily, and effectively.

Engineering these solutions to be rugged required a conscious effort. Design and materials both contribute to the system's ability to operate in extreme environments. A thin sheet of amorphous silicon that uses sunlight to generate electricity makes the product both nearly indestructible, resulting in minimal maintenance costs, and incredibly easy to use, making it easier to market to lower income consumers (Trickle Out Project, 2012). The solar panels are flexible, waterproof, and relatively small, all of which address target customers' needs. These aspects are the essence of Frugal Innovation at its very core.

While ToughStuff has not encountered many road blocks in the development of its systems, ideas on how to disseminate their product in targeted areas of high need have been more challenging. However, despite various barriers to entry, over 125,000 units were sold in the first two months following the product's introduction, and it is now sold in more than 25 African countries (Ashden Award Judges, 2011). A large factor in ToughStuff's success has been the knowledge that its products can withstand the tribulations of the environments for which they were designed.

Lightweight: *portable for varying transportation options—Cisco and NetHope: Emergency NetReliefKit*

Working together, NetHope and Cisco have developed an emergency NetReliefKit (NRK), which can best be thought of as a "communications hub in a box" for NGOs operating in the field. The kit provides both voice communication and Internet links via satellite, and can be powered solely by a car battery. With built-in Wi-Fi, it is possible for a single NRK to effectively serve an entire facility. This has proven to be of incredible benefit during natural disasters by helping victims in remote areas (Musich, 2007), and is made possible by the NRK's light weight and consequent ability of NGOs to transport it easily.

One NRK contains all the equipment needed to coordinate the transport of large groups of people from one location to another in the event of an emergency, yet still fits in a backpack or small suitcase (Peck, 2010). It includes a Broadband Global Area Network (BGAN) satellite terminal, a fold-flat 48-watt solar power kit, a small laptop, an 8-hour battery, a carrying case, various cables, power adapters, and controllers. While it was designed with emergency relief in mind, some NGOs have adopted

the NRKs because of their incredible versatility and convenience for all communications needs. The NRK has revolutionized the way NGOs are able to operate on a day-to-day basis.

Given the quantity of equipment condensed into one unit, ensuring that the NRK was lightweight was a challenge (Wavelength, 2009). However, the joint experiences of both partners allowed for a progressive design process. NetHope, a nonprofit association of more than 25 NGOs (including Red Cross, World Vision, and Mercy Corps), relies on networking technology and Internet-based applications to keep in contact with each other during international emergencies, coordinate their responses more accurately, and quickly gather and disseminate critical information. Cisco in turn relies on networking technologies in an enterprise-wide fashion to ensure the safety of its employees on a global scale.

NRKs fuse these two areas of expertise together into a highly functional, four pound device that brings the larger world to the most remote and disconnected places on the globe (Nunziata, 2010). Units have already been critical in first response for disaster relief efforts in developing countries that have suffered major crises—the earthquakes in Haiti and Chile, and the cyclone that hit Bangladesh are three examples (Carless, 2007).

Mobile Enabled Solutions: *connectivity and effective instrumentation—Kopo Kopo: Mobile Money Platform*

The US-based software company Kopo Kopo partnered with Hope Micro and Splash Mobile Money in East Africa to invent a mobile money platform that allows customers to use mobile money services (Kopo Kopo, 2011). It is through this service that customers of the top three mobile networks can load money onto their mobile devices and send money, pay bills, withdraw money, and buy goods. These services release consumers from the constraints of having to travel long distances for financial transactions rather than investing their time in activities that will generate income for them. To do so, the services make use of a resource that already exists locally—mobile phones.

The Executive Director of Hope Micro, SD Kanu, realized that his customers were struggling with the opportunity cost of leaving their businesses for up to a full day to make payments for his mobile services (Microfinance Africa, 2011). The mobile money platform makes use of both Hope Micro and Splash Mobile Money services and is very conve-

nient for consumers. Kopo Kopo incorporates the transactions of these customers into its accounting software to enable analysis of buying trends, and sends SMSs to interact with customers. Though its target is East Africa, Kopo Kopo intends to expand its service outside of Sub-Saharan Africa where competition is minimal (Sandell, 2012).

The Kopo Kopo mobile money platform has done very well in Sierra Leone, Kenya, and the rest of East Africa. The platform is becoming a disruptive technology for traditional currency as more customers are turning to this mobile money service. Despite its success, however, Kopo Kopo has been led to develop plans for market expansion to various other locations due to extreme competition from other mobile money service providers. Kopo Kopo estimates that the market for mobile money systems will be roughly $630 billion by 2014 (Sinsky, 2011).

Human Centric Design: *easy-to-use, intuitive designs that require little to no prior knowledge or training to utilize—Naandi: Jerry Can for Safe Water Program*

Naandi, a charity working towards better health, basic education, and sustainable livelihoods for underprivileged people, has developed a Community Services Safe Water Program that allows villagers to drink and use clean water on a daily basis. By setting up a system that delivers safe drinking water at relatively low cost, villagers in Andhra Pradesh (Southeast India) are able to take responsibility for their attainment of clean water via an infrastructure that is easy-to-use. The jerry-can style container is a critical part of this infrastructure for clean water, as are the additional programmatic elements of the Naandi system that make the proposed solutions sustainable ones (Matthews, 2008).

To create a long-term reduction in exposure to environmental risks that lead to waterborne diseases, it is essential to market the importance of safe water. To that end, Naandi has developed intensive campaigns on health and personal hygiene to educate rural communities on the need to store water carefully, and to follow sanitation practices that avoid contaminating water resources. By influencing the integration of safe water practices into conventional behaviors, demand is created in other villages for adopting the SafeWater Program, which results in spreading the program to those new communities. Naandi also encourages the use of food-grade 20-liter jerry cans which they sell to customers at cost (~150 rupees or about $3). In some cases, Naandi will offer an installment payment plan for the jerry can to ease the upfront cash requirement (William Davidson Institute, 2009).

Each safe water operation employs a Safe Water Promoter (SWP), typically a woman from the local village community, who ensures that the villagers are aware of the services offered and who encourages transition to practices that make clean drinking water available. SWPs are also responsible for promoting hygienic sanitation practices among villagers through an Information, Education, and Communication campaign (IEC). When combined, these programs—SWP and IEC—develop a community-scale water infrastructure in which villagers have access to clean water at reasonable prices. In 2010, Naandi Community Water Services was present in over 400 villages, providing safe drinking water to 2.4 million people and distributing about 30 million liters each month at only $0.2 cents per liter (Vousvouras & Heierli, 2010). The programmatic and technological elements of Naandi's innovative approach are human-centric from every angle.

Simplification: *minimalist features and functional requirements—TATA Chemical: Rice Husk Water Filter*

In 2006, an innovation team started by R. Gopalakrishnan, the VP of Tata Chemicals, set out to develop a water purifier that was accessible, inexpensive, and highly effective (Lavallee & Veach, 2010). What emerged out of this team's collaboration was the Tata Chemical rice husk water filter (Swach) which purifies water without electricity in an inexpensive manner, making drinking water safe and accessible to households that have no access to power (Subbu, 2009).

While the technology was based on previous water-purifiers (making this water purifier an example of adaptability as well; see core competency #7), the team aimed to make it the "world's lowest-cost water purifier." Inspired by Edison's light bulb, the water purifier is made up of a composite of rice-husk ash and nano-silver particles, which together inhibit bacterial growth (Chang, 2010). It has a cartridge with a fuse that prevents water from passing through once the purifying capacity limit is reached, making it straightforward for users to generate safe water. The purifier is simple, makes use of local resources in harmony with high-tech, and is easy to use—a highly relevant innovation.

The water filter originated from and benefits poor households in India, and thus required the following elements: ease of assembly, ease of maintenance (filter replacement), high usability, reliability, and acceptability. Launched in December 2009, the sea-green filters sold over 400,000 units in India in the first two years. Current plans exist for reaching other markets such as Africa, Southeast Asia, and Latin America (Singh, 2011).

New Distribution Models: *non-conventional channels and access—Solar Sister: Avon Style Solar Product Distribution*

Solar Sister's Avon-style solar product distribution is an innovative method of spreading solar technology to benefit communities and simultaneously empower the women who are trained to participate. The business model provides rural customers with solar products to which they would otherwise not have access. It is a revolutionary approach to energy distribution in Africa as well as in other parts of the globe.

Katherine Lucey, the founder and CEO of Solar Sister, sought to decrease energy poverty in Africa while enabling rural women to develop economically (Huffington Post, 2011). Other business models did not account for the highly rural nature of these targeted areas, and lack of existing infrastructure did not allow for the sharing of technology, goods, services, or education. Lucey's development of this re-thought distribution model creates an avenue for rural women to network, spread information to their communities, and reduce energy poverty in the process (Misra, 2011).

Inspired by the Avon style of delivering products to local customers through fellow community members, women are trained and provided with an inventory of solar technology which they sell in rural regions (Making It, 2011). This system addresses many challenges at once: it creates an efficient and sustainable delivery system, promotes technology innovations, reduces the gender-technology gap, and makes women a key factor in entrepreneurial livelihood development (Solar Sister, 2012).

Adaptation: *leveraging existing products, inputs and services—Awaaz.De: Voice Message Board for Education*

Awaaz.De (which means "Give Your Voice") is a software platform that leverages low-end mobile phones and Internet access for aggregating, responding to, and routing voice messages. Created by Neil Patel and Tapan Parikh for use in India, Awaaz.De shares information through voice content and provides services that overcome language barriers and literacy constraints (Neil, 2011). Awaaz.De provides services such as interactive voice response voting, data collection, surveys, polling, access to mobile social networks, peer-to-peer information resources, and information databases—all on phones that are readily accessible.

The Awaaz.De platform exemplifies several core competencies, including use of local resources, human-centric design, and adaptation. The platform was developed from an existing technology that had been developed by Avaaj Otalo (AO). AO provided services for farmers to access

relevant and timely agricultural information over their mobile phones. Developed as a collaboration between UC Berkeley School of Information, Stanford HCI Group, and the IBM India Research Laboratory and Development Support Center (DSC), AO sought a highly relevant communications service for rural farmers (Heatwole, 2011). Using just mobile phones and (even intermittent) Internet access, both AO and Awaaz.De have been able to focus on the essence of problems which their target communities face. Awaaz.De re-tasks AO technology to support a customized set of voice message boards with configurable posting and browsing settings.

Complementing their voice interface is a web-based administration interface that allows for the creation of sub-forums around specific topics that are of particular relevance to users. Community managers—typically members of a local organization that have access to the Internet—use the Awaaz.De interface to moderate message boards, annotate voice messages with author information and content tags, route messages to responders, and broadcast messages to reach wider audiences. An integration of existing technologies occurred between information pull voice forums and information push broadcasting in order to reach broader audiences. The "Internet for a few, voice for the rest" model reflects a now common scenario for rural information delivery systems.

The open-ended structure of the Awaaz.De platform allows for continued adaptation by different organizations that have followed in their footsteps as they had done with AO's platform. As of 2011, Awwaz.De served over 100,000 calls from more than 10,000 unique callers, and catered to 8 social development organizations and enterprises working in areas such as agriculture, education, women's empowerment, labor rights, and rural product manufacturing/distribution across 6 states in India (Devi, 2012). The applications of such a service are nearly limitless, providing another reason to describe the innovation as being adaptable.

Use of Local Resources: *Sourcing without importing equipment or materials—Husk Power Systems: Rice Husk Gasification*

Husk Power Systems (HPS) is a social enterprise that has developed a process to generate clean, safe, and efficient electricity by sourcing a local waste—rice husks. Rice husks are a waste product of rice hullers, machines that separate the husks as chaff from rice, which is a staple food in the regions where HPS operates. It is estimated that 4 billion pounds of rice husks are left over from rice processing in Bihar alone every year, a quantity large enough to allow the HPS founders to develop an electricity generation process based on this raw material (Greene, 2011).

Since its founding in 2007, HPS has built 75 operational plants in Bihar which serve 150 villages, or a total of more than 150,000 people. The domino effects of bringing electricity to these areas are tremendous. HPS allows for villagers' activities to extend beyond daylight hours—economic development and microenterprise is promoted and the amount of time children can study is increased. The reduction in pollution improves both air quality and overall health, and women spend less time collecting firewood, thus providing them with more time to participate in tasks that close gender inequality gaps. Reducing emissions and preventing deforestation protect both global and local environments, and improves overall health of local populations as well as increases the ease with which healthcare is administered.

In rural India, 45% of households—nearly 400 million people—lack access to electricity, and in states like Bihar, Orissa, and Uttar Pradesh (among the poorest in India), 80%–90 % of households have no electricity (Rohatgi, 2010). Villagers rely on kerosene lanterns for household light and diesel generators for irrigation and commercial power, but these traditional options are expensive and destructive to people's health and the wellbeing of the environment. Most of the units developed by HPS generate 32 kilowatts of electricity from 50kg (110lb) of husks per hour, enough to provide the basic needs of a village of about 500 (Hanson, 2012). The cost of the service is about 80 rupees per month (less than $2.00), about half the cost of the kerosene that most villagers use to power lamps that provide far less light than the 15-watt compact fluorescent lamps (CFL) bulbs distributed by the company (Boyle, 2010).

HPS has a goal: to provide electricity to 10 million people in over 10,000 villages by installing 3,000 plants by 2017. If this goal is achieved, HPS will in the process give rise to 2,500 small entrepreneurs, and over 7,000 jobs will be generated in the communities it serves (Nadres, 2012). Utilizing existing local resources is both cost effective and a holistic way to approach the business product cycle.

Green Technologies: *powered by renewable resources—WE CARE Solar Suitcase: Lighting Delivery Rooms*

The WE CARE Solar Suitcase was developed after Laura Stachel, a doctor traveling in Nigeria, became aware of disturbingly high maternal and infant mortality rates in various areas of the country (Stachel, 2009). Doctors and midwives in developing countries often lack access to many of the essentials needed to properly care for patients—one of these is good lighting. Responding to this situation, a team of UC Berke-

ley researchers from the Blum Center (along with Dr. Stachel) developed the "Solar Suitcase" as a viable solution.

Powered entirely by solar panels, the WE CARE Solar Suitcase contains the following equipment: bright LED lights, rechargeable walkie-talkies and cell phone charger, and LED headlamps with rechargeable batteries (Dornhelm, 2010). In addition to significantly lowering the maternal mortality rate in rural regions of Africa, these elements have also proven to be absolutely critical in natural disasters such as the earthquakes in Haiti and Chile (Meehan, 2011).

While the WE CARE Solar Suitcases have saved thousands of lives during natural disasters and helped to lower maternal and infant mortality rates, the suitcase is quite heavy and requires several hours of direct sunlight to recharge the equipment (Erickson, 2010). Improvements are being made to make the suitcase lighter, more flexible, and even more durable so it can be a feasible solution for a deluge of other applications. Though the Solar Suitcase has been successfully assisting clinics after natural disasters and reducing mortality rates, and has proven to be revolutionary in developing countries all around the world, its potential has still not yet been fully realized (Callais, 2012). Demand for this technology is on a steady upward curve, and when supply becomes accessible to all populations that demand it, potential can be realized.

Affordability: *low input and operation costs—Jaipur Foot: $30 Prosthetics*

The Jaipur Foot is one of the best examples of embodying the core competencies of Frugal Innovation to address global sustainability. The Jaipur Foot's main product offering is a rubber-based prosthetic leg for people with below-the-knee amputations. Originally distributed by the NGO Bhagwan Mahaveer Viklang Sahayata Samiti (BMVSS), the Jaipur Foot is now being used by the VA hospital in Palo Alto, CA and is also offered by Kaiser Permanente as an alternative to traditional prosthetics (Diaz, 2008).

The Jaipur Foot was developed in 1968 by Ram Chander (Sharma, 2011), and BMVSS was established in early 1975 by Mr. D. R. Mehta. In the first seven years after the development of the Jaipur Foot, 50 individuals were fitted with prosthetic legs and feet. Now, over 1.3 million beneficiaries of BMVSS—primarily in India but including 26 countries in Asia, Africa and Latin America—have been fitted with a Jaipur Foot prosthetic.

The biggest issue that the Jaipur foot takes into account is the need to be affordable—not cheapest in terms of cost, but highest in value-to-

cost ratio (Craig, 2005). Victims of war crimes, patients who have suffered from infectious diseases, and people who have been in accidents who are now missing part or all of their leg(s) can now pursue lives that resemble normalcy. The Jaipur foot resembles a natural foot and leg, is able to be fully submerged in water (e.g., for working in rice fields), and is lighter in weight to allow for ease of movement and travel. Relative to a comparable prosthetic in the United States that costs $8,000 and requires up to a year of recovery time, the Jaipur foot costs $30 and has a rehabilitation time of 3–6 months (Chopra, 2004).

When considering how to address global sustainability issues via the core competencies of Frugal Innovation, the Jaipur foot is a wonderful example to keep in mind. Elements of all ten can be found in this one example, and it is prudent to hope that more examples will embody the excellence of Jaipur Foot's success (Co, 2008).

CONCLUSION: APPLYING FRUGAL INNOVATION AND ITS CORE COMPETENCIES

The first notions that typically come to mind when thinking about the term "Frugal Innovation" for the first time are "affordability" or "cheapness." In reality, however, the term refers to addressing the *essence* of a problem, and this focus on the essence of a problem is where the core competencies allow for truly novel innovations. If a solution is developed in alignment with the competencies depicted in this article, the solution will more properly address the needs of those targeted. Frugal Innovation, when pursued thoughtfully, results in high quality, applicable, accessible, and affordable services and products for consumers in emerging markets—and elsewhere.

Each competency opens a window of opportunity for those who exist in resource-constrained areas of the world. The cases discussed above illustrate clearly how these competencies can be brought to life; they are also examples of organizations, enterprises, and individuals that have created new standards for others to aspire to. The universality of benefit generated by these examples is what ties them all to the same theme—that of global sustainability and the role of social enterprises—and to all other organizations as well in contributing to a more sustainable world.

We urge people from all backgrounds and disciplines, regardless of profession, to seek an understanding of the needs of the developing world. By doing so, we can all move synergistically toward a more sustainable world. Frugal Innovation, when it is fully embraced, can be a firm driver of progress in achieving sustainable solutions.

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THE ROLE OF ICT IN SCALING UP THE IMPACT OF SOCIAL ENTERPRISES

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Abstract. Information and Communication Technologies (ICT) can help social enterprises and other organizations working on global sustainability issues and in the human development sector in general scale their social impact. The flexibility, dynamism, and ubiquity of ICTs make them powerful

tools for improving relationships among organizations and their beneficiaries, multiplying the effects of action against many, if not all, aspects of global unsustainability, including poverty and exclusion. The scaling of social impact occurs in two different dimensions. On one hand, ICTs can increase the value proposition of a program or action (depth scaling) in different ways: providing accurate and fast needs recognition, adapting products and services, creating opportunities, building fairer markets, mobilizing actions on environmental and social issues, and creating social capital. On the other hand, ICTs can also increase the number of people reached by the organization (breadth scaling) by accessing new resources, creating synergies and networks, improving organizational efficiency, increasing its visibility, and designing new access channels to beneficiaries. This article analyzes the role of ICT in the depth and breadth scaling of social impact.

INTRODUCTION

In recent years, the field of environmental action and human development has been searching for tools and methodologies to expand the impact of initiatives that alleviate poverty and protect the environment. Different Information and Communication Technologies (ICTs)—from radio and television to the newest Internet-based smartphones—have constituted a disruptive revolution in the last three decades, radically transforming how we interact with other individuals and organizations. These devices and their applications allow users to find new ways of collaboration, new and sustainable business models, and cost-effective modes of scaling social innovation; however, their effects have not been quantified.

The main objective of this article is to shed some light on the question "How can ICT help organizations, especially social enterprises that pursue initiatives to create a more sustainable world, achieve greater impact?" Our research attempts to systematize existing knowledge and identify key technological factors that can help social enterprises and other organizations committed to social and environmental justice improve their performance. In doing so, we hope to raise awareness of the high potential that ICT has to change lives and make a global impact.

The challenge of global sustainability is complex and involves interconnected issues ranging from environmental degradation to consumption patterns. While ICT can contribute to more sustainable approaches in many ways, this article illustrates how ICT addresses the two important issues of poverty and social exclusion, which are inextricably

linked to environmental degradation and unsustainable consumption patterns. While the resolution of these pressing problems of humanity is central to global sustainability, they represent only two illustrations of how ICT can contribute to initiatives across the entire range of issues related to global sustainability.

Social enterprises offer a wide array of solutions aimed at solving social problems through a market approach (i.e., the sale of goods and services). This approach helps to ensure the financial sustainability of such enterprises, but it is understood in different ways depending on the geographical and cultural context (e.g., Yunus, 2007; Defourny & Nyssens, 2008). In this article, we analyze how ICTs can help social enterprises to improve their performance and thus their social impact, and with commensurate returns to global sustainability.

First, we briefly review the conceptual framework of social impact in general and the challenges involved in measuring social impact. Second, we address the issue of scaling social impact over larger populations and/or geographies. We then explore different beneficial effects that ICT provides to development stakeholders.

SOCIAL IMPACT AND MEASUREMENT

Because of the complexity of effective human development paradigms, our analysis is wide and general, including actions in both developed and developing countries. Actions to achieve a more sustainable world are, of course, carried out by many different stakeholders, not just social enterprises: NGOs, private companies, governments, aid agencies, etc. To focus our discussion, we will emphasize two of the most critical parts of the global unsustainability problem: poverty and social exclusion. We understand poverty and social exclusion as arising from a complex mosaic of realities caused by a shortage in one or more fundamental aspects of human life: access to water, healthcare, housing, security, financial services, education, etc. (Subirats, 2009). This multidimensional deprivation impedes people from living at the fullest levels of mind and spirit (Chu, 2013).

Defining Social Impact

According to Mulgan (2010), defining social value is a difficult task because value is "not an objective, fixed, and stable fact, but subjective, malleable, and variable." Most modern economists now agree with Mulgan that in many fields of social action, there is no consensus about what

the desired outcome should be. A definition of social impact argues "not only about social value, but also about social values" (Mulgan, 2010). In this sense, definitions of social impact found in the literature normally ignore the discussion of what is good and desirable and focus instead on the effects and changes that social value generates.

The Organization for Economic Co-operation and Development (2004) has defined impact as "positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended." Other authors propose definitions based on the effects caused to individuals (London, 2009), or to a system as a whole (Ashoka, 2010).

In a micro-level approach, Vanclay (2003) defines social impact as "changes to one or more of the following aspects in human lives: 1) people's way of life, 2) their culture, 3) their community, 4) their political systems, 5) their environment, 6) their health and wellbeing, 7) their personal and property rights, and 8) their fears and aspirations." This definition highlights the multidimensional condition of human nature (Yunus, 2007) and makes clear that poverty is not only about not having money but also about living a life that is not at its full potential in different aspects (Duflo, 2009).

Most of the initiatives oriented to fight poverty affect one or more aspects of human life. For example, a program aiming to provide access to the Internet in an isolated rural area through a telecenter can have impact on people's lifestyles and on their community as well as on their individual rights and aspirations.

In a holistic macro-level approach, Ashoka (2010) defines social impact as a systemic change that affects (or has the potential to affect) large numbers of people or industries as a whole. Ashoka divides change systems into five different dimensions: 1) redefining interconnections in market systems, 2) changing public policy and industry norms, 3) transforming the relationship between private and citizen sectors, 4) integrating marginalized populations, and 5) promoting the culture of social entrepreneurship. This approach is summarized by the words of its founder and CEO, Bill Drayton: "social entrepreneurs are not content just to give a fish or teach how to fish. They will not rest until they have revolutionized the fishing industry" (Leviner, Crutchfield, & Wells, 2007).

Approaches to Measuring Social Impact

Social impact is measured by tracking the outputs and outcomes of human development actions and evaluating the resources committed to these tasks. We identify complementary approaches driven by different motivations:

- *Social impact assessment* is the quest for understanding and explaining external change caused by one organization's actions. In this sense, impact assessment and valuation aims to identify actions that are effective in changing human lives and predict the probable consequences that might result from them. This approach attempts to determine whether the intended impact(s) of the organization is (are) being achieved (Colby, Stone, & Carttar, 2004), improve the service(s) provided to the beneficiaries (London, 2009), and anticipate negative social impacts that may develop as a result of the social change (Burdge & Vanclay, 1996).
- *Social accounting and auditing* is a process for measuring internal performance that informs external communications in two ways. On one hand, social accounting and auditing is used to guarantee that resources are being used in an efficient way. This approach includes the tasks "an organization conducts to make itself accountable to its stakeholders and commit itself to following the audit's recommendations" (Hutchinson & Molla, 2008). On the other hand, social accounting and auditing can help in capturing new human and economic resources in markets that become more competitive every day. Agents desiring to finance or collaborate in achieving actions committed to positive social ends need metrics to clarify how inputs can contribute to outcomes, as well as to clarify choices and trade-offs (Mulgan, 2010).

While these two approaches are complementary and not mutually exclusive, their focus does differ. Normally, social impact assessment seeks to qualitatively and quantitatively measure impacts on beneficiaries, while social accounting and auditing focuses on the quantitative resources committed by social investors and/or donors.

Metrics have proliferated over the last 40 years, resulting in hundreds of competing methods for calculating social value (Mulgan, 2010). But even if there is no unique, singularly accepted framework or methodology for impact assessment, there has been progress in recent years toward standardization. These frameworks and methodologies include:

- business process management methodologies like the Balanced Scorecard (Kaplan & Norton, 1992) and the triple bottom-line (Elkington, 1997),
- qualitative assessment frameworks such as the theory of change (Colby et al., 2004; Weiss, 1998) and the Base of the Pyramid Impact Assessment Framework (London, 2009), and
- quantitative assessment methods and frameworks, including cost-benefit analysis (e.g., Karoly, 2008), Social Return On Investment (Roberts Enterprise Development Fund, 2001), The Best Available Charitable Option (Acumen Fund, 2007), Expected Return (William and Flora Hewlett Foundation, 2008), and the Impact Reporting and Investment Standards (Global Impact Investing Network, 2011).

A major goal for practitioners today is the development of a set of indicators and metrics that make the measurement of social value possible and comparable across different initiatives.

Abstract Challenges of Measuring Social Impact

Two abstract challenges in social impact measurement and assessment concern the definition of social value and its quantification in comparable units. From the definitions of impact, we notice that the term includes a wide range of aspects in the life of a person, some of them rather abstract or intangible: rights, aspirations, culture, well-being. A consequent question is "Is it possible to measure these elements quantitatively?"

Even if some aspects of social valuation remain beyond current metrics, we should "commit ourselves to the creation of new words and numbers pegged to expressing that which we seek to explain" (Emerson, 2000). While perfect ways do not exist to measure even specific impact (e.g., health outcomes), social entrepreneurs and others can follow some indicators and figures to gain a better understanding of the impact of their actions.

Another abstract challenge of impact assessment is the multi-causality relation of actions (Austin, Stevenson, & Wei-Skillern, 2006). In development programs, even when improvements can be measured, it is often difficult to attribute them to specific interventions (Dees, 1998) because they may respond to a combination of various direct and indirect effects.

The social nature of human life (composed of interconnected dimensions), the dynamism of the context (changing conditions over time), and the nature of developmental programs (composed of different actions) make it difficult to isolate the root cause of changes resulting from human and organizational actions. To draw valid conclusions about impact, an unaffected group or set of entities would be necessary to account for what would have happened had the venture never launched (London, 2009).

The issue of multi-causality is being explored by Banerjee and Duflo from the Abdul Latif Jameel Poverty Action Lab at the Massachusetts Institute of Technology. They have been using randomized evaluation, a methodology widely applied in medicine and natural sciences that addresses this challenge. It allows for rigorous evaluation of the impact by decomposing the problem and analyzing each particular element and the relations among elements (Duflo, 2009). However, a challenge in assessing social impact is that "control" groups will likely differ from the "experimental" group based on local contextual factors. There are also ethical considerations in applying the randomized controlled trial paradigm to humans when an intervention exists that is believed to provide better outcomes.

Operational Challenges of Measuring Social Impact

In addition to these abstract challenges, there are operational and measurement process challenges in impact assessment. Many of these can be addressed or ameliorated by ICT.

Social enterprises and many other human development practitioners often have very limited resources to invest in their attempts to develop conclusions about their social impact. Measurement and assessment is a complex process that needs scientific design of trials and rigorous treatment of data to yield valid, meaningful, and statistically significant conclusions. According to London (2009), organizations working with the socio-economic base of the pyramid usually do not have robust enough systems for accurate assessment. They may also simply evaluate the wrong measures, i.e., ones that do not relate to social impact. These deficits in measurement and assessment are partially caused by the limited resources of these organizations. In this regard, ICT can help

to create ecosystems that connect different data scientists and thematic experts with practitioners to make the assessment process easier and more effective (Porway, 2011).

A second operational challenge is the difficulty and expense of data collection. Traditionally, the methods that have been used by organizations to monitor human development actions followed a top-down approach: design, execution, and validation are carried out by experts without the participation of beneficiaries. The main problem of this top-down strategy is that it makes the process long and expensive. The diffusion of ICT technologies on a global scale reduces the difficulties associated with collecting data. For example, mobile phone technology is ubiquitous—there are 3.2 billion mobile phone subscriptions in the world (GSM Association, 2013)—and can be used as an inexpensive and reliable way to collect first-hand, unbiased information from and by grassroots beneficiaries.

A third operational challenge is data processing. Accountability and impact assessment can represent a significant resource commitment for human development organizations, especially for the smaller ones. Depending on whether or not an organization's funders allocate sufficient resources for outcomes monitoring, impact measurement can burden the operations of an organization. This workload can be simplified with the use of ICT. Not only does technology help to organize data more quickly and systematically, it can also automate processes for periodic data acquisition. For example, telemedicine applications for elderly care can track patients' key indicators (e.g., blood pressure) by sending information on a periodic basis through devices connected to the Internet.

The validity of data is often time-constrained; in some cases, data collected have short validity (Austin et al., 2006) due to long trials and/or changing conditions. Trials and assessment projects may take several months or years to be carried out, and it can be difficult or expensive to assure that the data are still valid after long periods. Conditions change, people change, and the organization changes. In this dynamic scenario, the conclusions that arise from such studies may be rendered obsolete from the moment they are initiated. ICTs can help solve these types of problems by enabling real time exchanges or asynchronous but frequent exchanges, establishing bidirectional communication channels that work well in dynamic conditions. In such contexts, data can be tracked, feedback loops are possible, and updating the data is simple. In the words of Gisli Olaffson, Emergency Response Director of NetHope, "data become alive if enhanced by technologies" (Personal interview with Gisli Olaffson, 2013).

THE ROLE OF ICT IN SCALING IMPACT

ICTs have great potential for empowering and strengthening socially-oriented organizations in their quest for impact. Yunus (2007) points out that "the new ICT can allow poor economies to abandon past economic development trends and integrate instead into the world economy much faster than anyone could have supposed." Duncombe (2008) underlines the need for ICTs for inclusive or pro-poor markets, particularly for small and micro-enterprises in value chains, as they are important tools for improving market coordination, efficiency, transparency, and equity.

The Need for Scaling Social Impact

When organizations or individuals identify a program, model, methodology, or some other action that proves effective in poverty and exclusion alleviation, the next phase is to replicate and scale such on a global basis.

From an entrepreneurial point of view, scaling social benefit ventures means "equipping social benefit entrepreneurs with tools and techniques to effectively accomplish their goals related to serving more of their target beneficiaries" (Koch, Coppock, Guerra, & Bruno, 2004).

The need for scale derives from the fact that local actions have physical limitations in reaching people in need. Sir Fazle Hasan Abed, founder of BRAC, the Bangladeshi NGO named the largest in the world, says: "If you want to do significant work, you have to be large." Discussing the vision of the twentieth century economist E. F. Schumacher, author of *Small is Beautiful*, Abed adds: "small may be beautiful, but big is necessary" (Davis, 2013).

In a global world where people suffering the same problems are interconnected, social entrepreneurs and other organizations working in human development are not satisfied with solving just part of the problem, or solving the problem locally. Their aim is to reach a global change, a shift of paradigm that leads to global sustainability.

Different Ways of Scaling Social Impact

The social impact of a given initiative depends primarily on two variables: how much social value an action generates for each person reached, and how many people are reached by the initiative. When defining beneficiaries and impact, it is essential to account not only for the effects of a given action in present generations, but also how those

actions will affect future generations. Understanding the social impact of today's interventions on future generations is at an early stage. Consequently, more emphasis and action is required to promote intergenerational equity.

Impact is directly proportional to these two variables: the more valuable the value proposition, the bigger the impact; the wider the collective reach, the bigger the impact. Impact in mathematical terms can be expressed as:

Social Impact = Value Proposition * Number of Beneficiaries

According to this formula, we can differentiate between two ways of scaling social impact (Desa & Koch, 2010): scope (which we refer to as breadth) scaling and depth scaling:

- Scaling social impact normally refers to **breadth scaling**, that is, increasing the number of beneficiaries that is reached by the organization or initiative so they can profit from the social value created.
- Social impact can also be increased through **depth scaling**, which increases the social value proposition already delivered to a given number of beneficiaries by including new features and benefits. This type of scaling is related to being more effective and to expanding the effect of the actions undertaken by organizations.

Table 1 summarizes the main characteristics of these two types of scaling. Next, we explore the effects that ICTs can have which increase each of these types of impact.

The Role of ICT in Depth Scaling

ICT can help build more efficient and complete products or services that have deeper impact in poverty alleviation. The use of ICT can increase the value proposition in five ways: 1) accurate and fast needs recognition, 2) adaptation of products and services, 3) opportunities creation, 4) information disclosure and construction of fairer markets, and 5) inclusion and social capital creation.

Accurate and fast needs recognition

In today's dynamic world, information changes quickly, and so having current information can be difficult. Information from beneficiaries

(e.g., needs, preferences, etc.), critical in designing a program or an initiative, is in some cases not attainable by social agents. ICT can thus be a suitable tool for reducing the complexity of data gathering in two ways (Olafsson, 2013):

Type of Scaling: Depth Scaling (value proposition)	
Goal: To increase the social value and effects of an action or program	
Benefit from ICT use	**Example**
Accurate and fast needs recognition	Mobile phone use in emergencies: Ushahidi (Haiti)
Opportunities creation	Online education platforms, social Business Process Outsourcing: Samasource (India)
Products and services adaptation	Adaptation of WiFi to provide long-distance telemedicine services: EHAS (Latin America)
Inclusion and social capital creation	Design of technology-based jobs to include people in society: Grameen Telecom (Bangladesh)
Information disclosure and fairer markets construction	Use of mobile phones to promote market transparency: M-Farm (Kenya)
Type of Scaling: Breadth Scaling (number of beneficiaries)	
Goal: To increase the number of beneficiaries reached by one action or program	
Benefit from ICT use	**Example**
Access to new resources	Micro-volunteering, crowdfunding: KIVA (worldwide)
Synergies and networks construction	Network of social entrepreneurs, volunteers, mentors, and stakeholders: Ashoka (worldwide)
Organizational efficiency	Alliances, incubators, clusters: NetHope (worldwide)
Improved visibility	Information disclosure for transparency or advocacy: Video Volunteers (India)
New access channels to beneficiaries	Access to services through mobile phones: M-Pesa (Kenya)

Table 1. The Role of ICT in Scaling Social Impact

- recognize needs faster and therefore provide a quick response (sometimes almost in real-time) to some problems, and
- understand trends more accurately by gathering large amounts of data ("Big Data"). Big Data can be used in a prospective way to forecast and prevent negative effects, and also in a retrospective way to better understand how to tackle recurrent problems.

For example, Ushahidi is a platform developed in Kenya that crowdsources information from citizens using multiple channels based on ICT, including SMS, email, Twitter, and the Web. This organization helped map violent outbursts in Kenya and Palestine and track the victims of the earthquake in Haiti. In the context of emergency response, real-time and accurate information provided by citizens' mobile telephones can be crucial in allocating resources and offering quick, effective actions.

Adaptation of products and services

Adapting products and services to the needs of people at the base of the pyramid is one of the key success factors in all human development actions. In this sense, ICT can help adapt products and services by turning physical features into digital ones. This change normally yields a more affordable product due to a reduction in the use of inefficient infrastructure or distribution channels and in the cost of manufacturing and distribution. The array of possibilities that ICT offers in this sense is enormous.

For example, organizations that deliver health services in rural areas can adapt their services to the isolation and lack of infrastructure. Enlace Hispano Americano de Salud (EHAS) is a Spanish-based organization that provides health assistance to the rural areas of five Latin-American countries. This organization makes data transmission possible between health centers in the same region by adapting wireless networks. Instead of using satellite signals which are high cost and low bandwidth, EHAS adapts WiFi technologies (normally used for short-distance) for long-distance and inexpensive communication that increases efficacy and efficiency, and thereby enables provision of better services to communities (Martínez, 2004).

Opportunities creation

Many economic opportunities in the 21st century are based on access to information, knowledge, and education. ICTs are used to gather, disseminate, exchange, process, store, and access information and

knowledge, which are essential resources for women and men to live satisfactory lives. The integration of ICTs in human activities is thus consistent with the appearance of the Network Society (Castells, 1998).

Recent years have seen the proliferation of education programs based on different technologies that are changing patterns of education (e.g., Coursera, Udacity, Khan University, and different open coursewares such as MIT Open Courseware). These new solutions provide people all over the world with a wider array of choices. Access to education is not only provided through computers but, as the example of Lifeline in sub-Saharan Africa shows, also through the use of solar and wind-up radios and MP3 players.

New opportunities can also be created through the adaptation of ICT-based jobs to the base of the pyramid (Heeks, 2010). The emergence of social Business Process Outsourcing (BPO) is an excellent example. Easy tasks and packages of work are outsourced to low-skill workers to provide them a source of income. Samasource, a San Francisco-based social enterprise that connects women and youth living in poverty to dignified work via the Internet, has already paid more than $2.9 million in wages to more than 3,500 workers (www.samasource.org). Some authors (e.g., Seeth, 2013) have identified the social BPO trend as a "driver of GDP growth and large-scale job creation for developing countries." While GDP growth is an imperfect measure of social impact, dignified work of the sort Samasource catalyzes fuels economic growth.

Information disclosure and fairer markets construction

Ashoka has identified patterns of changes that leading social entrepreneurs set out to achieve: changes in market systems, cultural and social norms, and public policies and industry norms. ICT can help effect all of these changes.

Mobile technologies can facilitate changes in the flows of market information, access to goods and services, and value chains. For example, M-Farm, a Kenyan organization, has developed a mobile phone platform for Kenyan farmers to get information pertaining to the retail prices of their products, buy their farm inputs directly from manufacturers at favorable prices, and find buyers for their produce. This transparency tool is changing the Kenyan marketplace to a fairer one, enabling more of the economic value of agriculture to accrue to smallholder farmers who comprise half of the jobs in Africa.

Cultural and social norms, as well as citizen awareness about social entrepreneurship, is spread through viral ICTs: social media, blogs, videos, etc. Different institutions, including foundations, universities, NGOs, and multilateral bodies, are creating momentum in the field of social entrepreneurship by spreading the concept throughout the world and promoting social action.

Changes in public policy and industry norms are more easily promoted with ICT. Social organizations not only have a local effect—they can often achieve national or global level impact. For example, Avaaz (www.avaaz.org) is a global organization that empowers millions of people to take action on different issues, from corruption and poverty to conflict and climate change, through online campaigns. It has more than 20 million members worldwide and has taken more than 117 million social justice actions since 2007.

Inclusion and social capital creation

The development of communication options has enabled the involvement of more people in collaborative actions than was previously possible. The interaction of beneficiaries with other agents generates social cohesion and social capital, defined as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995).

Community participation through the use of technologies generates inclusion for the disadvantaged and can also generate ownership of programs by communities, making them more effective and more likely to last over time. ICT provides access to precious resources, including local knowledge about the market, cultural traditions, and other contextual factors that influence adoption of products and services tailored to the poor.

Grameen Telecom is an example of the improvement of social cohesion among the local community. This initiative, launched by Grameen Bank, aimed to provide rural poor in Bangladesh with access to mobile phone communication. A group of "phone ladies"—largely illiterate, excluded, and elderly women from these communities—sells airtime to other villagers, making possible their acceptance in the community, recognizing their role as drivers of economic activity, and building an income generating activity for themselves.

The Role of ICT in Breadth Scaling

A traditional paradigm in poverty alleviation and in many other social and environmental initiatives consists of piloting a prototype product or service for a limited period of time and measuring benefits for a small community or cohort. If the initiative shows efficacy and impact, it can be scaled to reach more people in the same target community or in other regions where the same social problem exists. For example, the Naandi Foundation, a nonprofit organization that provides purified drinkable water in rural India, increased its impact through a breadth scaling approach (Desa & Koch, 2010). The program started with one water purification plant in 2006, and after mastering the solution to one specific need (safe-water availability), the solution was replicated in as many geographical areas as possible. In the period from 2006 to 2009, Naandi built 1,000 plants serving 4 million people.

ICT is a powerful tool for growing the size of these human development initiatives in two directions: providing the outputs and effects to more beneficiaries, and capturing more inputs or resources to make the organization larger.

But ICT can improve an organization's performance independent of its growth. According to Koch et al. (2004), scaling also involves building organizational capacity and the development of business models aimed at sustaining growth. ICT normally implies more efficient management through better communication and organization. This efficiency gain results in the organization's ability to reach more people for a given volume of resources; in other words, ICT creates leverage.

We identify five benefits derived from the use of ICT in breadth impact scaling: 1) access to new resources, 2) synergies and networks creation, 3) organizational efficiency, 4) improved visibility, and 5) new access channels.

Access to new resources

One challenge that most social impact initiatives (especially nonprofits) face, regardless of size, is the effective capture of new resources for the organization, including voluntary work and economic funds. The crowdsourcing movement, based on the collection of funds through a large group of individuals, can mean significant scale and transformation. In words of Edward G. Happ, founder of NetHope, "if I can spend

8 hours less to have one hour of impact in the world, that is a huge gain … and technology is what delivers that type of gain" (NetHope, 2011).

Two examples of the use of ICT to facilitate voluntary work are the Spanish "Microvoluntarios" project started by the Bip Bip Foundation (www.fundacionbipbip.org) and the UK-based platform Help from Home (www.helpfromhome.org). Both initiatives promote micro-volunteer work online to help organizations fight exclusion and poverty. Individuals contribute to a cause by investing their free time to help others with tasks ranging from 30 to 120 minutes. These platforms make possible expertise outsourcing from different fields which helps the daily work of nonprofit organizations in tasks such as proofreading, translation of texts, e-mentoring small entrepreneurs, or, for example, data collection for a project aimed at recording tree populations in a region.

In fundraising efforts, ICT is enabling the crowdfunding movement to create significant impact. Kiva is a non-profit organization that connects entrepreneurs in developing countries with individuals around the globe who lend them small amounts of money (typically from $25–$50). The combination of several of these small loans provides the funding for one so called microcredit, typically ranging in the hundreds of dollars, which is received by the borrower and provides her/him with opportunities for income generation. Kiva has revolutionized the micro-finance industry by creating a community of more than 700,000 lenders that have disbursed more than $300 million since its founding in 2005.

Synergies and networks creation

Since networks are the quintessential organizational structures in the Information Era (Castells, 1998), ICT facilitates information sharing, making coordination easier and effective communication possible.

These benefits have an impact on the performance of individual organizations and also on the performance of the entire social impact sector. ICT helps to create collaborative ecosystems—for example, facilitating and coordinating a network of sustainable relationships, in different spatial and time zones, with different stakeholders: donors and lenders, enterprises, NGOs, governments, technology companies, etc.

One example of networked collaboration is Ashoka Foundation (www.ashoka.org). The support they offer to social entrepreneurs is based upon a worldwide network of fellows (award winning social entrepreneurs), strategic partners (enterprises), experts, and volunteers. In a recent survey, 56% of the social entrepreneurs interviewed said that Ashoka's

network was a critical tool for helping them see their work from a new perspective, and 49% said Ashoka was vital to increasing their impact (Acharya, 2012). In a similar fashion, Hutchinson & Molla (2008) state that "the most common way ICT helped improve operations of social enterprises was through enabling external communications with clients and customers."

Organizational efficiency

The incorporation of suitable ICT platforms can help socially-oriented organizations improve their internal performance. First, ICT improves communications with stakeholders such as beneficiaries, clients, and suppliers, enabling higher quality performance at a lower cost. Second, ICT reduces operational costs inside the organization by making labor-intensive activities almost free through the use of appropriate technologies (for example, through the use of digital platforms for grant creation). Third, ICT makes possible the management of a huge amount of small transactions that, without ICT, would simply be cost-prohibitive or impossible given the severe resource constraints of many social impact organizations.

According to Bradach (2010), the main challenge of social innovation is "how to get 100x the impact with only a 2x change in the size of organization." ICT can help create leverage to scale an organization's impact without scaling its size.

One example of organizational efficiency provided by ICT is NetHope (www.nethope.org), a consortium of 38 global NGOs (called members), major technology companies, foundations, and individuals to promote members' better use of technology and the improvement of their performance. NetHope itself uses technologies to make communication among actors possible and valuable: NGOs can reach several members of the consortium at once, saving time and resources.

Improved visibility

ICTs are inexpensive and effective tools for offering reliable information to multiple stakeholders: employees, donors, and society in general. The goals of information disclosure can be understood from different perspectives. Transparency and openness about how socially-oriented organizations invest funds generates trust that can attract new capital investment and collaborators. ICT also provides low-cost, high quality visibility and advocacy. Some causes quickly acquire international awareness thanks to ICT. The importance of social media and the viral effects of messages through Web 2.0 tools make possible broad dissemination of

initiatives and messages that can rapidly reach an unexpected scale. The propagation of the "Arab Spring" through social media (e.g., Facebook, Twitter, etc.) is a good example.

In this sense, ICT can be a loudspeaker that enables organizations to connect better with donors/funders and to communicate their messages more clearly. Social media provides a tool for telling human stories that help connect people to social impact initiatives.

New access channels to beneficiaries

Lack of access to credit, basic services, healthcare, and information are some of the main causes of exclusion and persistent poverty in the developing world. In some cases, the lack of a physical channel precludes provision of the goods and services that would alleviate some exclusion and poverty problems. Access is sometimes difficult and expensive, particularly in rural areas. ICT provides a bi-directional channel:

- *Access to markets for people living in isolated areas*. For example, smallholder farmers in rural areas in developing countries can communicate with larger organizations to arrange economic transactions. An example of this would be the Alternative Trading Network, which uses mobile phones to coordinate the supply and delivery of goods in rural Nigeria.
- *Access to isolated communities for enterprises that provide goods and services*. The mobile telephone has allowed the development of micropayments and microcredit in parts of Africa where no physical channel exists. M-Pesa is a service offered by Safaricom and Vodafone in different developing countries that allows users to make payments, transfers, and deposits through mobile phones. This is an innovative channel for providing financing services and business opportunities to the unbanked in those countries.

CONCLUSIONS

Social enterprises and other actors from public, private, and civil sectors are working on many ways to alleviate poverty, reduce social exclusion, and grapple with other problems of global unsustainability as they seek to meet the world's most pressing needs.

A wide array of ICTs—telephones, computers, radio, TV, sensors, social media—can be used as tools to increase the impact of all the agents working in these problems. This article demonstrates how efforts to scale social impact have an ally in ICT, and offers some examples in the human development sector.

First, even though impact assessment today is imperfect and challenges exist, ICT can help to overcome these issues in multiple ways:

- The collaborative nature of ICT expands the limited resources of socially-oriented organizations by connecting them to experts and making the heavy workload of data processing easier.
- Since ICT is embedded in all aspects of human life, it provides tools for assessing multiple dimensions of poverty and other global unsustainability issues.
- The dynamism of ICT can keep data current and reduce the time required to assess processes.
- The wide reach of ICT ("Big Data") can reveal trends and help prevent situations before they become problematic.

Second, ICT can help scale social impact directly. Performance improvement can be realized in two dimensions: the social value of a program's impact (depth scaling), and the number of people reached by the organization (breadth scaling). Figure 1 shows these roles of ICT in scaling social impact.

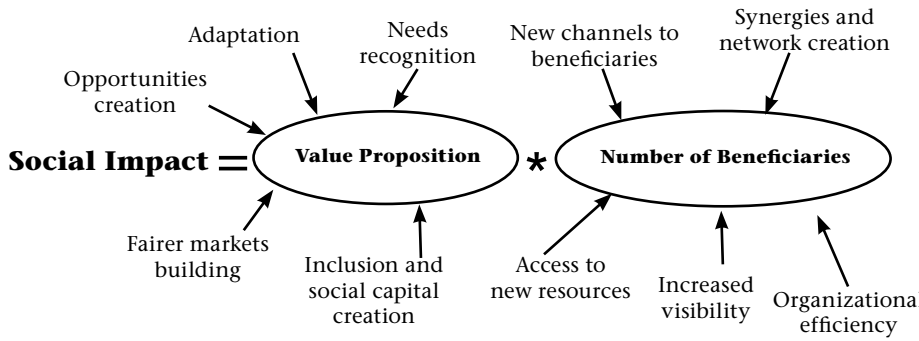

Figure 1: The role of ICT in scaling up social impact)

On one hand, ICTs can increase the value proposition of a program or action in different ways: providing accurate and fast needs recognition, adapting products and services, creating opportunities, building fairer markets through information disclosure, and creating social capital.

On the other hand, ICT can improve the growth and the reach of an organization in five ways: accessing new resources, creating synergies and networks, improving the organization's efficiency, increasing its visibility, and designing new access channels to beneficiaries.

ICT plays an important role in the quest for better and more effective solutions, but we should be cautious not to overstate the role of ICT in social and environmental initiatives. ICT is neither an unnecessary luxury nor the solution to every problem, but it is a set of tools that opens new possibilities for action and impact.

These tools are not one-size-fits-all solutions. They need to be adapted to the social objectives of each organization and to the local contexts in which these organizations operate. Although common frameworks for thinking about social value are useful, practitioners must adapt these frameworks to the organization and to the desired impacts being sought and assessed.

Future research on the integration of ICT in scaling impact should take into account organizational elements of technology deployment—technologies themselves are developing at a fast pace and they present a wide range of possibilities for improving human lives. In our opinion, the biggest challenge today in technological projects facing human development and other issues lies in refining the procedures to make these tools useful for human purposes: applying ICT meaningfully to different social problems, building the capacity to use ICT among the final users, and defining social structures and arrangements capable of effective and efficient uses for these technologies.

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THE ART OF RURAL BUSINESS

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Abstract. Grameen Shakti has mastered the art of rural business. Sixteen years ago, the Bangladesh-based renewable energy company was a pioneer in an unexplored market. It had to learn its business from scratch, including how to market solar technology while finding ways to benefit local communities. This would take time, and so Shakti began its business with a plan to become sustainable. The company's later success—allowing five million people to benefit from light, electricity and additional income—demonstrates what an entrepreneurial approach can achieve in a tough rural environment. It is not magic—what has evolved into a mature business model and is practiced in 1,500 field offices throughout Bangladesh can be studied and learned. It involves financing a low-income clientele, training, reliable service, and above all, innovation and hard work. At its root, Shakti's business is about making the economy work for everyone, including the people at the bottom of the pyramid.

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THE ART OF RURAL BUSINESS

The move to explore alternatives to grid electricity in Bangladesh was an initiative of the Grameen Bank, which by 1994 had over two million borrowers in 34,000 villages. Twenty years of Grameen Bank experience had demonstrated that the rural poor can successfully start small businesses with the help of tiny loans (microcredit), but many of these businesses need electricity to prosper.

To support home businesses, the bank introduced housing loans in 1984 to provide a safe dry space to work in year round, but the problem of working after dusk by the dim light of an open flame remained. A decade later, only nine percent of rural households nationwide were connected to the grid. Moreover, the grid expanded so slowly that young villagers had little chance of experiencing electricity during their lifetimes. Grameen Shakti was founded as a rural energy business to solve this problem.

The World Bank, the United Nations, governments, and development organizations considered renewable energy a strategic means of development, but when Grameen Shakti was founded in 1996, the renewable energy movement had not yet reached Bangladesh. Renewable energy in rural areas then was often a field of short-run projects, failed experiments and feasibility studies. Grameen Shakti, which literally translates to *rural energy,* would take a different approach. It was founded as a company to create a market for renewable energy technologies for the people in rural Bangladesh.

Shakti made solar home systems—a decentralized form of power supply best suited to rural households—the focus of its renewable energy business. While solar home system technology is sophisticated, the installation of the solar panel, battery, and charge controller is essentially "plug and play," and basic maintenance can be quickly mastered. International suppliers of solar systems offered support along with initial training and technical assistance to help the young company get started. It thus made sense for Shakti to first build its business on solar-powered systems for direct current (DC) appliances.

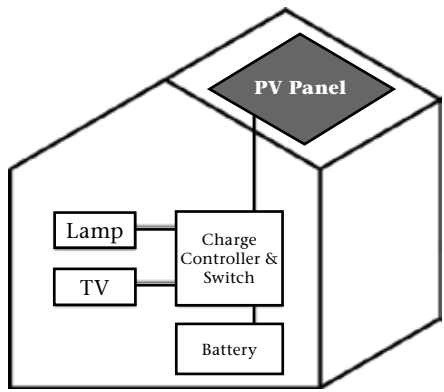

Figure 1. Main components of a solar home system (SHS)

As a newly founded company, Shakti was challenged to find out how to run a solar business in a rural environment. As important as Grameen

Bank's support was at the start, microcredit was an altogether different business compared to marketing a technical product. Village people understood loans, but not solar power. They were aware of their need for electricity, but thought it could only come from diesel generators and the grid. Renewable sources of power were exotic. A unique business model, therefore, had to be developed in order to reach a population that was skeptical of a technology that seemed like magic since its power came from the sun.

Shakti managers thus attended international seminars, talked with energy experts, and evaluated case studies in the hope of learning more about running a solar company. However, what they learned seemed lunar in its usefulness for rural business. The more the managers heard about conventional ways of doing solar business, the more they thought that they were not in the same business at all.

Shakti was doing something different. It was learning directly from its potential customers in the villages. Its approach was bottom-up, trial and error, open to new information and experiences. It was an experiment with no desire to become a theory. When Shakti discovered what best suited one villager's needs, the company tried it on a few dozen people, then a few hundred, and then fine-tuned the process until it ran smoothly. As a pioneer in an unexplored market, Shakti focused on creating a product people would enjoy—something that would pique their curiosity and create excitement in the village.

Focusing first on how people could benefit from solar power, Shakti learned that children's studies at night were a top priority for mothers. Further probing revealed other concerns: from a sawmill owner about how dangerous it was to work after dark, from an electrician about his problems with a kerosene cooker to heat up his soldering iron, and, best of all, about how a grocery shop owner and a carpenter earned extra money on the side by renting solar lamps to neighbors.

Learning from its village customers, however, was only one of Shakti's challenges. The prohibitive cost of a solar home system was a major problem for the start-up rural energy company. For the 13,000 Taka (US$317) a 17W solar home system cost in 1996, many villagers could have bought three months' worth of food for their families. A Grameen Bank loan averaged US$100 to start a small business, not enough for Grameen borrowers to become Shakti's customers. The start-up company had to do business with customers who lacked steady incomes, bank accounts, telephones, and insurance against illness, floods and storms. True, there was no solar competition for Shakti in rural Bangladesh, but

there was no market either. Shakti was thus challenged to find unconventional solutions.

Rural business takes time. Shakti had learned this from the Grameen Bank experience, and for this reason it was a company built to last. Shakti had to set up a network of village branches, staff a new company, master a new technology, and expand slowly in the beginning until it understood the market. It started not as a project but as a business with a market-based approach and a focus on becoming sustainable. Experts warned that any such business approach was doomed to fail since photovoltaic technology was far too expensive and sophisticated to suit a low income and poorly educated rural clientele. In some ways, the critics were right.

Working at the Cutting Edge of Business

"You can't do healthy business in a sick society," the business philosopher Peter Drucker never tired of saying (Drucker, 2008). He could have had business in poor rural societies in mind. As a rural energy company, Grameen Shakti works by necessity in underdeveloped rural communities. But its business is limited to those who can afford a solar system—millions cannot. In time, Shakti was able to offer its customers easy credit terms which changed things for the better, but the challenge remains: How does one do business with the many poor? How does one work at the cutting edge of rural business?

If money alone was the solution, villagers in Bangladesh would not have had to wait until the 21st century for solar power. But money alone creates neither entrepreneurs nor trust nor innovation, which are the prerequisites for progress in rural business. To this day, there is no simple answer to these concerns, no easy solution, no silver bullet. Shakti takes many approaches to advance its business: it experiments, succeeds, and fails. It strives to keep prices low, streamlines the organization, and exploits technological advancement. But Shakti knows that in the long run, its business is determined by village society; the healthier the rural community, the better the business, the more people benefit.

What Shakti's critics did not understand was the power of innovation to open up opportunities in an undeveloped market. True, no one can work miracles in a traditional rural society, but entrepreneurship, increased income and social innovation can make a difference. The following illustrates in brief what this means in practice. The need for entrepreneurial companies in a tough rural market is demonstrated, and

the assumption that the success of rural business in the long run depends on innovating ways to advance village communities is introduced.

Entrepreneurs Become a Hallmark of Shakti

Shakti began exploring the rural market by hiring young engineers to venture out into the hinterland and set up its first village branches. They proved to be ingenious in mastering a new technology and convincing village leaders and people of influence to invest in solar systems. This helped popularize solar power, but still, only a few villagers could afford it. This, however, changed for the better when Shakti later introduced customer financing with one to three years to repay. The engineers also directed their energies toward the small businesses that abound in rural areas. They lost no time instructing barbers, tailors, carpenters, and the owners of grocery shops, pharmacies, and bicycle repair shops how they could increase their profits by working longer hours with the benefit of solar electricity.

Branch engineers sat down with each of their potential customers and calculated a) how much extra income they could earn per month, and b) how many months it would take for them to pay for the solar system. They discussed how much power was necessary given how many lamps, appliances and outlets a customer had. They also visited their customers monthly in order to service the systems and make sure their investments paid off.

News of increased income with solar power spread fast, and soon villagers were approaching Shakti engineers with surprisingly good business ideas. One example was that of a travelling food vendor and his grocery cart. His idea was to place a solar panel on top of his cart in order to power a lamp and cassette player as he cycled through the villages. “When people hear popular Bangla songs they all gather around my cart to enjoy the music,” he told the branch engineers. “They buy tea and sweets. With bright solar light and music I can sell food until midnight.”

“We didn’t have to teach him anything about his business,” recalled the branch manager. “All we did was calculate that he could afford a 25W solar system for 310 Taka a month and still make a profit.”

One major problem still persisted, however: even with additional working hours, many businesses were too small to generate enough profit to afford a solar home system. In response to this, Shakti began experimenting with a micro-utility model in village bazaars whereby

one shopkeeper buys a solar system and then shares the electricity it produces with neighboring shops for a small fee. This gives the owner of the solar system the advantage of added income and provides his or her neighbors with cheap access to solar electricity. Shakti, however, would not make micro-utilities part of its business until it had worked out a special financing model and tested it at different branches. One example of such a test is the case of Mr. Gazi, one of thousands of entrepreneurs who own a solar system. Typical for rural Bangladesh, he runs a small shop at a village market and earns a modest monthly income of about 5,000 Taka; not typical is that he can afford a 50W solar system for five times more than what he earns in a month.

The Solar Energy Entrepreneur

Mr. Gazi can afford the solar system because he earns money using it. In addition to selling groceries at the market, he is a small-scale energy service provider, a micro-utility, serving a clientele of three. His solar system powers four lamps, but he uses only one to light his shop. He rents the other three lamps to his neighbors, shop owners like himself. All four benefit from solar electricity. Mr. Gazi profits from the monthly rental fees and Shakti's special credit terms for micro-utility owners: only 10% down payment, no service charge, extended repayment period to three and a half years, and ongoing technical support from a nearby Shakti branch. In addition to this, Shakti provided one solar lamp for half the price to help Mr. Gazi get started.

Shakti now provides training, financing, and technology to more than 20,000 micro-utility entrepreneurs, reaching low-income villagers like Mr. Gazi who otherwise could not afford a solar system. Everyone benefits, and the company learned about a new sector of the market from its low-income customers. For example, what these entrepreneurs feared most was the risk of a micro-utility business: What if it fails and they are stuck with paying off an expensive solar system?

The thousands of micro-utilities now in operation are run by shopkeepers and private households, as well as cattle and poultry farmers who invested in biogas. The micro-utility model, therefore, varies for low-income shop owners like Mr. Gazi and for better-off poultry farmers who can afford a biogas plant. Shakti's flexible customer financing and reliable service, however, remain constant. Most of all, micro-utility entrepreneurs signify Shakti's determination to succeed in a low-margin sector of the market in order to help rural communities thrive. Micro-utilities work because Shakti shoulders some of the risk by keeping the system operational, training the micro-utility owner free of cost, and

helping customers avoid repayment problems. If necessary, Shakti takes the solar system back.

The Biogas Entrepreneur

"When introducing a new product, we need customers to demonstrate its benefits," an experienced branch engineer explains. "Let people see the technology, touch it, talk about it at the market. Let them discuss with biogas pioneers and hear firsthand from customers like Mr. Maola why he has invested in his third biogas plant."

Mr. Maola raises 3,000 chickens on his farm near the Dhaka airport. When you talk to him, you sense at once that he is an entrepreneur with heart and soul. He quickly recognized the market opportunity for a biogas micro-utility near Dhaka. Liquefied petroleum gas (LPG) for cooking fuel cost him 1,800 Taka a month in addition to the 1,000 Taka he was paying for firewood. Moreover, a biogas plant could also be put to good use for what usually just cost him money to remove: the huge amount of dung produced by his 3,000 chickens.

Mr. Maola first invested in a $6m^3$ plant and easily found biogas customers in the densely populated area outside Dhaka. Shakti technicians laid the pipes to connect with neighboring houses and civil engineers were on hand for technical assistance. Everything worked out better than expected, and soon more neighbors than Mr. Maola could accommodate wanted biogas. He invested in a second $6m^3$ plant and later in a third ($4.8m^3$). His plants now supply twenty-three families with biogas, generating an income of 8,050 Taka per month (his average monthly income prior to investing in biogas was 10,000–12,000 Taka). He has full ownership of two biogas plants and will finance the third in less than two years with a loan from Shakti.

Like thousands of other micro-utility owners, Mr. Maola is a local entrepreneur. The biogas plants digest local resources. The gas produced sells locally, which helps both the entrepreneurs and their village customers save on wood and imported kerosene. Local technicians and masons earn money by building and maintaining the biogas plants, and Shakti trains local technicians for its branches. The money they earn stays in their villages, helping them thrive.

Undeveloped communities are full of hidden opportunities to create wealth for their villages, but they need an entrepreneurial company to figure out how to turn these into business opportunities so villagers can benefit.

Mr. Khaledur, for example, showed little interest in a biogas micro-utility since neighboring houses were too far away. Instead, what piqued the cattle farmer's curiosity was how he could become a supplier of organic fertilizer. The branch engineer calculated that his biogas plant could yield about 20,000 Taka worth of bio slurry per year. It was a promising business opportunity for a farmer who was fattening thirty oxen for the upcoming Eid festival, and also for Shakti's newly developed organic fertilizer, *Jaibo Shar*. Farmers in Bangladesh are increasingly dependent on imported chemical fertilizer. Thus, if bio slurry is marketed successfully, farmers could profit from an abundant supply at local markets, and biogas owners like Khaledur, from a new source of income. The fertilizer business further adds to the village economy because the production, collection, and refinement of bio slurry create local jobs.

None of these businesses are easy to implement. None are as simple as the above examples make them sound. Shakti's organic fertilizer required months of testing against chemical fertilizer and a government license to market it commercially. Shakti had to hire agricultural experts for quality control and find ways to dry, package and distribute bio slurry for local markets. Biogas technology had a 30 year history of problems on the delta. Plant construction for Shakti's underground model takes fifteen to twenty days, and earthwork is often impossible during monsoon rains, for groundwater or sediments can enter the plant, causing problems. Finally, when cattle die or farms are sold, the plant cannot be moved to a new location.

Businesses with improved cook stoves were no easier. Shakti introduced the stoves in 2006 to improve health conditions in village kitchens, but it took four years of stove redesign and convincing the cooks before they accepted a stove different from their traditional *chula*. For one, Shakti's training program for local technicians to construct the stoves failed: the first stove models were too difficult for villagers to build, and were problematic during seasonal flooding. Engineers went back to the drawing board, but Shakti persevered.

In 2010, Shakti's engineers designed an improved cook stove which came ready-made from one of the company's 200 stove factories and could be marketed by Shakti-trained women entrepreneurs. Within a year of launching the new model, Shakti increased stove installations fourfold. In the same year, Shakti also (and finally) received the government license to market *Jaibo Shar*, and is now training entrepreneurs to take it to market. Finally, to improve business for biogas entrepreneurs, Shakti launched a pilot project with portable biogas plants made of fiberglass which could be installed in two to three hours, even during the rainy season.

The entrepreneurs described above are more than simply random examples of small-time village dealers in stoves, biogas or electricity. They are early role models of a new class of rural energy entrepreneurs. They require risk on the part of Shakti and an extra effort to cultivate. Were Shakti out for short-term profit, it would hardly cater to them. Shakti, however, believes that there will be many entrepreneurs in the future and that in the long term, they will be the ones to grow the market.

Turning Villages into Manufacturing Hubs

When international donors predicted in 2005 that the potential market for solar home systems, biogas plants and cook stoves could be in the millions in Bangladesh (Grameen Shakti, 2005), Shakti had installed fewer than 60,000 solar systems, 30 biogas plants, and had not yet launched its stove program. These numbers, however, are misleading. Shakti had an ambitious program and was already planning for major growth: 130,000 installed solar systems by 2007, for example. What concerned the company as early as 2005 was who would do what was necessary to develop the rural market—the installations, maintenance, and marketing.

Shakti is a 100% service company—from installation and maintenance to financing, training and repair. This pays off in the long-run, but only if you have enough trained staff to do the job. Moreover, Shakti works in a country with more navigable waterways than (bad) roads, and thus logistics are a nightmare. To keep its branches stocked, all system components have to be transported from the capital, Dhaka, to hundreds of branch offices throughout Bangladesh. Shakti thus responded to the challenge with a plan to set up village technology centers for local production of solar home system accessories.

The Grameen Technology Centers, as they are called, are Shakti's boldest innovation. They are managed by women engineers, who, like their male colleagues, live, work and train in rural communities. Like everything else in rural business, the centers will take time to staff and develop, especially because it is not common in Muslim society for young, unmarried women to live and work in villages far away from their families. Shakti first set up five pilot technology centers in different parts of rural Bangladesh. Each was staffed with three women engineers to manage all local production and repair of lamps, mobile phone chargers, DC-DC converters, and charge controllers.

How these centers developed into village manufacturing hubs was exciting enough to fill an entire chapter in my book, *Green Energy for a*

Billion Poor (Wimmer, 2012). Of importance in this article is how these technology centers function as incubators for a further innovation: the village energy entrepreneur. The production units also function as training centers for village women and thus advance energy entrepreneurship far beyond the micro-utility approach. The candidates for this training are unemployed women between the ages of eighteen and thirty with at least eight years of schooling, with preference for women who are either widowed or divorced—women like 23-year old Sayma and 18-year old Bhulana, for example. Both trained at a Grameen Technology Center to become energy entrepreneurs, are self-employed, and earn an income producing solar accessories. With the help of a branch technician, Sayma also learned to install solar systems for extra income; both young women do minor solar repairs for friends and neighbors. Shakti pays the entrepreneurs according to what they produce and helps them build their customer base by providing a signboard in front of their houses for everyone to see, announcing that they are "Solar Technicians Certified by Grameen Shakti."

Sayma has become a successful freelance technician and pays two of her friends to help her increase production. She earns up to 7,000 Taka a month, deposits 1,000 Taka of her income in her savings account and gives ca. 5,000 Taka to her mother for family expenses. Bhulana, divorced and with a 5-year old son, likewise contributes on average of 5,000 Taka per month to her family's income, which is as much as her father earns in a good month selling ice to fishermen. In an unpredictable rural environment, this is a substantial increase in monthly income for poor families, many of whom depend on one male earner.

Seven years after the village technology centers were launched, they are turning into solar manufacturing hubs. Forty-six technology centers guarantee a continuous supply of solar system components to over 1,000 branches. By 2010, branches were installing 20,000 solar systems a month; by 2012, 1,000 systems a day, and none of which would have been possible without local production and energy entrepreneurs.

The demanding task of keeping the branches supplied also shifted from the head office in Dhaka to the field. Branch managers inform divisional managers of their product needs for the upcoming month, and the divisional managers coordinate the supply from the technology centers. But it is the women engineers who keep everything on schedule, do quality control, and prevent breakdowns in the supply chain. They travel to the villages, train the novices, and motivate the freelance technicians. "My division has 400 energy entrepreneurs working at home, at the technology centers and in their villages doing solar system mainte-

nance," explains a divisional manager. "That the women engineers can coordinate all of this is an art. But it actually works."

In the future, Grameen Shakti's technology centers will be at the forefront of the company's organizational development. For instance, in November 2012, one of the world's leading electronics companies agreed to train Shakti engineers to produce its advanced charge controllers and other electronic equipment. There is no doubt that much still lies ahead for Shakti's technology centers and its young women entrepreneurs. They will bring down the cost of products and services and lay the foundation for growth for a market that will absorb millions of solar systems, cook stoves, and biogas plants. True, only a few hundred of these small entrepreneurs earn enough to feed a family. But it is a start. Village customers trust their expertise, and branch engineers are relieved that they can share their growing workload with entrepreneurs like Sayma and Bhulana.

The Art of Rural Business

"Why is it when development professionals think about the poor and disadvantaged, the best they can come up with is a handout? Poor people are entrepreneurial, otherwise they couldn't survive" (Muhammad Yunus, 1990). Muhammad Yunus often posed this question to experts when the Grameen Bank was still in its infancy, and when microcredit to the poor for small businesses was an exotic approach to development. To this day, people often see the poor as passive victims of poverty, disorganized, uneducated and undisciplined. The reality is that they have learned to be enterprising and flexible enough to survive in a tough rural environment. Sporadic incomes force them to actively manage their lives in order to keep food on the table and survive the uncertainties of rural life.

It is therefore typical for rural people to have more than one source of income, even if they earn moderate incomes and are government employed. Teachers do private tutoring, and own grocery shops and pharmacies at the market for evening business; farmers earn additional income as part-time tailors and carpenters, and do doctoring on the side. Some do better than others, some make better choices, but they all work in an unpredictable rural environment. It sometimes takes only a tiny blow to send them into a downward spiral: a bad harvest, an accident, an illness.

Rural life is unpredictable, and yet millions of villagers have benefited, within their lifetimes, from Grameen's innovations in banking

and renewable energy. But what we so often hear is that villagers in developing countries are too poor and too difficult to serve. Perhaps, then, we must train our minds to see the elephant in the room and ask: If this is so impossible, how is it that the Grameen Bank has 8 million borrowers and Shakti has succeeded in installing one million solar systems in poor rural communities? Part of the answer lies in the fact that the bank and Shakti offer reliable services people can depend on. Shakti has 11,500 trained engineers and technicians in the field who guarantee service to their village customers even in times of disaster. They live, work and train in the villages, become part of the fabric of rural life, and understand the rural environment.

More fundamental to understanding Grameen's success is the philosophy which guides its business. Both companies view village people as creative and entrepreneurial with the potential and the will to improve their quality of life, and there is where they need Grameen's help. Women, for example, may have the right to own property, but they depend on the social structure of the family to use this right. For this reason, the bank grants a housing loan to a woman borrower only if the title of the land and the house are in her name. No deed, no loan. Shakti promotes poor women as freelance entrepreneurs by shouldering part of their risk, by financing them, and by providing equipment and know-how.

Improving the quality of villagers' lives, therefore, is not simply about increasing their incomes and bringing wealth to the village, but about enhancing people's ability to help themselves and gain control over their lives. Similarly, the economist and philosopher Amartya Sen sees both the process and the outcome of development as increasing freedom and control over one's life: "The quality of our lives should be measured by our freedom, not by our wealth and income" (Sen, 1999). Education, income and health are therefore aspects of freedom because of what they allow human beings to achieve. This is Shakti's motivation for enabling poor woman divorcees and school-dropouts to take part in the life of the community and enjoy self-respect as certified solar technicians. Neighbors say to Sayma's mother, "Oh, I hear your daughter works with electronics." That villagers trust her expertise and bring her lamps to repair means as much to her as an income.

What looks like a simple concept for creating rural energy entrepreneurs turns out to be a fine-tuned approach in practice, one that reveals prominent features of the art of rural business: the spirit to create business in unconventional ways, the attitude to treat rural people as resourceful entrepreneurs, the intention to do business anywhere, and the deep conviction that rural people can make an income and lead a better life.

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INNOVATION DYNAMICS, BEST PRACTICES, AND TRENDS IN THE OFF-GRID CLEAN ENERGY MARKET

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Abstract. In 2008, the authors of this article developed a "sector strategy" for the Global Social Benefit Incubator (GSBI) at Santa Clara University with the purpose of facilitating collaborative learning between BoP ventures, technology and business model innovation, and positive ecologies for cluster development. This article summarizes insights from the GSBI's involvement with 60 ventures in the BoP clean energy sector.

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Base of the Pyramid (BoP) markets for off-grid clean energy—the 2+ billion people in low-income communities with unreliable access to electric power or none at all, who pay high prices for imported fuels, or who rely on biomass for cooking over open fires—represent a huge and growing opportunity. Now-outdated estimates based on national household surveys suggest that this market was worth at least $433 billion seven years ago (Hammond, Kramer, Tran, Katz, & Walker, 2007). With the addition of substantial demand for recharging mobile devices, efficient LED lights, the discovery of a host of specific energy load market segments by social entrepreneurs, and rising incomes in developing countries, we believe that this market now exceeds $1 trillion. The disconnect between the size of this market and current penetration rates of less than two percent (Bardouille, 2012) suggests a significant opportunity for social entrepreneurs and impact investors who seek to help in bringing off-grid BoP clean energy markets into the economic mainstream.

Several factors contribute to this opportunity. Globally, growing concerns about climate change have stimulated huge public and private sector investments in renewable energy technologies. In the solar market, for example, recent declines in the price of solar cell components have brought solar systems within the buying power of low-income consumers. The steady advance of technology has improved the performance and reliability of solar products, is yielding combined solar/IT system solutions for serving markets via mobile telecom networks, and is leading to a wide variety of niche products. At the same time, growing BoP consumer demand and ability to pay is expanding the potential market—if last-mile distribution and other bottlenecks can be resolved.

This article identifies trends and best practices in overcoming barriers to growth in the off-grid clean energy market. It is based on an analysis of over 60 social enterprises in this sector and the tacit knowledge of the entrepreneurs behind these ventures. All of the BoP clean energy enterprises recognized by the Tech Awards[1] between 2001 and 2012 are represented, as well as all of the BoP clean energy enterprises selected for participation in the Global Social Benefit Incubator (GSBI) at Santa Clara University between 2003 and 2012. Access to profiles for each of these organizations is available through the Energy Map (www.energymap-scu.org).

[1]An international program co-sponsored by the Tech Museum of Innovation, Applied Materials, and the Center for Science, Technology, and Society at Santa Clara University. See box on p. 123.

Over the twelve-year history of the Tech Awards, a large percentage of the Tech Laureates in the energy sector have focused on BoP markets where the lack of access to energy and other vital services are barriers to escaping from extreme poverty. In addition to proof of concept and evidence of a superior solution relative to alternatives, the potential for replication and scaling are pivotal criteria in the final selection of Tech Laureates.

GSBI social enterprises are selected based on their potential to scale social impact. The most common social outcome metric across these ventures is the number of people with access to clean energy. The GSBI integrates distance-based education and an in-residence boot camp with intensive mentoring by seasoned Silicon Valley entrepreneurs and venture capitalists. Over 50% of the 160 enterprises that have graduated from this program have become economically viable with positive operating cash flows and significant increases in social impact.

CHARACTERISING THE DATA SET AND ITS SOCIAL AND EVINRONMENTAL SIGNIFICANCE

While several multi-national companies are engaged in serving off-grid energy markets, multi-national corporation (MNC) involvement is primarily a CSR activity. All of the 60 organizations in our data set are social mission enterprises—their purpose for being is to address the need to increase access to affordable clean energy for the poor. Most seek to be economically self-sustaining and nearly half are for-profit businesses—45% are structured as for-profit organizations, 28% are hybrids, and only 27% are non-profits. The for-profit enterprises seek to leverage mission aligned investment capital and are pursuing the long-term goal of achieving organic growth through earned income, while hybrid ventures rely on a combination of contributed or grant resources and earned income. To achieve their social mission, the founders of these enterprises must simultaneously innovate along three dimensions—technology localization, business models, and adaptation to ecosystems characterized by extreme infrastructure and distribution constraints. Limited access to financial and human capital as well as other resources has made frugal innovation a necessity for all of these ventures. These constraints are especially onerous in rural markets, which are the primary focus for more than 80% of our sample organizations.

Although extremely fragmented, the BoP energy market holds tremendous potential as an engine for increasing human productivity, material standards of living, and quality of life. The use of kerosene lanterns for

room and task lighting and the even more widespread use of biomass fuels for cooking are an *energy poverty trap* at the base of the pyramid. The poor pay more for these inferior and harmful energy sources than wealthier customers who have access to modern light and power. Inefficient stoves and kerosene also contribute to severe respiratory and other health impacts, as well as high carbon emissions and environmental degradation. In addition, the lack of access to power and light limits household earnings and reduces the opportunity for children to study and learn in the evenings, thereby contributing to an intergenerational poverty trap.

Deployable Technologies

Twelve technology categories are represented in this sample. Each is modular and can be sized to meet specific energy load requirements and the economics of buyer demand in widely distributed, low density environments. In the BoP, demand-based solutions generally involve the *micro-provisioning* of energy. For example, the average solar home system is about 50 watts, community scale gasification plants typically provide up to 7 hours of energy per day, and task solutions are targeted at narrowly defined load requirements such as milk chilling, sewing, water pumping, or as back-up energy with specific economic value propositions in regions with unreliable grid power.

The frequency of various technologies in use across our sample of 60 enterprises is summarized in Table 1. Both biomass and solar technologies are widely deployed solutions. Our work with enterprises in these areas has identified a number of recurring patterns in mechanisms for overcoming local barriers. For small hydro, wind, and fuel cell ventures in the Energy Map, our review suggests that, although the evidence is more limited due to small sample sizes, these are also economically viable technologies with significant potential for social impact in specific regional contexts.

Geography and Mental Maps of "Scale"

Several of the geographically focused enterprises in our sample have experimented in developing solutions that span more than one technology. This has enabled them to leverage local market knowledge and adapt product offerings to serve multiple market segments. In some instances, these product extensions build on competencies in a particular core technology. Fixed panel solar ventures, for example, may develop solar lantern technology offerings to serve those who cannot afford their entry solar home systems and subsequently expand into commercial or even community scale solutions. In contrast, community-based NGOs

are more likely to be involved in developing offerings that span both efficient biomass cooking stoves and solar lanterns. Their ability to extend offerings across multiple technologies can contribute to greater market penetration and depth of impact *within a particular region* or territory (Desa & Koch, 2013). This is a desirable attribute for acquiring donors or investors with a particular geographic focus. By spreading the costs of developing distribution channels across multiple products, it can also contribute to capital efficiency. At the same time, however, being spread thinly across multiple changing technologies can undermine the ability to develop the formal knowledge, efficient systems, and competencies needed for replication *across wider geographic territories*.

Technology	No. of Organizations*	Example
Biodiesel	**7**	Mali Biocarburant (Mali)
Biomass Gasification	4	Husk Power Systems (India)
Efficient Burning Stoves	11	Potential Energy (Ethiopia)
Biomass Briquettes	3	Nishant (India)
Biogas Digesters	4	Cows to Kilowatts (Nigeria)
Biomass Power (Total)	**30**	
Fixed Panel Solar	22	Grameen Shakti (Bangladesh)
Portable Solar	18	Tough Stuff (Africa)
Solar (Total)	**40**	
Small Hydro	1	Practical Action (Peru)
Wind	1	Blue Energy (Nicaragua)
Human Power	4	IDE (India)
Fuel Cells	1	AEDC (South Africa)
Other (Total)	**7**	
Efficient Grid Energy Use	4	E. Wind Laboratories (Nigeria)

Table 1. Sources of Power: Deployable Technologies
*Total (81) exceeds sample sized due to enterprises with scope that spans more than a single technology.

ATTRACTIVE SEGMENTS

While the BoP clean energy sector lacks the cohesiveness of more established industrial markets, it can be categorized into four primary segments. In our research, we consider empirical regularity in the pattern of findings within a given segment as evidence of learning and adaptation. As mentors to ventures in this sector, these findings and the direction of sector-wide change over time inform our insights about the antecedents of firm survival and the emergence of best practices. Identifying robust patterns of success in localizing technology, business model innovation, and adaptation to resource constrained environments is critically important in mitigating the risks associated with the introduction of new products in new markets.

Using the frequency or population of ventures in a given segment as a proxy for learning, the off-grid light and power segments reflect areas in which the greatest learning is likely to be occurring through the normal process of variation, adaptation, and selection. Our findings and work with BoP social entrepreneurs within the energy cluster suggest that greater levels of entrepreneurial ferment are leading to increases in the functional value of technology solutions *and* the perceived value or acceptance of these solutions. The activation of these markets facilitates the benchmarking of products, business models, and market creation strategies. For investors, awareness of such benchmarking may reduce technological risk and the liability of newness in previously underserved markets. The findings in Table 2 suggest that off-grid community scale power, home and business energy applications, and portable device market segments are poised for "take off" or acceleration.

(1) Off-Grid Light and Power	**Total 54**
- Centralized, community-scale light and power	9
- Individual home and business light and power	20
- Portable power products	25
(2) Clean Cooking	**Total 20**
- More efficient stoves	11
- Clean fuel sources	9
(3) Motive Power— powering engines and generators	**7**
(4) Powering specialized products and services	**11**

Table 2. Market Segments (by Use)

In Table 3 below, several of the more general segments in Table 2 are further refined to identify targets of investable opportunity, with large markets and identifiable economic buyers as units of analysis for assessing the viability of business models (e.g., region, community, household, commercial scale). In several of these target areas, favorable macro trends exist (e.g., cheaper equipment, value chain specialization, standards, enabling public policy, increasingly favorable price-performance comparisons with alternative or extant solutions). In these contexts, value propositions and unit economics or incentives to buy can be compelling. In addition, the success factor checklists from proven business models can serve as guides for stress testing the expense and revenue assumptions in enterprise growth plans.

Technologies	Positive Unit Economics
Biomass	
- Biofuel	- National region
- Biomass Gasification	- Community scale
- Bio-digesters	- Commercial scale -Household scale
-Efficient stoves	- Household scale - Commercial scale (limited evidence)
Solar Power	
- Fixed Panel	- Household and commercial scale - Community scale (limited, but promising)
- Portable	- Household and individual use cases
Other	
- Small Hydro	- Community scale
- Fuel cells	- Household scale
- LPG	- Household and commercial scale

Table 3. Technology Subsectors and Unit Economics

Column two of Table 3 identifies investment target areas and the appropriate units of analysis or aggregation for assessing the scalability of business models. There is significant potential for social impact returns in these target areas. In the section that follows, we identify areas in which the experience and tacit knowledge of social entrepreneurs can ground investor understandings of the financial, time, and other resources that may be needed to realize this potential. This insight from

the field is needed to avoid disconnects between investor expectations and the complexity of BoP market realities (Kohler, Kreiner, & Sawhney, 2011; Koh, Karmchandani, & Katz, 2012).

SUCCESS FACTORS

From the authors' work with dozens of the BoP clean energy ventures in this study, it is evident that a growing body of field-based knowledge exists in this sector. While yet to be formalized, it is driving bottom-up innovation through on-the-ground networks of practice that are little understood by outsiders. The GSBI Energy Sector initiative at Santa Clara University is a bridge to these networks. It taps into this practice-based knowledge and integrates these insights into formal programs of instruction and mentoring, as well as broader efforts that address the need to build institutional and financial systems to facilitate growth. Illustrations of this field-based knowledge can be seen in Figure 1 below—one of many graphic recordings from a 2011 GSBI clean energy sector workshop with eleven (18%) of the ventures in our sample of 60 social businesses.

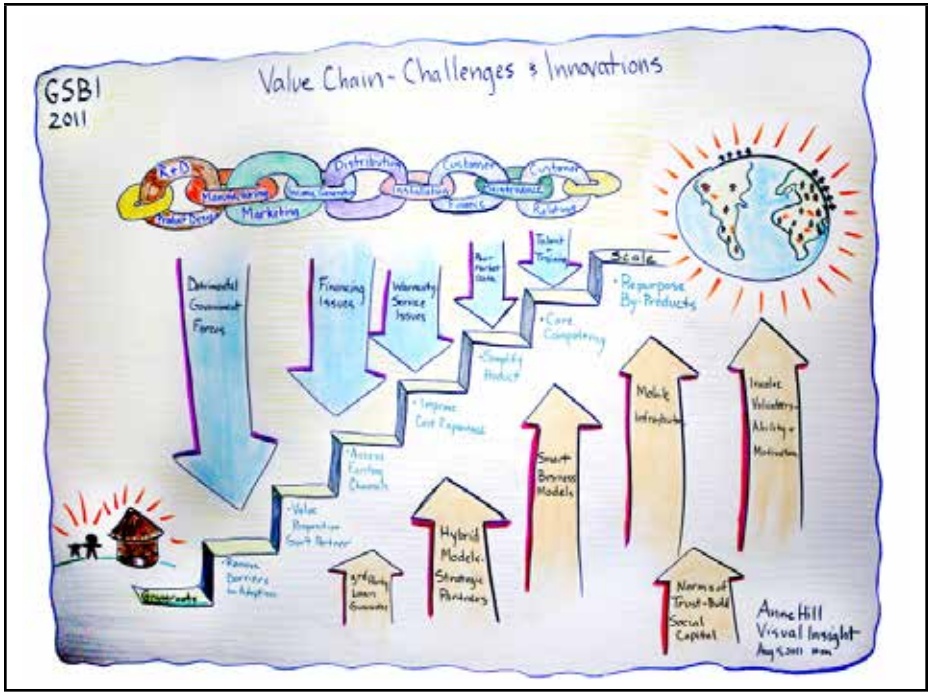

Figure 1. Field-Based Knowledge: Value Chain Innovations to Enhance Scaling Potential

Across the spectrum of clean energy solutions in our study we have identified three factors that are key to the success of start-ups: market creation, the integrative capacity of leadership teams, and feedback loops for enhancing organizational learning and social impact.

Market Creation

To be successful in addressing needs in off-grid markets, start-ups must increase the *functional* value of technology solutions as well as the *perceived* value and acceptance of product or service designs. Our work with energy cluster ventures has identified three "stress test" dimensions for assessing the viability of market creation investments.

Social Marketing. Customer education is a pivotal factor in market creation and often underestimated as a critical expense in business models.

Brand Building. Trust is a critical factor in market entry and the ability to become a trusted brand is essential to market penetration and overcoming the "market spoilage" from cheap solutions that have failed in the past. Investing in product aesthetics, durability, and after market service is important in brand building.

Customer and Supplier Finance. Even with extreme affordability as a design criterion for entry products, customer finance trumps price in BoP contexts where the "upfront" cost of ownership is a more important factor in purchase decisions than incrementally lower prices. Similarly, the working capital needs of SME suppliers and micro-franchisees must be addressed where they factor in the unit economics of value chain stakeholders.

Integrative Capacity

Given the need to build and integrate complex value chains, investments in overcoming human capital constraints and organizational development are significantly overlooked factors in many business models. Overlooking these factors contributes to hubris, especially regarding execution capacity and distribution.

Organizational scaling mechanisms—skills, structure, processes, and systems—are generally underdeveloped and a major risk factor in BoP start-ups. As Larry Bossidy and Ram Charan (2002) posit in their best selling book, *Execution—The Discipline of Getting Things Done,* people and operations are key to execution. In our work with many of the ven-

tures in this sample, expense and growth capital forecasts frequently underestimate the importance of human capital and the need for technical services support, strengthening operating systems, and deepening organizational leadership.

Distribution. Last mile distribution is the single most difficult challenge to overcome in serving fragmented BoP off-grid energy markets, nearly 80% of which we estimate are in rural areas. Incentives and unit economics, or an understanding of how each link in the value chain *makes money*, are key success factors in agent-based distribution systems. The development of robust and stable rural distribution systems remains a fundamental obstacle that merits additional attention in efforts to catalyze diffusion and strengthen market penetration.

Enhancing Learning and Social Impact

Scale is best achieved by "demand-based" solutions with clear evidence of an economic surplus for the poor. This surplus can be measured in both energy savings *and* increases in productivity, household earnings, or quality of life due to energy access. In the absence of the ability to capture benefits locally, environmental externalities are less likely to be a driver in purchase decisions for those at the edge of extreme poverty.

FIELD-BASED KNOWLEDGE AND VALUE CHAIN INNOVATION

The graphic recording in Figure 1 depicts the collective intelligence of the 2011 clean energy workshop participants as a force field with barriers as "down" arrows. For investors, these can be thought of as risk factors. Enablers are depicted as "up" arrows. Evidence of their existence and incorporation into business models should be viewed as positives by investors. A linked chain appears across the top of this graphic as a metaphor for the key elements in BoP value chains. A practitioner guide to "best practices" for taking grassroots learning to scale is depicted as ascending steps.

Participants in this GSBI workshop and across our wider sample see the clean energy field as evolving in the direction of increased value chain specialization with fewer successful ventures likely to provide vertically integrated solutions. They see increased opportunities for "pure play" design, enabling mobile technology, manufacturing, distribution, and finance entities. Partnerships with the robust rural bank sector, for example, are seen as an effective alternative to self-financing. In a field that is populated by a growing number of new entrants and in need of becoming more rationalized, they envision increases in specialization

and combinatory innovation occurring through value chain partners. Similarly, third party loan guarantees, hybrid business models that can leverage grants and volunteers for capacity building, mobile payment systems to facilitate micro-payment schemes, public-private partnerships, and alliances are all seen as potential mechanisms for creating novel and effective business models. Here, again, the collective intelligence of social entrepreneurs can aid investors who lack contextual perspectives about "what works" and "why" in BoP markets.

Best Practices

Business models involve tradeoffs. The choices that are made regarding the nature and scope of business activities and resource requirements are driven by a firm's value proposition and its mission. They can be translated into the expense and revenue drivers for creating customer value and ensuring the financial viability of an enterprise. In established industrial sectors and markets with several or many competitors, organizations deliberately choose a particular set of activities to deliver a unique mix of value to specific target customers. Differentiation, value, and low cost strategies are, essentially, the sum of these choices or decisions.

BoP markets are different. Ventures are often competing against non-consumption, customers with limited and irregular cash flows are risk averse, and "low cost" provider is the only viable position. Paradoxically, brand building in these new markets is frequently contingent on the ability to provide and service products through paraskilled field coordinators and remote last mile distribution networks comprised of minimally educated agents. The need for total product solutions that combine ease of use and durability with low cost and greater convenience requires BoP ventures to pursue disruptive innovation strategies that can easily overstretch the resources and integrative capacity of their organizations.

We have identified several recurring business model themes and best practices from the 60 clean energy ventures examined in this study. These practices reflect strategic tradeoffs and the appropriate focusing of resources to create organizational competencies in each of the following areas:

- ***Product Design.*** Product design and localization are key success factors. For the 55 non-commodity ventures in our database, localizing technology in BoP markets involves choices regarding product or technology design and whether it should become an in-house competency or an outsourced activity (75% percent of these ventures

see product design as an essential in-house activity). The ability to localize technology is a critical success factor for the majority of BoP energy ventures—for many, product design is a key differentiator.

- ***Standardization vs. Customization.*** Winning strategies balance standardization and customization tradeoffs. More than two-thirds (35) of the 51 product ventures in our sample offer standardized products. Customization was concentrated in two subsectors: a) community scale light and power and b) solar home and business light and power. Low watt or energy output systems appear to seek brand differentiation through the user-centered design of *standardized* products for specific customer *segments* as opposed to customization for individual customers or households.

- ***Market Segmentation.*** Successful business models are based on effective market segmentation—the poor are not a homogeneous mass market. While solar lantern ventures offer standardized products, they increasingly offer a *suite* of such products to increase market penetration by addressing various BoP segments—from entry products such as $20 lanterns for the BoP $500–$1000 annual per capita purchasing power parity market, to multiple LED solar kits for the BoP $1000–$1500 segment. In some instances, solar product suites extend all the way from lanterns to microgrids. Evidence of venture capacity to execute across this wider product spectrum, however, is limited.

- ***Manufacturing and Assembly.*** Local assembly facilitates the cultural embedding of solutions and value creation. Given the high percentage of firms with standardized products, the level of firm involvement in manufacturing and/or assembly was somewhat surprising. Fully 62% of the product ventures in our sample were involved in manufacturing or local assembly—primarily the latter. Both of these functions were outsourced by only 38%. The rationale for involvement in assembly is closely linked to the need to develop the local knowledge needed to support after-market warranty and service capabilities. Local warranty support is important to becoming a trusted brand. Local assembly also creates livelihood opportunities and embeds technology solutions in local culture (Wimmer, 2012). In some instances, local assembly of standardized components may also reduce import tariffs.

- ***Distribution.*** Last mile distribution is a make or break issue. Due to infrastructure deficits and inefficient markets, the area of greatest experimentation in serving BoP market segments is distribution. Most ventures develop and experiment with a variety of channels: 7% report using existing retail channels, 33% work through partners such as independent distributors, and 53% have created their own direct sales channels for either retail (30%) or contract and commercial sales (23%); 28% developed sales channels through local community organizations, cooperatives, or self-help groups; and, 25% reached last mile markets through micro-franchise agents. Examples of country-level master distributor models, regional trading companies, and multi-tier franchising exist for less complex products like solar lanterns and stoves, but more complex product solutions like solar home systems and community scale biomass gasification require the replication of organizational capabilities through enterprise branching.

- ***Affordability and Customer Finance.*** Low-cost business models and access to credit are essential to the creation of inclusive markets, and frugal innovation acumen is essential in product design. Nearly half of Energy Map ventures (29 of 60) place a major emphasis on extreme affordability, and 43% leverage donor funds for capacity development expenses to reduce the costs that are passed on in end-user pricing. To make above entry products affordable, customer finance through partner organizations (28%) or in-house financing (22%) is seen as critical to minimizing upfront costs for solar home systems, higher-end lanterns, solar kits, and cooking stoves.

- ***Legal Structure and Firm Financing.*** Alternative legal structures are a key strategic factor in firm financing. A minority of Energy Map ventures (27%) have chosen to operate as nonprofits, with an additional 28% operating as hybrids, and 45% choosing to be for-profit entities. Friends, family, and volunteers were critical to early stage bootstrapping for 25% of these ventures, while grants and donations were a significant source of funding for 60% of the BoP clean ventures in the Energy Map database. In addition, loans and equity were used to fund development and growth in 50% of this sample. A minority (17%) has sought or plans to seek carbon credits as a source of firm financing, although all agree that certification is costly.

- ***Scaling Strategies.*** Many ventures are not built to scale, and some are best suited to scale within a narrowly focused geography. Increasing the depth of market penetration by creating product suites with price points for lower and higher end segments in *existing* geographic markets and offering *new* products or services through *existing* channels are preferred scaling strategies for 27% of the Energy Map ventures. By comparison, 40% seek to expand to *new* geographic markets either through new distributors (17%) or the creation of venture branches (23%). While a variety of scaling strategies are evident, impact investors should note that only a minority of ventures seek geographic expansion. A clear tradeoff exists between deepening market penetration within a region and market expansion. For either strategy, investors should be alert to the need for a realistic appraisal of the unit economics of supply chains in projecting investment returns.

As mentors to dozens of BoP ventures, the authors believe that, in addition to facilitating firm survival, attention to the above factors will enhance the social and financial returns of investors. This onerous list of challenges suggests that leadership, human capital, and system considerations must become a more significant emphasis in efforts to design organizations for scale.

Promising Trends

Over the course of our decade of work with BoP energy ventures, social entrepreneurs have clearly demonstrated that demand-based markets exist. The willingness of customers to pay and the size of the market opportunity have driven the trend from NGO and nonprofit legal structures to hybrid and for-profit structures (28% and 45% of the sample in this study, respectively). At the same time, while technology design innovation continues to be driven from below, it is increasingly able to tap global innovation capacity. The process of technology adaptation to BoP needs has leapfrogged from bricolage solutions based on locally available materials to solutions that tap sophisticated global expertise and markets for standard components with ever improving price-performance thresholds.

The five trends that we have identified in our field work and summarized below will serve as positive tail winds for accelerating innovation and growth in the off-grid energy market.

1. ***A new wave of user-centered design will significantly accelerate market growth.*** Several examples of this trend exist. Selco and Grameen Shakti have kept product design and assembly close to the customer in order to develop a host of semi-custom solutions for refined market segments. In 2012, Shakti reached the one million mark in the number of solar home systems installed, and is installing nearly 1,000 systems per day (Wimmer, 2012). Similarly, d.light has now sold more than 12 million solar lanterns with standardized product suites for markets segmented by the ability to pay and other locally relevant criteria. Their products reflect the application of sophisticated user-design principles and best of breed components. Another example, this time of a clearly focused organizational competency in customizing solutions to fit local cooking practices in multiple regions, is Potential Energy, a cooking stove venture with core strengths in design and low cost IKEA-style packaging for local stove assembly. Andree Solser and Ashok Gadgil are among the many high tech product innovators who have zeroed in on BoP market needs. Like their counterparts at organizations such Angaza, Simpa Networks, and Promethean Power, they have a high potential to catalyze disruptive innovation.

2. ***Specialization in value chains is increasing technological innovation and is likely to increase future investment returns.*** In Africa, the off-grid energy market is growing at 90% per year (Bardouille, 2012). In our work, we have identified examples of similarly high growth rates in solar lantern sales at d.light and solar home system sales at Grameen Shakti (Wimmer, 2012). With the BoP energy market approaching take-off velocity, new entrants can now assess a sector landscape that is characterized by increasing value chain specialization and opt to focus on a particular niche, as Solar Sister and Onergy are doing with their distribution business models. Similarly, Simpa Networks has developed software-enabled electronics to facilitate mobile micro-payment systems that can be licensed by others and could virtually eliminate upfront costs as a barrier to rapid market growth for solar lanterns and solar home systems. Its pay-as-you-go pricing innovation uses cell phone SMS messaging for transmitting "top up" prepayments. Combined solar/IT systems could thus make energy more widely accessible via telecom networks. It is axiomatic that specialization leads to increases in pro-

ductivity and the rate of innovation. It also drives capital efficiency which, in turn, increases investor returns.

3. ***Market segmentation is sparking innovation in sizeable niche markets.*** In this article we have identified major segments, but large niche markets exist in health clinics, commercial sales, street lighting, back-up diesel, powering cell-phone towers, milk chilling, and numerous other areas. Around the world, cell-phone towers are being converted from diesel to renewable sources at a price of about $0.70/kilowatt hour. In the milk chilling area, Promethean recently received an order for 50 milk chillers from India's largest private dairy. In Nigeria, East-Wind Laboratories has developed an innovative inverter battery solution as a replacement technology for the huge back-up diesel market, and Act-if Electropower is focused on developing customized solar street lighting solutions for poor communities in Mexico.

4. ***Industry standards, market research, and trade shows facilitated by the IFC-World Bank, United Nations, and others are addressing concerns about technology failure rates and deepening market intelligence.*** Many participants in our sample have cited *market spoilage*, largely attributed to the flooding of markets with cheap products from China, as a serious consumer impediment. Lighting Africa, a joint initiative of IFC and the World Bank, has now "certified" the quality of 49 off-grid lighting products. If the standards-setting practices in other sectors are any precedent, this nascent work will significantly influence market developments through the benchmarking of competitor products and by stimulating interoperability in supplier ecosystems. Trade shows like the Third International Off-Grid Lighting and Trade Fair in November 2012 will also facilitate industry-wide collaboration.

5. ***Significant global improvements are occurring in the price-performance of system components and appliances.*** The costs per watt for solar panels has declined by more than 70% in the last five years and the efficiency of LED's has improved at a rate analogous to Moore's law in semi-conductors. The lumen output of low cost solar lanterns is now up to 100 times brighter than kerosene lanterns, with payback periods measured in months. Similarly, innovation is accelerating in bat-

tery and fuel cell technology, efficient refrigeration, and computers that consume one-twentieth the energy of conventional laptops.

Identifying Organizational Gaps

Based on our assessment of business model themes, best practices, and trends, we have developed seven "diagnostic" questions for assessing gaps in organizational capacity to scale.

1. Can the organization develop and maintain a core competence in localizing technology—either through product design or in customization of more complex products and systems integration?

2. Is the organization able to leverage market intelligence to refine segmentation strategies, specify appropriate product line extensions, and define technology roadmaps? Market intelligence is especially important for "distribution only" ventures like Solar Sister in Africa and Onergy in India.

3. Can the organization create distribution channels with positive unit economics and agent incentives?

4. Can the organization provide customer and/or supplier finance? The critical barrier here is the inability of the poor to afford beneficial products with a high up front cost. Software-enabled electronics which facilitate mobile transactions and tie micro-payments to the cash flow constraints of the poor are a potential substitute for customer finance (e.g., Simpa Networks).

5. Has the organization developed a path for becoming embedded in geographic and sector ecosystems through alliances that leverage specialized value chain strengths, mitigate barriers to firm survival, and enhance the organization's position as a trusted brand?

6. Does the organization have a capital efficient scaling strategy that rationalizes tradeoffs between narrow vs. broad geographic reach (e.g., "depth" scaling and the pursuit of holistic solutions to poverty alleviation through multiproduct or services channels vs. "breadth" scaling for a narrowly focused technology solution)?

7. Does the organization have the right legal structure for facilitating access to a spectrum of capital that is aligned with its mission, market creation challenges, and life cycle stage?

CONCLUSIONS

As emergent industrial sectors are stimulated and new markets evolve, they typically undergo a process of rationalization. This process is underway in the off-grid energy market. Through specialization, industry standards, market segmentation, and nascent trade associations that are beginning to act as focal points for cooperation and competition, the pace of innovation is quickening. Specialization within the off-grid cluster will accelerate innovation to address what technology historian Thomas Hughes (1983) describes as *reverse salients*, or the "choke points" in innovation cycles where focused talent and capital investment, as well as efforts to remove policy barriers, can unleash future waves of innovation and contribute to greater investor returns. These dynamics are catalyzing both technological and business model innovation in the BoP energy market.

When we began our work more than a decade ago, business models that enable the poor to afford solar did not exist. Over the course of the ensuing decade, the average poor family could expect to spend $1,800 on energy. Today, a significantly brighter 40 watt SHS solution would cost just $300, and provide not only superior light but cell-phone charging as well, and power for fans, television, and a computer. Evidence from a decade of work at Santa Clara University suggests that combinatory technology and business model innovation is set to drive expansion and deepen penetration in the off-grid energy market.

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BRINGING CLEAN ENERGY TO THE BASE OF THE PYRAMID

THE INTERPLAY OF BUSINESS MODELS, TECHNOLOGY, AND LOCAL CONTEXT

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Abstract. Social enterprises are providing affordable energy and environmentally sustainable energy to a small but growing percentage of the four billion people living on less than $2,000/year. Santa Clara University's Global Social Benefit Incubator (GSBI™) has worked with over 60 of these enterprises and profiled them on its Energy Map website. Based on this direct experience and associated research, the authors conclude that it is the interplay among innovative business models, quality technologies tailored to localized energy markets, and appropriate interfacing with local ecosystems that allows social enterprises to go to scale. This conclusion is supported by a review of prominent enterprises including Shindulai, Solar Sister, Angaza Design, Potential Energy, Selco, Husk Power Systems, and Practical Action.

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INTRODUCTION

As Koch and Hammond (2013) describe in the preceding article of this special issue, nearly half the world's population is living in energy poverty, defined as a lack of household access to electricity or the absence of a cooking stove that does not cause air pollution in houses (International Energy Agency, 2013). The effects of energy poverty are far-reaching, prompting UN Secretary-General Ban Ki-Moon to state that "without access to energy, it is not possible to achieve [the Millennium Development Goals]" (Ki-Moon, 2011). Economically, those who suffer from energy poverty fall within the "Base of the Pyramid" (BoP), which is defined as the four billion people living on less than $2,000/year (Prahalad & Hammond, 2002). Ironically, although they are the people on the planet with the least amount of disposable income, they are spending $500 billion annually on energy, primarily on inferior products such as kerosene lamps (Hystra, 2009). Clearly, a major development challenge is how to provide affordable and environmentally sustainable energy to the BoP.

Governments will not be able to provide sufficient energy to the BoP by simply building more coal-fired plants, distributing diesel generators, or subsidizing kerosene and liquefied petroleum gas, all of which are costly and contribute to environmental degradation. It appears more viable to bring distributed clean energy technologies to the BoP that will meet their energy needs, promote development, and protect the environment. This article seeks to add to the emerging dialogue regarding best practices in the provision of distributed energy to BoP communities, highlighting success factors from social enterprises that have participated in Santa Clara University's Global Social Benefit Incubator (GSBI™). GSBI is an intensive capacity development program specifically designed to help social entrepreneurs achieve financial sustainability and create systematic change. Based on the experience of working with these social enterprises and on associated institutional research, three overall success factors can be distilled. These three factors are:

- Appropriate technologies
- Innovative business models
- Integration with local context

It is the interplay among innovative business models, quality technologies tailored to localized energy markets, and appropriate interfacing with local ecosystems that allows social enterprises to go to scale.

SECTION I: BOP ENERGY LANDSCAPE

To understand these success factors across such a broad segment of the world's population, it is necessary to consider the landscape of current lighting needs and solutions, other electricity-based needs, and for cooking as well.

Electrical grids in BoP regions are commonly unreliable, providing intermittent and unpredictable power. It is estimated that only 30% of households in Sub-Saharan Africa have a grid connection, and of those, a third receives only intermittent power, largely because large-scale power production is insufficient to respond to peak demand (Practical Action, 2012).

In the Nepalese communities of Hatiya and Handikhola, more than 80% of households surveyed for the Poor People's Energy Outlook report had a grid connection, yet all of them received intermittent or poor quality power (Practical Action, 2012). This situation exists because grid electricity in Nepal derives its power from hydro-electric plants which suffer long power cuts in the dry season (Practical Action, 2012). The seasonal situation in Nepal is a microcosm of the wider reality of grid power in developing countries. Contributing factors include "technical issues, which can include insufficient generation capacity and aging equipment, as well as socio-economic and institutional issues such as insufficient management and maintenance capacity" (Practical Action, 2012).

In India, a different seasonal problem exists. Each state controls its own supply of electricity and chooses how to distribute it among urban and rural areas. More prosperous and better-managed states such as Gujarat produce enough energy to consistently meet their needs and regularly sell surplus power to neighboring states. Other states fall short to varying degrees. One example of an energy poor state is West Bengal, which prioritizes providing electricity to meet the needs of its major city, Kolkata. In the cool season, there is sufficient power to meet Kolkata's needs and to provide a reliable supply to neighboring grid-connected villages. In the hot season, however, energy demand in Kolkata increases due to the use of air conditioning systems, refrigeration, and increased water demand. The increased demand leads to daily energy cuts in the villages, and precisely during peak hours when they also need electricity the most (Alok Piri, personal communication, 1/23/13).

For these reasons, the International Energy Agency (2010) estimates that by 2030, 100% of urban—but only 30% of rural—households will be connected to grid electricity. Social enterprises target the remaining market of 70% of rural households. Although conventional energy technologies are continually improved and refined, the developing world has a unique set of requirements that are not met by technologies designed for the developed world. Appropriate technologies, not necessarily new ones, are crucial for bringing clean energy to the BoP. The IEA expects that energy demand will be met by an increasing use of mini-grid or other types of distributed systems.

BoP consumers have four key needs that can be addressed through electricity availability: lighting, mobile phone charging, entertainment, and other income-generating uses. While a reliable grid connection enables consumers to fulfill all of these needs, there are alternative solutions that are popular where the grid is non-existent or unreliable. These traditional alternatives, however, frequently have negative health, environmental, and economic consequences for their users.

Just as humans have done since the invention of fire, BoP consumers seek to extend their productive day through lighting which enables them to work longer hours, do household tasks, and study. In off-grid BoP communities, this need is commonly met by kerosene lamps. Worldwide kerosene consumption is estimated to be equivalent to 440 billion barrels of oil per year. This level of consumption translates into 190 million tons of CO_2 released into the atmosphere per year, the same amount of CO_2 that 30 million cars release in the same amount of time (Hystra, 2009). Moreover, in addition to toxic fumes from kerosene lamps, the danger of fire and ensuing risk to life and property is substantial. In India alone, 2.5 million people every year suffer severe burns due to overturned kerosene lamps (the health implications of fuel-based lighting "are two-fold: chronic illness due to indoor air pollution and risk of injury due to the flammable nature of the fuels used") (Lighting Africa, 2010). Cleaner lighting contributes to easing such effects while yielding significant cost savings to consumers in the BoP. Although solar lights have an upfront cost ranging from $11 to $65, the kerosene savings lead to a payback period from eight to as little as two months for the average consumer, depending on distribution economics and market potential (Lighting Africa, 2010).

Mobile phones have become a central communication and financial tool for people in the BoP. It is expected that the number of mobile phone subscriptions will surpass the world's population by 2014 (Mlot, 2012). World Bank Vice President for Sustainable Development Rachel

Kyte describes the potential of this revolution for the BoP: "mobile communications offer major opportunities to advance human and economic development—from providing basic access to health information to making cash payments, spurring job creation and stimulating citizen involvement in democratic processes" (World Bank, 2012). However, since mobile phone coverage surpasses electrical grid coverage, there is a growing demand for off-grid mobile charging options (Lighting Africa, 2010). In Kenya, for example, 20% of the population have access to the grid or off-grid electricity, but 42% have mobile phone subscriptions, leaving off-grid mobile phone users to pay from $0.10 to $3.00 per cell phone charge, creating a $155 million phone charging industry in Kenya alone (Lighting Africa, 2010). In addition to the economic cost, consumers also suffer the costs in lost time and travel to get to a phone charging kiosk.

In addition to being a communication and financial tool, mobile phones are quickly becoming a major entertainment device in the BoP, complementing or supplementing TVs and radios. It is becoming clear that the owners of mobile phone charging kiosks and other micro-entrepreneurs earn significant revenue streams from downloading music and games to customers' mobile phones. This added usage will also cause BoP users to recharge their phones more frequently than they would if they were using their phones only for calls (Paul Meissner, personal communication, 3/13/13).

The largest energy use in the BoP, however, is not lighting, charging, or entertainment. Cooking requires more energy, but there are severe environmental, health, gender, safety, and economic consequences to using traditional cooking methods in the BoP. With regard to the environment, traditional cooking practices can degrade land and cause local and regional air pollution (International Energy Agency, 2006). It is estimated that 1.6 million people die every year due to indoor air pollution from cooking indoors with firewood, dung, and refuse (Hystra 2009). Moreover, women and girls in developing countries overwhelmingly bear the burdens of cooking the family's meal as well as collecting the necessary fuel. Completing these tasks can mean 20 or more hours per week spent on "long, exhausting walks in dangerous or isolated areas" to collect fuel for cooking. In war-torn areas, these isolated walks often make a woman highly vulnerable to rape. In addition to the gender issue these walks create, the lost productivity occasioned by the need to search for sources of fuel and to collect it can ruin a woman's chances of economic gain: "time spent collecting fuel often leaves less time to work in the fields, start a small business, or engage in other pursuits that can bring much needed money into the household" (Global Alliance for Clean Cookstoves, 2011).

There is thus a clear link between improved access to energy and improved economic opportunities. Practical Action, in their 2012 report, identified three mechanisms through which energy access relates to earning a living: (1) creating new earning opportunities, (2) improving existing earning activities, and (3) reducing opportunity costs. With access to energy, new earning opportunities for enterprises such as mobile charging kiosks can be realized. Existing earning activities (weaving products at home for sale, for example) can be improved with lighting by allowing for longer hours, lowering costs, and improving the quality of the goods produced. Access to energy reduces opportunity costs by allowing more time to be spent on economic endeavors. Women and girls who invest hours each day searching for wood and other cooking fuels could instead spend that time on school work, or on other income-generating activities (Practical Action, 2012).

In this article, we analyze how social entrepreneurs are addressing the energy needs of the BoP by examining each of the three success factors—technology, business model, and local context. Each factor is illustrated with a brief case study that provides anecdotal evidence of how these factors influence energy poverty elimination efforts in BoP communities.

Santa Clara University's Energy Map profiles over 60 social enterprises working around the world to bring clean energy to the BoP (energymap-scu.org/about). The social enterprises are largely graduates of the GSBI program. Along with profiles of these energy-focused social enterprises, the Energy Map outlines technologies and business models that have been successfully implemented by them.

SECTION II: APPROPRIATE TECHNOLOGIES

The most common power sources used in the BoP can be grouped into biomass, solar, and a smattering of other renewables like wind and hydro (energymap-scu.org/technologies/power-sources). Using these power sources, social enterprises offer such products as lanterns, home lighting and electrical systems, cookstoves, and mini-grids (energymap-scu.org/technologies/products).

Design considerations for different markets vary substantially. For example, Shidhulai, a social enterprise working in flood-prone Bangladesh, knows that their customers would not consider a home system that was not portable, so they sell lighting systems that people can take with them upon evacuating their homes. In other geographies, such as densely populated Indian villages, smaller, decentralized versions of

conventional grids—such as mini-grids or micro-grids—offer lower costs through better efficiency and scalability, but introduce other complexities, including the need to prevent energy theft. In less densely populated villages, such as those found in rural Africa, individual home systems are more cost-effective (energymap-scu.org/technologies/power-uses/off-grid-lighting-and-electricity/community-level-power).

Demand for energy technologies is not limited to those people entirely off the grid. Interestingly, the inexpensive grid costs do not always attract the poorest of the poor. Researchers are finding that, at least up to a certain point, the BoP market values reliability over cost:

> The presumably less expensive (and heavily regulated) [grid] costs [...] do not necessarily induce customers to *voluntarily* buy the regulated network—and despite government programs to "help poor people" by setting low prices—customers turn to more expensive but reliable alternatives. [...] Many countries have by now experienced the effects of energy development projects that did not adequately consider reliability in the design of operational systems. (Ballonoff, 2013)

Although poor, consumers in India and the rest of the BoP do not base their purchasing decisions on price alone. Guillermo Wille, former Managing Director at GE India, relates: "the beauty of the Indian market is that it pushes you in a corner … it demands everything in the world, but cheaper and smaller" (Kumar & Puranam, 2012). Such consumer demand and the large market size foster a "leapfrog technology" pattern in developing countries where infrastructure gaps have "positively affected Indian innovation" (Kumar & Puranam, 2012). This leapfrogging is being achieved through frugal innovation, which encompasses designing for affordability, ruggedization, adaptation, green technologies, use of local resources, simple user-centric design, weight, and "magnificent" simplification (scu.edu/engineering/frugal). These factors are all relevant, though perhaps user-centric design is most important to this discussion. User-centric design incorporates attributes that target users value most.

Lighting Africa's 2010 "Solar Lighting for the Base of the Pyramid" report documents the "trend toward consumer-oriented design." Six primary factors are relevant for lighting in rural markets: (1) multiple recharge options, (2) multiple dimming settings and battery life notification, (3) mounting features, (4) durability, (5) modular design, and (6) mobile phone recharge options. The report notes how the market for solar portable lights has shifted—from one driven by NGOs primarily seeking tools to support development—to one driven more by evolving consumer demand:

> Social entrepreneurs along with pure profit driven ventures have begun to respond to the choice of the customer and offered designs and features which better align with customer demands. [...] While lanterns fill a basic consumer desire for light, value added features increase the range of product offerings within this segment. Many of these features help to reduce the upfront costs or increase overall economic benefit to the customer, thereby increasing demand and expanding the market.

Not only does the technology have to be high quality, but it also needs to have the right features. The market trends reported in Lighting Africa are consistent with the trends seen in the work of the social enterprises that have gone through GSBI. Increasingly, mobile phone charging capability is the must-have feature for BoP consumers (World Bank, 2012). If a BoP family is going to invest a week or a month's income in an energy product, the family must perceive that it will receive sufficient return, which could include economic benefits through savings in kerosene or fuel wood, increased productivity by being able to work more hours, and aspirational advantages through improved status in the community.

Angaza Design, a GSBI 2011 graduate, focuses on user-centric design for clean energy in rural Eastern Africa. Angaza strives to "integrate engineering solutions with first-hand field experience" by "combining human-centered design with innovative technology to reshape the global energy market" (www.angazadesign.com). The social enterprise designs solar technology that it distributes through partners. Angaza's technology solution is the *SoLite3 Solar Home System*, a system that contains an LED light unit, a detached photovoltaic (PV) panel, and a pay-as-you-go control unit. The system has a run time of eight hours on its low setting and four on its high one at two watts of power. Multiple brightness settings, a detachable panel, and the output wattage are all specifications that are tailored precisely to rural Eastern Africa where Angaza is doing business. These specifications are based on extensive research and, more importantly, ongoing feedback from customers.

There are also constraining and driving factors for adoption of clean cookstoves. As a "push" product, cookstoves are difficult to sell because they replace wood and refuse-based cooking which have long histories of use, and whose fuels are perceived as free because women's time is not valued. On the other hand, a "pull" product like the Internet provides a new service that does not replace well-entrenched comparable practices (Global Alliance for Clean Cookstoves, 2011). To make a cookstove desirable, it must conform to a number of user-centric design specifications, including not altering the taste of food, providing the ability to regulate temperature easily, cooking food quickly, and reducing the cost of, or time spent collecting, fuel (Global Alliance for Clean Cookstoves,

2011). Given the enormous variation among BoP markets, a multiplicity of cookstove solutions is needed to meet the specific needs of different communities. One successful cookstove entrepreneur is Potential Energy, whose "5-Minute Stove" has proven popular with customers in Sudan and Ethiopia. The stove name and slogan of "Don't burn your money, buy the 5-minute stove" were created in the Potential Energy team together with early customers in Sudan. Key advantages over traditional three-stone fires are that it uses only ¼ the firewood, and cooks food in just 1/10 of the time. Part of what enabled such drastic reductions is a design optimized for the traditional pots and meals in each target country (scu.edu/socialbenefit/resources/library.cfm?id=001A000000eEELz).

Thus, the challenge for social entrepreneurs who wish to develop successful energy products for the BoP is not to reinvent clean energy technology, but rather to adapt existing technologies to the specific communities they intend to serve.

SECTION III: INNOVATIVE BUSINESS MODELS

Along with tailored technology, an innovative business model is a necessary success factor to scale social businesses in the BoP. Jim Koch, founder of Santa Clara University's Center for Science, Technology, and Society and former Dean of the Leavey School of Business, explains the framework for success in social entrepreneurship:

> Schumpeter's concept of entrepreneurship as combinatory innovation is evidenced across social entrepreneurs in the Energy Map …. Their efforts must simultaneously attend to localizing technology, establishing business models for the creation of "new markets," and interfacing with local ecosystems through alliances and novel value chain innovations. (James Koch, personal communication, 1/16/13)

Even with a high-quality and frugally-engineered product adapted to the local context, the potential for high impact at the BoP can only be realized with an effective business model. The BoP business model challenge is the same as the technology challenge: finding what works.

Social enterprise business models must respond to the stiff hurdles at the BoP in the local context of the communities they serve. Business models can be categorized by six parameters: (1) product sourcing and design, (2) distribution, (3) affordability, (4) organization financing, (5) scaling, and (6) social impact (energymap-scu.org/business-models).

Perhaps the most salient business model parameter for device-oriented enterprises is distribution, which "has emerged as the major determiner of commercial success in selling modern energy solutions to underserved households" (International Finance Corporation, 2012). In rural markets, distribution means reaching villages far removed from transportation infrastructure, and doing so profitably. Companies that are successful in last-mile distribution possess a valuable core competency that distinguishes them from potential competitors.

Consumer financing is another important parameter in BoP business models—it makes products affordable over time for BoP customers. SELCO, founded in 1995, has sold, serviced, and financed over 135,000 solar systems in 5 states in India (www.selco-india.com). It is described by the Yale School of Management as "one part customized technology … one part customized finance" for its aggressive efforts to make its solar home lighting and electricity systems available to rural households through microfinancing (Yale School of Management, 2010). Providing financing to customers and/or suppliers is an essential element of a successful BoP energy venture business model (Koch & Hammond, 2013). Distribution and finance, and the remaining four parameters, are hallmarks of business ventures poised to scale in the "stress test" of the BoP marketplace.

Each social enterprise working at the BoP approaches these six parameters in a unique way, tailored to the location and the culture where the social enterprise intends to do business. For example, Avani works in the Indian Himalayas, where firewood is scarce and pine needles are a fire hazard and inhibitor to agriculture. Avani has developed a system for gasifying pine needles to generate power for village use and sale to the state-owned energy grid (energymap-scu.org/avani). In comparison, CCF BushBlok clears invasive brushwood from cheetah habitats in Namibia. The brushwood is processed into fuel logs, which are sold as consumer products in urban areas in Namibia and exported to South Africa and the United Kingdom. Thus, both organizations clear invasive biomass and turn it into energy, but their business models differ significantly due to differences in the local context. In Avani's case, selling electricity to the state-run grid was a logical option because a legal mechanism, called a feed-in tariff, was readily accessible. For BushBlok, fuel logs were identified as a business opportunity that would also create jobs for Namibians and encourage other industries to use bush wood as raw material (www.bushblok.com/project.htm).

Solar Sister, a social enterprise working primarily in Uganda, focuses solely on last-mile distribution. Solar Sister has an Avon-style network of consignment sales agents that almost exclusively employs women. This enterprise is structured in a clean, simple way: a country director man-

ages a team of regional coordinators spread out among the regions they serve. Each regional coordinator recruits and trains primarily female entrepreneurs. With support from her regional coordinator, an entrepreneur sells a portfolio of solar products. Solar Sister is product agnostic: the company does not design or manufacture any products and is driven by customer demand. Solar Sister carries products designed and manufactured by partner social enterprises, including Angaza Design, d.light Design, Barefoot Power, and Greenlight Planet. From experience working in the field, Solar Sister continually adjusts its business model and tweaks its distribution strategy (www.solarsister.com). Katherine Lucey, CEO of Solar Sister, describes how she arrived at her current business model:

> In sub-Saharan Africa, where only 5% of the rural population has access to electricity, solar is the perfect energy source. The puzzle then becomes: How to provide access to the solar technology in a way that reaches the people with the most need, the women and girls living in remote rural villages? How to create a program that is scalable and sustainable? How to involve the women, not just as passive consumers of technology but as active participants in the adaptation of that technology? I found the answers to those questions by talking to and really listening to the women living with energy poverty day in and day out. (www.solarsister.com)

To render business models practical in difficult local markets, CEOs of companies like Solar Sister must learn the specific needs of their consumers. For Solar Sister, an Avon-style distribution model works well. Lucey's description of how she chose Avon-style distribution by talking with "the women living with energy poverty day in and day out" exemplifies this learning. Adapting business models to work among the poorest of the poor takes innovation and ingenuity. Sometimes a simple, classic business model can be the most effective.

SECTION IV: INTEGRATION WITH LOCAL CONTEXT

The third critical factor in serving BoP markets is interfacing with local ecosystems. This factor can be conceptualized as "developing mechanisms to embed the technology and business model into the (underserved) community" (Jain & Koch, 2009). Institutional voids and severe resource constraints at the BoP require social enterprises to integrate their businesses into local ecosystems to deliver goods and services. Integration can be accomplished in a variety of ways. Four factors are central to successful interfaces: (1) building domain legitimacy among external stakeholders, (2) establishing credibility within the community, (3) be-

coming involved with the community, and (4) crafting a relationship with the government (Jain & Koch, 2009).

Building domain legitimacy among external stakeholders, which is necessary for obtaining investment capital and partnerships, requires the social enterprise to show that its products or services have social benefit and that the enterprise has a business model that will enable continued growth. Winning prestigious awards and competitions has become a useful tool for legitimizing social enterprises in the eyes of external stakeholders with limited knowledge of the specifics of a given technology or the local context in which it is being deployed (Jain & Koch, 2009). The social enterprises cited in this article have received awards and recognition from notable sources, including The Tech Awards, Fast Company, BBC World Challenge Competition, and Clinton Global Initiative.

Credibility within the community is of equal importance because it leads to user adoption. Building credibility entails educating consumers about the benefits of a given product, which is accomplished by using local sales agents. It also entails working to counter negative stereotypes that remain from unreliable companies or government programs. That problem has been worsened by the growing number of profit-first companies selling low-quality solar lanterns to the BoP. These products have frequent performance and durability issues which spoil the market for distributors of quality products (Lighting Africa, 2010). In villages, customers talk to each other and will give either positive or negative references to a given technology. Because of these factors, Solar Sister offers its sales agents a variety of vetted products, but also recognizes that different communities will prefer one product over another, noting that "often customers from a community will prefer one product because everyone else in that community has chosen it" (energymap-scu.org/solar-sister).

To establish trust at a community level, social enterprises may need to partner with non-governmental organizations (NGOs) and local governing bodies. With an integrated network that encompasses "not-for-profits, corporates, public sector, government" and essentially everyone else, social problems become more realistic to solve (Stevens, 2012). A strong alliance can work to strengthen business necessities such as distribution (i.e., by partnering with businesses that have "already established strong channels" [International Finance Corporation, 2012]). Non-profit social enterprises often build their models on this type of community-level engagement because they have existing relationships with village-level NGOs and other community groups. This approach is being followed successfully by CTxGreEn, which works with Indian self-help groups to produce biodiesel water pumps. Producing the pumps enables new forms of agricultural productivity while providing additional livelihood oppor-

tunities through jobs related to producing the biodiesel and managing the pump (energymap-scu.org/ctx-green).

The fourth factor is crafting the appropriate relationship with the government. This step often means accessing government subsidies for clean energy solutions and rural development. Practical Action Peru has made the creation of community-scale micro-hydro power plants affordable for rural communities by partnering with the government on the installation of each plant. In their model, the government subsidizes most of the installation costs and retains ownership of the plant, but it is administered by a community group formed by Practical Action that collects monthly payments from the beneficiaries and is responsible for operations and maintenance (energymap-scu.org/practical-action-peru).

Husk Power Systems (HPS) provides an example of a social enterprise with an appropriate technology and an innovative business model that has addressed all of these local context factors. HPS was first conceived by two men looking for a way to give back to the people of Bihar, their home state in India. Gyanesh Pandey and Ratnesh Yadav started by attempting to develop a technology that could provide electrification at a village-wide level. After extensive research, biodiesel, wind, and solar were rejected on the basis that economics and supply chain issues would render each uneconomical. They were left with biomass, and the only form of unutilized biomass in Indian villages was rice husk. Pandey had heard of a plant in another state generating power from rice husks, though not entirely successfully. After observing and studying, the two designed a gasifier that could convert husk to a combustible gas and a generator to output electricity from the gas, resulting in a proprietary technology designed exclusively for the BoP and, more specifically, for the state of Bihar, where rice husk was abundant and unused. This technology has enormous potential using an untapped resource as an input and providing reliable electricity as an output (Shrimali, Dhanaraj, & Sud, 2011).

The two founders were soon joined by two friends who specialized in business, thus rounding out the team. They developed a business model around the gasification technology and their target customers in underserved communities in Bihar. The founders matched the price of electricity to the poor "in relation to their ability to pay" (Jain & Koch, 2009). Their target market was characterized by customers with uneven and extremely limited cash flows, and was matched with the payment plan associated with switching from kerosene: "Husk Power generates revenue by providing up to seven hours of electricity to villages in India at a cost that is less than one-fourth the monthly cost of kerosene lighting ($2.00 v. $8.00/month)" (Jain & Koch, 2009). In addition to this revenue stream, HPS created additional sources of revenue from the sale

of complementary electric appliance products, embodying the "long-understood axiom in the expansion of access to electricity—supply creates its own demand" (Jain & Koch, 2009). HPS also generates additional income by selling rice husk char which has additional value as a future carbon credit (Jain & Koch, 2009). To lower costs even more, HPS also taps into Indian government subsidies for rural electrification which can cover up to 50% of a project's cost.

In addition to addressing the local economic context, HPS's model takes into account human capital issues as well, notably by creating its own training center in order to overcome the lack of skilled workers in Bihar and meet HPS's expected hiring requirements of 150–200 plant operators per year. HPS also builds community-level credibility by working through the local governance system (Jain & Koch, 2009).

HPS's deliberate considerations of the local context led to a model which they believe can be readily adapted to all 125,000 un-electrified villages in India. The team recalled that the business plan "started looking like Starbucks—you can put one of these in 125,000 locations, hire local people, and turn a raw material into money—just substitute rice husks for coffee beans" (Shrimali et al., 2011).

Husk Power Systems is the epitome of frugal innovation—combining a technology that is both locally available and environmentally unobtrusive with a business model that provides low cost energy at a rate that mimics the income streams of the community it seeks to serve. HPS interfaces with its ecosystem in "textbook" fashion—it has established both external and internal credibility through prestigious awards and a village-level governance structure, built a training school to involve itself in upgrading community skill sets, and works with the government to receive subsidies in order to drive down cost. The incredible and often-referenced success of HPS can be attributed to the social enterprise's mastery of the three pillars of success at the BoP: appropriate technology, innovative business model, and interfacing with the local context.

SECTION V: CONCLUSION

The UN predicts that the population of the world's less developed regions will rise from 5.7 billion in 2011 to 8 billion in 2050, representing a 40% increase (United Nations, 2011). Grid connectivity is not expected to keep pace with that growth, especially in Africa, so that by 2030 there will be 100 million more un-electrified people compared to

today, and globally there will still be roughly 1.3 billion people without reliable electricity (Lighting Africa, 2010).

Based upon experience in the Global Social Benefit Incubator at Santa Clara University, it is believed that social enterprises can play a major role in providing necessary products and services to solve the energy related problems faced by these consumers. Doing so involves developing appropriate technologies, such as the SoLite3 Solar Home System from Angaza Design, finding a means to sell it in the context of deep poverty, like Solar Sister's Avon-style distribution network, and ensuring that both technology and business model interface with the local ecosystem so as to maximize impact, like Husk Power Systems. The interplay of these three factors leads to success in providing clean energy to the BoP. The lesson to those who aspire to have an impact in alleviating energy poverty at the BoP is this: listen to the consumers. Pay attention to local customs. Learn what people in the target underserved community need, what they value, and how they do business. It is an intimate knowledge and understanding of the user, the customer, and essentially the context of poverty that allows entrepreneurs to innovate in meaningful ways. The greater the degree that context is valued in conjunction with appropriate technologies and innovative business models, the more clean energy can be brought to those in need.

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SCALING IMPACT IN THE HEALTH SECTOR

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Abstract. This essay examines possible routes to achieving significant health improvements in the underserved populations of developing countries. It argues that unconventional strategies, largely outside the health sector as conventionally defined, have the greatest potential to scale sustainably. The essay describes two such strategies—nutrition and safe drinking water. In particular, the essay argues that impact investors focused on social enterprises can best maximize their health impact by looking closely at the strategies described herein.

Health is one of the areas that have been traditionally left to the public sector and to charity or donor funding, largely via NGOs. As a consequence, there has been relatively less private sector investment in base of the pyramid (BoP) health ventures compared to microfinance or off-grid energy, despite the fact that many social entrepreneurs work in the health sector. But that situation is beginning to change as for-profit clinic networks try their wings, start-ups offer new diagnostic tools intended for the BoP, and the potential of mobile phones and tablets to empower both front-line health workers and patients begins to be tapped. These activities have very significant potential and deserve the attention of impact investors.

All of these entrepreneurial efforts, however, are still small. Most large-scale health interventions are expensive. Internationally-funded pilots or narrowly focused and traditional efforts such as vaccination campaigns or HIV/AIDs treatment programs require massive external funding. In contrast, the unmet needs are enormous—for 3–4 billion people in especially rural and many peri-urban communities in develop-

ing countries, there is very limited access to generally poor quality care. It is not obvious how we get to meaningfully impact on those needs from where we are now. Moreover, it is pertinent that, historically, most major innovations in public health have come from outside the medical domain or even outside what was at the time considered to be the proper concerns of public health. Two major examples of such innovations are the introduction of centralized urban water and sanitation early in the 20th century, and the rise of the environmental movement and its concern with toxic substances in air, water, and food in the second half of that century. It thus seems reasonable to ask whether BoP health care might equally benefit from some orthogonal approaches.

My colleagues and I at Ashoka have been following this line of reasoning for the last couple of years, drawing on the wisdom and experimentation of the 600-some Ashoka Fellows who work in health. We have found it useful to not just think about health interventions, but rather to consider what contributes to a peoples' wellness and vitality, to their ability to succeed in life. Our tentative conclusions have focused on two complementary but different system-level interventions that seem critical to scaling beneficial health impacts. One of these interventions addresses the relation between the agriculture/food ecosystem and human nutrition, while the other focuses on safe water and its relation to human health. Both are largely neglected by healthcare systems and international health programs.

THE AGRICULTURE/FOOD ECOSYSTEM AND HUMAN NUTRITION

One of the levers for scale comes from the unintended consequences of what we might call the agriculture/food ecosystem. Modern farming systems, it turns out, produce higher yields but less nutritious raw materials as measured by the micronutrient content of grains, vegetables, and fruits. This high yield, low nutrient situation is also true for the meat from animals that are fed those grains. To compound the problem, modern food processing approaches often find it efficient to remove much of the remaining micronutrients in order to achieve longer shelf life or consistency of product, among other similar reasons. Food companies sometimes add back micronutrients to "fortify" the final product, but these added components are likely to be in an inexpensive form that is not well-absorbed, or easily used, by the human body. Heavily-advertised fast foods and high-sugar beverages in the developed world and diets in the BoP that are often restricted to a few subsidized staples intensify the prevalence of "empty" calories in the world's food supply. The net result

is that some 2 billion people worldwide are malnourished in the sense that they suffer micronutrient deficiencies. At the same time, others are over-nourished in the sense that they consume calories in excess of their needs and become part of the growing epidemic of obesity in rich and poor countries alike (Muller & Krawinkel, 2005; Hammond & Dube, 2012). These nutritional problems turn out to be closely connected.

Nutrition matters—indeed, we are what we eat to a significant degree. Many of the enzyme systems in the human body depend upon trace minerals, and so deficiencies of iron, zinc, selenium, manganese, and other micronutrients (essential minerals, vitamins, and fatty acids) can impair health and wellness. Moreover, the chemical form of these micronutrients in our food supply or in nutritional supplements makes a huge difference. Iron in human breast milk, for example, is in a complex, protected form that is highly bioavailable to the infant. On the other hand, iron in an elemental form, often used in baby formula or nutritional supplements, is not easily absorbed and used by the body and is also readily available to any bacterial infection present in the child (bacteria need iron to grow as well, and can outcompete an infant for it). Because of regulatory failures, consumers have essentially no useful information about the micronutrient content of the food they buy since food labels (and even those on vitamin and mineral supplements) say nothing about the form (and thus the bioavailability) of the micronutrients in a product.

Nutrition plays an especially important role in the womb and in the young infant, and can in fact influence one's entire lifetime course of wellness and illness. It is now known that the fetal environment in a malnourished womb triggers epigenetic signals that turn specific genes on or off in ways that prepare the child for an "expected" lifetime of food scarcity. The child is born with extra fat cells, among other differences, and yet is at risk of premature birth and/or low birth weight. This dynamic is a survival mechanism that has helped our species overcome highly variable environmental conditions before the advent of agriculture about 10,000 years ago. But it also causes life-long, genetically-driven predispositions to obesity, diabetes, and cardiovascular disease, as well as stunting and impairing cognitive development in severe cases. Nearly 50% of children in India are stunted by age 2, and the figures for Sub-Saharan Africa, while lower, are rising. The cognitive deficits affect ability to plan, impulse control, and other executive functions that are important to success in school and in employment. Low birth-weight infants are also much more likely to die from infectious disease and other causes in their first 5 years of life. The bottom line is that poor nutrition for teenage girls and pregnant women can significantly pre-determine the course of a country's public health burdens which are increasingly

dominated by chronic illnesses such as diabetes and cardiovascular disease. Such poor nutrition also creates very challenging barriers to a country's ambitions for competitive success in a rapidly changing global economy as a large fraction of the population becomes cognitively incapable of participation in high-skilled work and civil society.

Getting maternal and infant nutrition right is a significant lever, and the costs are not especially high—even if governments heavily subsidize the right kind of nutrient-rich food for this relatively small segment of their population. The challenges are more in distribution and effective management (the UN Millennium Challenge goals for maternal health lag furthest behind the other Millennium goals) and in warding off other concerns that might mitigate the impact of a "nutrition security" public health strategy. But at present, nutrition is hardly even visible as a health care priority on national and international agendas.

SAFE DRINKING WATER AS A CRITICAL COMPONENT OF HEALTH

Our research suggests that a second critical leverage point for scaling health impact is access to safe drinking water. The relationship between safe drinking water and human health is quite straightforward. The high incidence of water borne disease and of other health impacts from dissolved solids or chemical contaminants in untreated water supplies (such as arsenic, high fluoride or calcium levels, pesticide residues) is well known, as are methods of treating water to remove biological and chemical contaminants.

But doing something about the problem falls outside the scope of health programs at both national and international levels—it's somebody else's problem, and yet prevention of the health burdens of unsafe water is much less expensive—for consumers and national government—compared to treatment. Not only is frequent water-borne illness and the associated diarrhea in infants and young children a major cause of death, it also exacerbates malnutrition. Frequent diarrhea can also significantly undercut the effectiveness of childhood vaccinations, rendering the child vulnerable to easily-avoided illnesses—and, in effect, wasting much of the cost and effort of vaccination programs. Pesticide residues in water and food in areas with intensive agriculture are also closely associated with increases in cancer.

However, what is particularly interesting about safe drinking water as a leverage point for achieving health impact is its potential as a sustain-

able distribution model for water, nutrition, and other health services. Previous work has indicated that the sweet spot for impact in the near term is likely to come not from centralized urban water systems, nor from point-of-use (household) water treatment, but from community-scale strategies (Koch & Hammond, 2009). These strategies typically involve community-scale utilities, treating locally-available raw water and selling it to households from a centralized location, and in some cases, distributing the product to the doorstep. In India, which has had perhaps the greatest experience with such models, it is possible to supply a household's safe drinking and cooking water for an annual cost of between $20 and $40, and to do so on a continuing basis with reasonable penetration of households, especially at the lower prices. Since the estimated annual costs of treating water-borne disease exceed $50 per household (Jain, 2012), there is a direct and immediate consumer financial benefit quite apart from avoiding loss of work and school days. Additional public health benefits, such as reduced infant malnutrition and death, reduced chronic disease decades later, more effective vaccination outcomes, etc., come at no cost.

The water treatment centers in these models become central to the life of communities, especially since people come every day to pick up their water. It is thus not hard to envision the centers as distribution points for nutrition-rich food or nutritional supplements. Likewise, the social marketing required to induce potential customers to pay for clean water lays a foundation and a marketing infrastructure for educating them about the benefits of improved nutrition for mothers-to-be and young children. At least one of the Indian water companies, a close Ashoka partner, is already experimenting with vaccination "camps" on pre-arranged and advertised days at water treatment centers. If such models scale, and there is evidence that they can, there is scope for replication in many countries. Such an orthogonal approach, largely outside traditional healthcare models and focused instead on wellness, has the potential to achieve significant impact. Historically, it would not be the first time.

Consider this essay, then, a call to action to tear down the artificial walls that now separate healthcare, nutrition and food quality concerns, and safe drinking water. Let us accept that wellness is the goal of all three areas, and optimize public and international funds for maximum impact. Equally, for impact investors that care about real impact, please seek out ways with your investment dollars to encourage such integration. I argue that safe drinking water may be the most scalable wellness intervention now available, as well as a distribution vehicle for other wellness services. Please do your own analysis and let it guide your investment decisions for the health sector.

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THE ROLE OF HUMAN CAPITAL IN SCALING SOCIAL ENTREPRENEURSHIP

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Abstract. In this article, we discuss the importance of human assets in growing and scaling a social venture in order to achieve its objectives and attain financial sustainability. We focus on the three key dimensions of how a social enterprise's *human assets* contribute to the effectiveness of the company's operations and its missions: 1) human capital acquisition, 2) human capital development, and 3) human capital retention. In discussing and unpacking these three dimensions, we draw from rich insights and real-life examples from two social ventures we studied: Solar Sister of Uganda and E-Health Point of India. These inductively-generated research insights underscore the importance of productive engagement of human assets for the long-term viability of social ventures and in achieving their objectives on a broader social scale.

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INTRODUCTION

A recent review of the literature suggests that social entrepreneurship research is receiving increased interest and momentum (Short, Moss, & Lumpkin, 2009). Although a unified definition of social entrepreneurship has not yet emerged (Christie & Honig, 2006; Weerawardena and Mort, 2006), we use the broad definition of social entrepreneurship that has been developed by Mair and Marti (2006: 37) who view "social entrepreneurship as a process of creating value by combining resources in new ways … [where] these resource combinations are intended primarily to explore and exploit opportunities to create social value by stimulating social change or meeting social needs." In particular, we focus on the knowledge, skills, and experiences of human resources that are considered among the key contributors to a firm's bundle of resources and capabilities (Hitt, Bierman, Shimizu, & Kochhar, 2001; Lado & Wilson, 1994).

In this article, we discuss the importance of human assets in growing and scaling a social venture in order to achieve its objectives and attain financial sustainability. We focus on the three key dimensions of how a social enterprise's *human assets* contribute to the effectiveness of the company's operations and its missions through (1) human capital acquisition, (2) human capital development, and (3) human capital retention. In the next section of the article, we first explain why human assets matter to social entrepreneurship. We then discuss how a firm's policies and actions in these three key dimensions can promote (or hinder) the growth of the firm which is vitally linked to the delivery of social, environmental, and economic benefits to the impacted communities and stakeholders. In discussing and unpacking these three dimensions, we draw from rich insights and real-life examples from two social ventures we studied, Solar Sister of Uganda and E-Health Point of India. These inductively-generated research insights underscore the importance of productive engagement of human assets for the long-term viability and successful scaling (growth) of social enterprises.

WHY DO HUMAN ASSETS MATTER IN SOCIAL ENTREPRENEURSHIP?

Systems, activities, and routines for acquiring, organizing, developing, and rewarding human resources directly influence the processes in which firm competencies are developed and renewed (Huselid, 1995; Lado & Wilson, 1994; Prescott & Visscher, 1980). These firm-level capabilities which are built on specific human capital development systems can be difficult to imitate because these systems involve routines that are firm-specific, socially complex, and path-dependent (Kor & Leblebici, 2005; Reed & DeFillippi, 1990).

With regard, therefore, to the utmost importance of human assets in terms of skills, experience, and good work ethic, social enterprises resemble for-profit corporations. In social ventures, however, the versatility of human resources both at managerial and operational levels often goes beyond the norms we observe in for-profit organizations. Because social ventures usually operate under resource scarcities and in environments with weak institutions (e.g., physical, technological, legal, economic, and educational infrastructures), their human resources often demonstrate increased flexibility, rapid knowledge and skill acquisition, creativity, entrepreneurial drive and energy, and strong intrinsic motivation (Miller, Grimes, McMullen, & Vogus, 2012). The availability and continuity of managers and operational staff with such qualities matter immensely, therefore, to the development and sustainable growth of a viable social enterprise. Healthy growth brings economies of scale and efficiency in operations, helps build reputation and rapport with targeted communities, and can be a precursor to financial sustainability. However, social ventures often experience heightened challenges in building and growing their human asset stocks and competencies on a par with their expanding operations; thus, overcoming these challenges will be vital to their survival and mission. We turn to such challenges in the next section.

1. Human Capital Acquisition Challenges and Strategies

Human capital acquisition involves recruitment of managerial, field/operational, and support staff with essential knowledge, skills, and mindsets (Adner & Helfat, 2003). Regarding human capital, Becker's (1975) research distinguishes between generic and specialized human capital. Generic human capital reflects education, skills, and experience that have applicability in multiple firm and industry settings. Specialized human capital tends to be context-specific, such as the knowledge, skills, and connections one can build while working in a specific firm or industry context (e.g., health care industry). Firm-specific human capital, which entails a deep understanding of a particular firm's unique culture, strengths, vulnerabilities and tacit knowledge, is associated with the firm's social context (Castanias & Helfat, 1991). Firm-specific human

capital may accumulate through years of experiential learning in company operations where highly specialized skills are developed.

Acquisition of essential human capital could be a major challenge for social ventures due to internal resource shortages and external labor market conditions. In the social ventures we studied (Solar Sister and E-Health Point), we expected to see heightened difficulty in finding and recruiting talent considering the developing nature of the countries where they operated. Surprisingly, however, both firms were satisfied with the pool of talent in these countries (Uganda and India, respectively) and they were able to hire bright, well-educated managers and employees. The key difficulty they experienced had more to do with specialized human capital—many of the hires, while well-educated, lacked context-specific (specialized) skills.

Specifically, E-Health Point[1] provides clean water and health care services to low-income rural communities in India. The firm uses information technology to connect local patients with doctors who are at off-site locations. E-Health Point was able to locally recruit well-educated nurses, paramedics, and pharmacists, but as company CEO Amit Jain realized, these employees still needed specialized training in customer management, English speaking proficiency, and the ability to work with computers, all of which are essential to the firm's business model.

As a company objective, Solar Sister[2] aims to empower women with economic opportunities in Sub-Saharan Africa (mostly Uganda) by recruiting and training them to sell micro solar products in their communities. Through founder Katherine Lucey's social networks and via formal recruitment, Solar Sister was able to hire highly talented managers and regional coordinators. Lucey, however, found out that additional formal training and high touch mentoring/coaching were needed for the employees to become skillful salespeople in the local cultural context, one where entrepreneurship is not always naturally embraced. Thus, for both Solar Sister and E-Health Point, good recruitment was crucial, but it was only the starting point to be supplemented by significant internal development efforts. As such, we now turn to the challenges and strategies of internal human capital development.

2. Human Capital Development Challenges and Strategies

[1]http://ehealthpoint.com/
[2]http://www.solarsister.org/

Human capital development involves training as well as motivating and rewarding employees. Human capital pertains to innate and learned abilities, as well as expertise and knowledge gained through education, training, and on-the-job experience (Becker, 1975). Human capital researchers have studied productivity-enhancing investments such as education, health care, training, and firm-specific knowledge acquisitions, as well as the payoff from such investments (Harris & Helfat, 1997; Gimeno, Folta, Cooper, & Woo, 1997). This line of research shows that individuals with higher quality human capital deliver better performance, and thus can be key sources of competitive advantage for the firm (Hitt et al., 2001).

In social ventures, managers face the challenge of developing specialized training materials that fit unique service needs, distributing and effectively utilizing these materials in geographical locations that can be dispersed and diverse, and recruiting the appropriate individuals who can do effective training, as well as those who can enhance their skill sets from this training. We anticipated that *formal* training would be a major component of the systematic training process; however, we did not foresee how important *informal* training and coaching in social entrepreneurship is. Partly due to the specialized nature of training (i.e., guidance and advice tailored to situations, locations, and individuals) and due to the intimate, personal nature of social interactions, formal training does not suffice. Entrepreneurs (and their managerial/training staff) often need to put in substantial time mentoring and coaching as situations and challenges arise. Formal and informal training thus play complementary yet distinct roles in human capital development.

We also noted that due to differences in interests, values, and a base level of knowledge and skills, not all individuals benefit sufficiently from training. The social venture can end up wasting precious time and resources if training is not properly targeted. Pilot training thus became essential in order to determine the characteristics or competency-value profiles of individual actors (e.g., trainers, sales people, and even managers) who should be targeted for additional formal and informal training.

Solar Sister, for one, continues to try to be more systematic in its training efforts, which are important as the company continues to grow within Uganda and into other countries. The women entrepreneurs whom the company relies on have deep social networks but they do not always realize how to reach those networks. Social entrepreneurs at the company thus undergo formal training and a certification process on how to be successful salespeople. During the training process, they are taught to visualize their social network by drawing a map. Each social entrepreneur can then expand her market and achieve higher sales goals.

However, while formal training is crucial, a good portion of the critical training is verbal and informal. High touch mentoring and coaching remain essential because experiential learning matters in this context. Katherine Lucey, the founder of Solar Sister, is dedicated to the mentoring of the firm's sales managers (regional coordinators), so she communicates regularly with them to hear their concerns and challenges, offer guidance, and engage in problem solving with them. Sales managers also interact with one another, discussing the challenges encountered and solutions found, and they gain considerably from such lateral learning. In addition, Solar Sister invests in the most promising social entrepreneurs with additional financing and training. These promising social entrepreneurs, called "anchors," have the potential to sell a broader portfolio of products (e.g., solar cell phone chargers) in addition to the primary product, a solar lamp.

Furthermore, the participants in social entrepreneurship (e.g., managers, employees, and community participants) can be motivated and rewarded to increase their engagement and the overall productivity of the organization. However, similar to what we learned about training, we found out that motivation and reward systems are not universal. The specific cultures and social contexts determine how individuals preferred to be motivated and rewarded for higher performance. For instance, Solar Sister encountered a cultural challenge when they tried to motivate and reward high productivity. Unlike the success-oriented culture of the United States, where employees expect to receive monetary rewards for high performance (e.g., bonuses), the culture in Uganda is community-minded, and employees are not accustomed to pay-for-performance incentives. For example, when Solar Sister offered a team leader a bonus system based on her team's sales productivity, the team leader was concerned that this system would create distrust in her team and network. Solar Sister thus turned to an alternative reward mechanism, i.e., a fixed bonus amount that was not directly tied to her productivity. Another example is when some of the Ugandan women entrepreneurs stopped selling solar lamps after they reached the amount of money they needed for health care or their children's school fees.

We thus observe that human capital development policies, including training, motivating and rewarding social entrepreneurs, require culturally-sensitive and creative solutions designed for specific contexts. Such policies benefit from combining formal and informal training efforts. They also benefit from creating a fit between the levels (and types) of investments and the competency-value profiles of individual participants in the social enterprise system. Given all this, we now focus

on the challenge of how to retain essential human resources after a social venture invests heavily in developing their general and specialized knowledge and skills.

3. Human Capital Retention Challenges and Strategies

Unwanted turnover of human resources both at managerial and operational levels can be a serious challenge (Shaw, Duffy, Johnson, & Lockhart, 2005). In social ventures, turnover can be particularly devastating when firms are in the process of becoming established and trying to scale up. It can be disruptive to day-to-day operations, and is also costly especially when it involves the departure of employees who have received specialized training in the company. High turnover can also be a serious threat to the ability of a firm to scale up in order not only to fulfill its mission (in a larger community) but also to achieve operational and distribution efficiencies that can be paramount to financial viability.

In environments with a scarcity of highly-skilled workers, retention can be hard to achieve. In social enterprises that operate in such environments, we observe that firms face a turnover paradox such that the more they invest in training and developing the specialized human capital of their employees, the more attractive their employees become to their direct competitors or other firms. Put differently, effectiveness in training and human capital development can ironically result in elevated levels of unwanted turnover.

E-Health Point faces this challenge at various levels of employees and management. In the clinics they operate, their technical personnel (nurses and pharmacists) have been heavily recruited by competitor clinics which value E-Health Point employees' customer management and computer skills. As a solution, the company began providing additional incentives and promoting promising employees to supervisor positions. The CEO of the company, Amit Jain, explains that about 30% of clinic employees are women for whom employment opportunities are usually limited. These employees are treated well at E-Health Point, and they appreciate the supportive company culture and being able to work close to where they live (in rural locations). Combined with incentives and promotion opportunities, these intangibles may act as strong inducements for women to stay with the firm.

Turnover at the middle-management level has also been a challenge for E-Health Point. This level consists of management trainees with MBA degrees who are expected to advance quickly and take on high-level responsibilities. Many of these trainees, however, leave the firm within a

year because even after a short period of experience at E-Health Point, they become more attractive in the labor market and can get jobs in urban areas. These employees seem to treat the firm as a training ground, and this has been a concern to the company. As a remedy, E-Health Point decided to rely less on generic MBAs and started recruiting sectoral health-care MBAs with specialized skills and a strong interest in health care careers. The company has also recently started experimenting with a two-year contract that discourages employees from leaving early in their tenure.

The E-Health Point example highlights the importance of recruiting the right people with the "right credentials and values." The generic MBAs may not have the best fit for a social venture if their immediate (and near future) goals are to seek high-paying, urban corporate jobs. In social ventures, an important aspect of recruitment is to hire people not only with the appropriate skill set but also with the relevant values, interests, and life style preferences. Social venture jobs tend to have idiosyncratic challenges that many otherwise capable job candidates may fail to cope with (e.g., working in rural and remote areas with resource scarcities and lack of infrastructure). Thus, employee mindset, values, and preferences are just as important as education and experience credentials. In fact, values and mindset are hard to change whereas certain skills can be developed or enhanced through experience and training (Mintzberg, 2009). We thus observe that success in employee retention is intertwined with careful planning and due diligence in the recruitment stage.

It is also noteworthy that offering market-competitive salaries is not always a solution to turnover challenges (as E-Health Point found out). It is critical that employees (including management) in social ventures are compassionate and psychologically invested in the company and its cause (Miller et al., 2012). Employees are entitled to a good pay and work environment, but they also need to be intrinsically motivated, and derive energy and satisfaction from being part of a social enterprise. Put differently, a combination of monetary and non-monetary incentives is likely to be more effective than one form of incentives alone, yet such combinations would only work to the extent they are valued by the employees. Thus, a match is needed in terms of company goals and employee (personal) objectives. This brings us to full circle in terms of the importance of the diligent recruitment strategy as our starting point. Here we emphasize that a successful recruitment strategy involves frank and clear communication of the firm's objectives, challenges, and available resources, as well as the opportunities for personal growth for the employees. Social ventures are dynamic and evolve quickly; thus, these

conversations need to be revisited regularly. Founders and managers, moreover, play the most central role in this continuum of exchange, education, and co-learning.

CONCLUSION

In this article, we have focused on how a social enterprise's *human assets* contribute to company effectiveness and growth through its policies on (1) human capital acquisition, (2) human capital development, and (3) human capital retention. We emphasize that, in recruiting social venture employees, it is important to consider not only generic skills and education, but also the more crucial and harder to find specialized skills necessary for a specific social enterprise. It is also essential that informal training be promoted (although formal training is still important) and that top performers be identified/targeted for additional training. We also note that effective motivation building and rewarding involves designing (monetary and non-monetary) incentives based on specific contexts (e.g., business type, firm and country culture). We highlight that incentives matter a lot in both motivating and retaining social venture employees, but this alone is insufficient. Retention of trained human resources also relies on diligence in the recruitment stage, with equal emphasis placed on both the skill sets appropriate for, and the values relevant to, being part of a social endeavor. In combination, these human capital strategies (in acquisition, development, and retention of human resources) can play a substantial role in the ability of social ventures to achieve viability, prosper, and fulfill their objectives on a broader social scale.

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SCALING SOCIAL VENTURES
AN EXPLORATORY STUDY OF SOCIAL INCUBATORS AND ACCELERATORS

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Abstract. This article addresses the specific role of programs that attempt to help social ventures scale. We utilize combined experience in the Momentum Project from ESADE Business School and the Global Social Benefit Incubator at Santa Clara University, as well as an exploratory study of 40 social incubator and accelerator programs around the world, to frame the issues. We make a comparison among different programs and classify them as social incubators and social accelerators according to targeted social ventures and portfolio of resources offered. We note opportunities for research on social entrepreneurship and discuss relevant issues for both academics and practitioners such as the structure of these programs, the variance of approaches, and the resources needed by social ventures in their scaling processes.

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INTRODUCTION

Social entrepreneurship appears when companies, charities, and governments fail in their attempts to correct social dysfunction. Sadly, that situation is the case for many global problems. Climate change remains unaddressed to a great extent, extreme poverty still affects billions of people, access to water and deforestation are becoming huge concerns in many parts of the world, unemployment is especially acute among many groups in developed countries, working conditions in some developing countries are far from being decent and fair, and many other problems are not being addressed effectively.

Where markets fail, social entrepreneurs often conceive of business models that look beyond profit maximization; where NGOs fail, social entrepreneurs design more efficient organizations; where governments fail, social entrepreneurs seek the same common good but with less bureaucratic and more flexible initiatives. Therefore, we can say that social entrepreneurship is at the intersection of social mission, market orientation and innovation (Nicholls, 2006).

In the last 15 years, the "fresh air" that social entrepreneurship has brought to the tackling of local, national, and global social challenges has precipitated increased interest among the social sector, academia, governments, media, and corporations. One of the topics that has been on the table from the beginning—since Ashoka travelled around India, Indonesia, and Brazil to support innovative community leaders in improving their projects (Bornstein, 2004)—has been *scaling* social ventures. The reason is clear: innovative solutions usually start in a local area, but as problems are often more global, replicating successful initiatives in other settings is often an attractive scaling strategy.

However, since successful scaling is not easy and the scaling process is not obvious, many institutions are dedicating their efforts to help social ventures increase their social impact. Embracing terminology from the commercial sector, so-called Social Incubators and Social Accelerators have emerged. These programs have experienced a significant boom in the past few years, appearing all over the world and in many different forms.

The purpose of this article is to launch a preliminary study of social incubators and accelerators as important actors in the scaling processes of social ventures and the development of the social entrepreneurship sector in general. Our intention is to initiate a process of bringing order and structure to an emerging field that heretofore has been growing rather randomly. Ultimately, we envision a "best practices" approach to the field. From the point of view of academic research, we want to ground this subfield in the intersection of scaling strategies and social entrepreneurship because we think that an empirical investigation of these programs can bring valuable insights to both. An overview of the entrepreneurship and strategy literature will provide some insights as to how new ventures grow, especially those that do not seek profit maximization. Similarly, a review of the emerging social entrepreneurship literature will provide a better understanding of the nature of social enterprises as a growing set of actors in the global economy.

Our perspective is that of both academics and practitioners, since each author has been involved in both endeavors. The Global Social Benefit Incubator (GSBI) of Santa Clara University has been one of the pioneering and most influential programs in the sector. Starting in 2003, the GSBI has supported over 200 social entrepreneurs from around the world, with both online and in-residence training from the heart of Silicon Valley. Questions about what resources are most needed for social ventures, how to scale the GSBI itself, and how to build a global network of social incubators have carried the institution forward.

The Momentum Project, sponsored by ESADE Business School and global bank BBVA in collaboration with the international accounting firm PWC, is also a one-of-a-kind program. Started in the midst of the Spanish financial and economic crisis, the Momentum Project is an example of collective learning and support for the social entrepreneurship ecosystem. It is also one of the few social accelerators that include direct funding for successful participants. The Momentum Project reaches social entrepreneurs, students, professors, bankers, managers, and many more, and it has crossed the Atlantic to launch new editions of the program in Latin America in order to foster social entrepreneurship in that region.

The first-hand experiences that we have garnered in both GSBI and the Momentum Project provide the context for this study. We start by framing the topic within the social entrepreneurship and scaling literature. We then describe the methods that we used to scan the rapidly expanding field and the results that we found. Finally, we discuss these findings and conclude with ten propositions that reflect our view of how academic research can address the topic of social incubators and

accelerators. We conclude with some suggestions and implications for practitioners interested in the sector.

SOCIAL ENTREPRENEURSHIP

As a field of inquiry, social entrepreneurship has grown rapidly during the past 15 years; this growth has resulted in more attention from governments (Nicholls, 2010; Sud, Vansandt, & Baugous, 2009), corporations (Prahalad, 2006; Yunus, 2009), academics (Dacin, Dacin, & Matear, 2010; Short, Moss, & Lumpkin, 2009), and business schools. See for example the *Academy of Management Learning and Education* series of interviews with well-known strategy expert Michael Porter (Driver, 2012), social entrepreneurship scholar Gregory Dees (Worsham, 2012), successful social entrepreneur Sara Harris (Plaskoff, 2012), and social entrepreneur and Nobel laureate Muhammad Yunus (Kickul, Terjesen, Bacq, & Griffiths, 2012). From an academic point of view, this interest has translated into a growing number of papers in refereed management journals (Granados, Hlupic, Coakes, & Mohamed, 2011; Short et al., 2009).

A number of researchers have attempted to develop a generally-accepted definition of social entrepreneurship or set the boundaries of the field. For example, six books published on the subject in 2006 (Austin, Gutierrez, Ogliastri, & Reficco, 2006; Mair, Robinson, & Hockerts, 2006; Mosher-Williams, 2006; Nicholls, 2006; Nyssens, 2006; Perrini, 2006) offered several conceptual frameworks. Zahra et al. (2009) sought an integrated definition, stating it as: "Social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner." Dacin et al. (2010) find that definitions of social entrepreneurship tend to converge on four key factors: characteristics of individual social entrepreneurs, operating sector, processes and resources used, and primary mission and outcome. The definitions of social entrepreneurship and a social venture have direct implications for how we view social incubators and social accelerators and hence how organizations are classified in our exploratory study.

In general, there are three areas of debate among scholars and practitioners about how to define social entrepreneurship:

- *Broad vs. Narrow definition*. Although a number of scholars use broad definitions wherein social entrepreneurship is at the intersection of social impact, innovation, and mar-

ket orientation (Nicholls, 2006), the challenge, as Paul C. Light (2008) reflects on his own description, is that "the problem with my more inclusive definition of social entrepreneurship is clear: suddenly social entrepreneurship can be found almost everywhere."

- *Individual vs. Collective emphasis*. While early studies were based on the work of individual social entrepreneurs who wanted "to change the world" (Bornstein, 2004), over the years there has been a shift toward focusing on organizations and processes (Mair & Martí, 2006) and more recently even toward the concept of "collective social entrepreneurship" (Montgomery, Dacin, & Dacin, 2012).

- *Not-for-profit vs. For-profit organizations*. On this dimension, there is a large range of interpretations—from researchers who consider only not-for-profit organizations to be social enterprises to others who consider all for-profit companies with a social mission to be social ventures. In general, most scholars do not look at the organizational form but whether the social mission is central to the organization.

While there is no "right" or "wrong" definition, and because it will be difficult to find a unifying paradigm until the field is more mature, it is important for research and analytic purposes that academics, institutions, and, of course, social ventures explicitly identify the basic principles to which they aspire. Such clarity will help investors and other interested parties know beforehand what they can and cannot expect in each case, as well as how to evaluate the claims made or the scope for potential policy applications.

For the purposes of this research, we use a definition of social entrepreneurship that conceptualizes the field rather broadly, which focuses on the activity rather than on the individual or organization form, and which, although putting the social mission at the center (Dees 1998; Dacin, Dacin, & Tracey, 2011: 1204), does not require a particular profit perspective. Therefore, we will define social entrepreneurship as *the practice of targeting social challenges with innovative and market-oriented solutions*, and social ventures as those organizations that *primarily target social challenges through innovative and market-oriented solutions*.

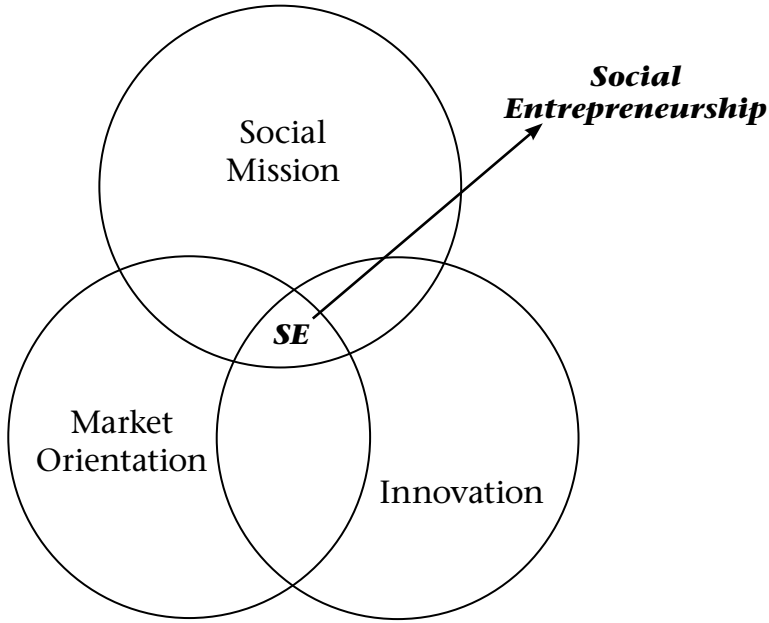

Figure 1: Domain of Social Entrepreneurship

SCALING

A topic that has attracted increasing attention among scholars writing about social entrepreneurship is scaling, or the process of achieving a wider social impact. It is interesting to note that, among social entrepreneurs, the concept of scaling usually refers not to the size of the organization but to the scope or magnitude of the expected social impact. As Bloom and Chatterji observe, social ventures pursue scaling "… because they want to have as big an impact as possible on social problems and because their donors and supporters are hungry to achieve high 'social' returns on their investments" (2009: 115).

The investigation of social impact scaling had previously focused on non-profits (Bardach, 2003) and social innovation (Dees, Anderson, & Wei-Skillern, 2004), but Bloom's model of SCALERS (Bloom & Chatterji, 2009; Bloom & Smith, 2010) demonstrates the relevance of this subject for social entrepreneurial organizations. Indeed, as the social challenges addressed by social ventures are usually large, complex and wicked (Dorado & Ventresca, 2013), scaling becomes a matter of utmost importance. In this sense, it is meaningful that the Unreasonable Institute, an organization that supports social ventures, states that its goal

is "to accelerate these ventures so they can scale to meet the needs of at least *one million people each*."[1] Also remarkable is Ashoka's definition of a social entrepreneur: "(…) they are ambitious and persistent, tackling major social issues and offering new ideas for *wide-scale change*"[2] (emphasis added by the authors in both cases). Again, the figure of 4 billion people who live on less than US$2.50 a day and are the ultimate goal of those social ventures targeting the "base of the pyramid" (Prahalad, 2006) shows the ambition of reaching a large scale with social entrepreneurial projects.

At the local level, social ventures want to scale their projects so that problems can be tackled at a wider regional level. Take for example Anna Cohí, President and Co-founder of DAU, one of the social entrepreneurs who took part in the first edition of the Momentum Project. When she was presenting DAU's business plan to a group of potential investors, she shared a shocking statistic: in the city of Barcelona, where ESADE is located, 3,362 of the 11,207 people who suffer from Severe Mental Disorders (SMD) are capable of holding a job and earning an income. However, only 450 of these 3,362 actually have a job because too few companies offer employment for people with SMD and the companies that do offer employment are too small to make an impact on the number of those employable individuals. This situation translates to an unemployment rate of 87%, which DAU is trying to lower; doing so was the focus of DAU's participation in the Momentum Project, reflected in a determined growth strategy and its need of funds to achieve it.

The issue of scaling social ventures is indeed a difficult challenge. As former United States President Bill Clinton observed: "Nearly every problem has been solved by someone, somewhere. The challenge of the 21st century is to find out what works and scale it up."[3] Part of the challenge of scaling is connected to the ecosystems in which social ventures operate (Bloom & Dees, 2008; Sharir & Lerner, 2006; Vernis & Navarro, 2011). Other actors such as media, governments and financial institutions will have direct effect on the success and growth opportunities in the social entrepreneurship world. The seven "situational contingencies" stated in Bloom and Chatterji's (2009) SCALERS model—(1) labor needs, (2) public support, (3) potential allies, (4) supportive public policy, (5) start-up

[1] ***Unreasonable Institute—What We Do,*** http://unreasonableinstitute.org/2013-institute (accessed April 16, 2013).

[2] ***Ashoka—What is a Social Entrepreneur,*** https://www.ashoka.org/social_entrepreneur (accessed April 16, 2013).

[3] http://www.americanprogress.org/issues/open-government/report/2010/07/01/8053/scaling-new-heights/ (accessed May 13, 2013).

capital, (6) dispersion of beneficiaries, and (7) availability of economic incentives—can be viewed as elements of this broad ecosystem.

This systemic approach to social entrepreneurship is complemented by a resource-based view of the firm (Barney, 1991). For example, Meyskens et al. (2010) showed how successful social entrepreneurs take advantage of resources such as partnerships, financial capital, innovativeness, organizational structure, and knowledge transferability, suggesting that, "when viewed through a resource-based lens, [social entrepreneurs] demonstrate similar internal operational processes in utilizing resource bundles as commercial entrepreneurs" (p. 661). This resource-based view has also led to a focus on organizational capabilities, defined by Collis (1994) as "the socially complex routines that determine the efficiency with which firms physically transform inputs into outputs" (p.145).

As observed by Bloom and Smith (2010) when they tested the hypotheses of the SCALERS model, "Staffing, Communications, Alliance-building, Lobbying, Earnings generation, Replication, and Stimulating market forces" are organizational capabilities which are significantly correlated to the scaling of social ventures. Even though social entrepreneurs are resourceful people (Desa, 2011; Meyskens, Robb-Post, Stamp, Carsrud, & Reynolds, 2010), many of their organizations do not have meaningful capabilities from the onset. This is a possible explanation for the emergence of support programs for social ventures, which have appeared in the last few years.

Little research has been conducted on this subject apart from the experience of incubating university students' social entrepreneurship ideas (Bloom & Pirson, 2010) and a survey that is currently being carried out by the Aspen Network of Development Entrepreneurs (ANDE). For this reason, there is a need for exploratory academic research on the emergence of programs that support social venture scaling in order to clarify concepts, inform research on social entrepreneurship and the scaling of social impact, and offer meaningful insights to the increasing number of practitioners populating the field.

METHODS

Our definition of social ventures sets the boundaries for the identification of social incubators and accelerators—programs that support the scaling process of organizations that mainly target social challenges through innovative and market-oriented solutions. We differentiate these programs from other support institutions in that social incubators and

accelerators offer a set of resources—not only a prize or award—and they usually work with cohorts rather than individual ventures. The resources offered often include training, mentoring, networking, or funding. We make no distinction as to the legal form of these support programs—they can be either for-profit or non-profit organizations, hybrid organizations, or belong to larger institutions such as universities, governments, or financial institutions.

As part of our efforts, we have participated in a larger data collection effort cosponsored by Santa Clara University, the Aspen Network of Development Entrepreneurs (ANDE), Social Capital Markets (SOCAP), and Village Capital. This exploratory study does not reflect this larger effort, currently underway, which will eventually identify and evaluate approximately 90 incubators and accelerators worldwide. Instead, we worked with a set of 40 incubators and accelerators for which we identified some basic features, including country of origin, starting date, length of the program, offerings, requirements, and metrics of success. Given that social venture incubation is a nascent field and that our purpose is to understand the variety of forms that these programs represent, we have approached the study from a global perspective instead of limiting it to a particular country or region.

Our experience in managing social incubators and accelerators has helped us identify "offerings" and "requirements" as the main features for describing and understanding how these programs work and to whom they are addressed. We shared our insight with other senior colleagues from the field and they agreed that these were useful ways to portray these programs. Given our purpose of examining a significant number of social incubators and accelerators being run worldwide (as of December, 2012), we started from our own knowledge base and, as noted, leveraged the networks of our contacts and their institutions. Finally, we looked at the programs' websites to make sure they all matched our definition. We present the findings of this exploratory study in the next section.

RESULTS

Using the two main dimensions identified to portray the programs that support the scaling of social ventures, we have defined a typology comprising two basic types: social incubators and social accelerators. As can be seen in Table 1, each type has a different set of offerings (i.e., resources provided) and a different set of requirements (i.e., targeted social ventures).

	Social Incubators	Social Accelerators
REQUIREMENTS		
Company registered	No	Yes
Full time-employees	None or some	At least 2
Years of experience	0–3	3 or more
RESOURCES		
Training	Entrepreneurial skills	Management skills
Mentoring	Focused on Business Model and initial Business Plan	Focused on growth strategy
Networking	Other social entrepreneurs and broader ecosystem	Other social ventures and broader ecosystem
Access to Funding	Grants or Seed Capital	Debt or Equity

Table 1: Common traits of Social Incubators and Accelerators

The programs that we portray as *social incubators* generally focus on ventures in their early stages of development—less than three years of existence with no particular threshold of revenue turnover or number of employees, and, as they target the social entrepreneurs themselves, often it is not necessary that the organizational form of the venture has been officially declared. The resources offered by these incubators usually include training in entrepreneurial skills, mentoring focused on designing the business model and the business plan, networking with other social entrepreneurs and the broader ecosystems, and access to grants or seed capital.

The *social accelerators* target ventures with at least two full-time employees and a minimum amount of revenue, showing that the company has already been established and has been able to gain market traction for some years. As for the offerings, they usually include management training, strategic mentoring focused on growth strategies in their specific industry, networking with other actors of the social entrepreneurship ecosystem, and access to financial instruments like debt or equity.

These differences between social incubators and social accelerators are also reflected in Figure 2, which depicts the life cycle of a social venture. As can be seen, the former address social ventures in their early stages and attempt to help them with the first stages of their growth, while the latter target organizations with a proven business model and help them reach the scale to which they aspire.

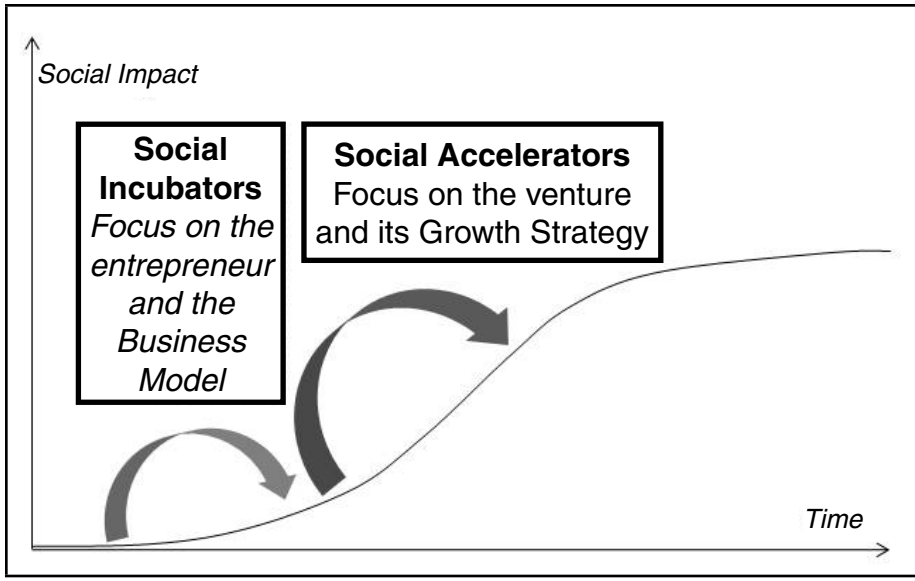

Figure 2: Support programs along the life cycle of social ventures

Appendix 1 contains the list of social incubators and accelerators identified, along with details about the nature of the organization (model of social lab), country of origin, and year of establishment.

NASCENT FIELD

The incubators and accelerators in our study ranged from one founded in 1987 to seven founded in 2012. The 1987 entity, Echoing Green, is a very early stage incubator focusing on less-than-2-year-old ventures wrestling with proof of concept. As can be seen in Figure 3, more than half (22 out of 40) of the incubators and accelerators have been founded in the last 4 years, with the median age of the ventures being 3.5 years. Thirty-seven of the 40 ventures have been founded in this century. Clearly, this is a nascent field.

LENGTH OF PROGRAM

The length of the program offered by the incubators and accelerators was also a variable of interest. Of the 40 programs examined, 21 reported program length on their respective websites. The programs ranged from 6 weeks to 2 years. There was significant variation in the reporting form

for this variable, with some programs reporting only the total length of the program, and some including the specific in-residence time. Of the 21 reports, 11 indicated in-residence requirements of varying lengths. One aspect of this issue was the frequency of the in-residence sessions, some of which were a one-time "boot camp" while other in-residence programs took the form of several 2-day or 3-day modules during the duration of the program. The total in-residence time ranged from 1 to 8 weeks, but most of the programs are offering between 8 and 15 days of in-residence activity. Figures 4 and 5 summarize the reported program lengths.

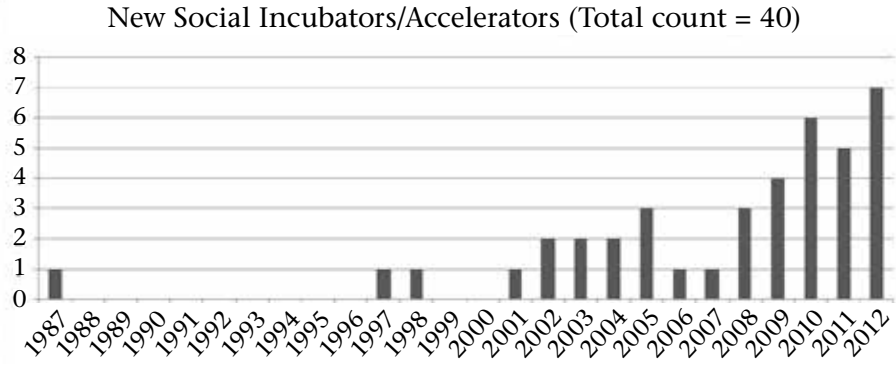

Figure 3: New social incubators/accelerators

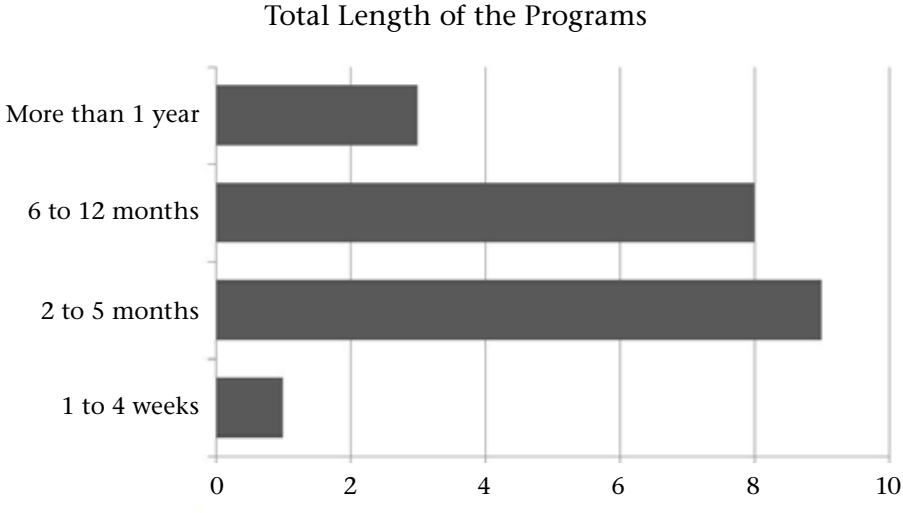

Figure 4: Total length of the programs

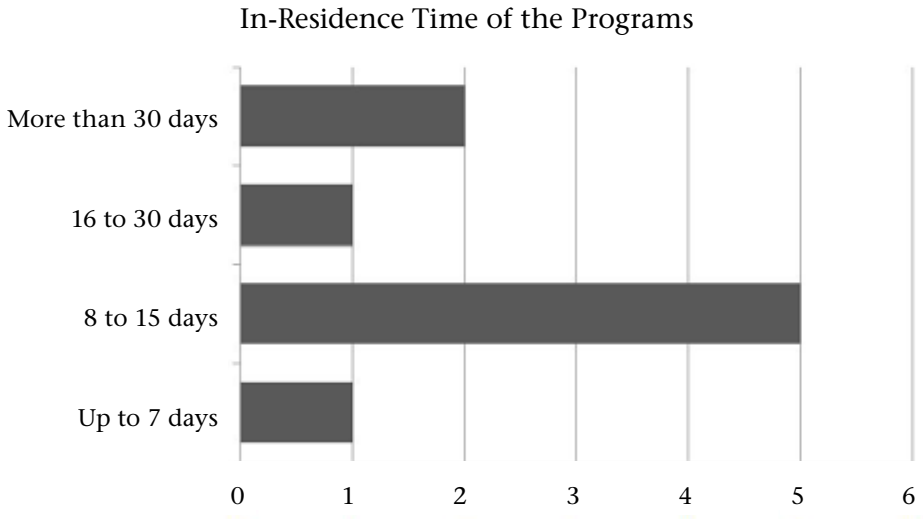

Figure 5: In-residence time of the programs

METRICS

Of the 40 incubators and accelerators that we examined, 13 reported some way or ways success was being measured. We considered each of these in turn with the hope of developing some insights from this level of investigation.

The first organization, Bid Network, which is a hybrid form, was launched in 2005, has 1500 annual candidates, and 30 annual participants. It measures success by a matching dollars metric ($ reported = $13 million), number of businesses launched (673), and number of direct jobs created (4755).

The second organization, Echoing Green, an incubator founded in 1987, reports 20 annual participants selected from thousands of annual candidates. Echoing Green reports that two out of every three fellows achieve sustainability and on average are able to raise 37 times their seed funding over the next 5 years.

Emerge Venture Lab, a relatively new accelerator, has less than 10 annual participants. It reports that 60% are still operational and 45% raised funding after participation in the Emerge Venture Lab accelerator.

Endeavor, an accelerator founded in 1998, reports that in the first two years after participating, its alumni enjoy an average annual growth rate of 59%.

The Global Social Benefit Incubator, founded in 2003 as an incubator, will be transforming into an accelerator in 2013. It reports 15–20 annual participants selected from 150–300 annual applicants. Of its 168 alumni, 93% are still operational and 55% are scaling (defined as revenue growth exceeding cost/expense growth).

Hub Ventures, another accelerator, was founded in 2011 and reports 8–10 annual participants with 80% of alumni still operating.

The Momentum Project, founded in 2011 also as an accelerator, has 10 annual participants selected from 100 annual candidates. It reports that 65% have received funding.

NESST, a hybrid organization founded in 1997, reports 5 annual participants. Its success metrics include 3,928 trained in SE development, 58 SEs currently active and $8.09 million invested to date.

The Propeller Social Venture Accelerator, self-described as a hybrid, was founded in 2012 and has 13–15 participants. It reports that the first 9 fellows generated $2.2 million in external funding and created 40 new jobs.

UnLtd India, founded in 2007 as a hybrid organization, reports 3,200 jobs created with more than 650,000 beneficiaries.

The Unreasonable Institute, founded in 2010 as an accelerator, has 20–25 annual participants selected from 200–300 yearly applicants. It reports that 87% are still operating, and that 68% have raised funds.

Village Capital, founded in 2010 as an incubator, has 60 annual participants. It reports launching 13 programs and serving 250 social entrepreneurs who have created 500 jobs and served 8,000 customers.

Finally, Villgro (SEED), founded in 2002, has 10 annual participants. It reports 3,800 jobs created and 5 million individuals impacted.

While there is some similarity in the reporting, primarily in jobs created and sustainable efforts, there is clearly much variation as well.

There may be several reasons for this variation. Of course, the details of each institution's mission will vary a bit from the missions of the other

institutions, as will its location, relevant environment, age, and so on, but it is certainly a symptom that the field is in an early stage. There is also no general consensus in the social entrepreneurship arena about how to measure the success or failure of social ventures. Concepts like the breadth and depth of impact (quantity versus quality) have to be taken into account; and, of course, utilizing numbers to measure social impact may make for easier comparisons, but it can sometimes lead to misleading conclusions when lasting social change is the objective rather than short-term fixes. On the other hand, it is not easy for incubators and accelerators to create and maintain exhaustive and meaningful impact databases on the social enterprises that have participated in their programs. For some ventures, but not for others, job creation will be important. Some might shift toward an advocacy focus because they think that doing so will have more impact. Others may change from one form to another to take advantage of the expertise garnered in their earlier form.

Measures of success, however, are important not only for comparing different programs but also for program self-evaluation. Yet, it may be difficult for these incubators and accelerators to push their social venture participants toward measuring social impact if they themselves are not capably measuring their own social impact.

CONCLUSIONS

We have focused on identifying patterns and characteristics of social incubators and accelerators, with each cluster having a different set of attributes. Although we have been able to draw some insights from an examination of the data gathered on these support organizations, this is just the first stage of a larger, multi-phased study. As we have observed, this field is a nascent one, with more than half of the scrutinized programs started in the last four years. We have seen that there is significant variation in the total length of the programs (from some weeks to 2 years), with a small portion of the total length typically committed to in-residence time (most frequently between 8 and 15 days). We have also analyzed the metrics used by the different institutions, describing current trends and challenges of this particular topic.

It is worth noting that both the incubator-type and the accelerator-type of support programs are important and necessary for the development of social entrepreneurship and the effective scaling of social businesses. In fact, if it were not for these support organizations, some number of social ventures poised for major impact would fail in their early stages, well before they have the opportunity to scale. The crucial

issue is that these two types of support organizations target different ventures and offer different resources. There are thousands of social entrepreneurs in many developed and developing countries not only with great ideas to "change the world," but also with the determination and resourcefulness that will guide them forward in their endeavors. What will be needed to increase the likelihood of success? Our list includes: to depict a sustainable business model, to receive some training in finance, strategy, marketing, and communication, to establish a network of contacts to help launch the initiative, and to find seed capital to back the new ventures' needs during their first stages.

Throughout the world, there are many social enterprises that have been laboring in the market economy for some years. These entrepreneurs may have different challenges if we compare them to the ones described above because they have already found a sustainable business model as well as the necessary funds to launch their social ventures. Given that these organizations are already in the scale-up process, it is reasonable to ask whether they will need different resources and services to succeed in their effort to increase their social impact. First, it is likely that business skills will be important—not only "entrepreneurial" skills but also those related to the main functional areas in a company—sales and marketing, finance, human resources, operations, etc. Second, access to mentoring should be another key resource. If mentoring for early-stage social entrepreneurs is usually focused on the business model and the business plan, mentoring for later-stage social ventures should address issues such as growth strategies or strategic alliances, and reinforce the whole team rather than solely focus on the individual entrepreneur. Third, as the organizations are older and larger, funding needs will usually be greater. However, as older social enterprises will not suffer from the so-called liability of newness (Stinchcombe, 1965; Stuart, Ha Hoang, & Hybels, 1999), the risk will be reduced and financial instruments such as commercial or convertible loans could become available.

Given that majority of social incubators and accelerators are very young, the field is still evolving. Therefore, questions related to the boundaries, forms and strategies of these programs are still open. For example, social incubators and accelerators will have to decide what resources they will provide themselves with and what they will seek to provide via partnerships. Furthermore, do the resources that they offer match the actual needs of the social ventures, or are they a function of the support organization's capabilities? Will programs be better off if they are for-profit, not-for-profit, or hybrids? How should they be funded? The characteristics and needs of social entrepreneurs will be presumably

different depending on the region in which they are operating. Do these differences raise questions about the efficacy of global programs?

We expect the field to evolve towards improved performance measurement frameworks, especially social impact metrics. Improved metrics will certainly help incubator and accelerator support organizations better achieve legitimization as necessary actors in the social entrepreneurship scene, as well as provide yardsticks for learning and practice improvement. Maintaining relationships with social ventures and sustaining some form of performance measurement after their participation in the programs will be essential to ensuring long-lasting impact. Finally, having networks of social incubators and accelerators, or even an industry association such as ANDE, will enable the sharing of best practices and the constructive comparison of programs. These factors will move the field forward.

These conclusions and open questions have been drawn from our work at GSBI and the Momentum Project, and from the online information we have gathered from other social incubators and accelerators. Table 2 provides information on GSBI and the Momentum Project. The next step will be to build a larger database with detailed information from these and other programs that support social ventures and to explore the adequacy of our classification and conclusions.

FUTURE RESEARCH AND SUGGESTED ACTIONS

In this portion of our article, we have combined our personal experience in the field with the information obtained by scanning the websites of the incubators and accelerators identified. We anticipate that future research will involve follow-on questionnaires and personal interviews, and will help us gain further understanding of these issues. Now we will state directions for future research in the form of propositions so that these can serve as a guide for academics and practitioners as to how the success of social incubators and accelerators can be enhanced.

We view programs that support social ventures in their growth processes as distinct organizations that are worthy of special attention. We also think that they have enough traits in common with each other to allow us to make observations about them as a nascent field.

Proposition 1: Social incubators and accelerators support organizations that combine market-oriented and innovative approaches to address social challenges.

Social entrepreneurs who apply to these programs should understand that they will be expected to have a business focus and an innovative solution in combination with a scalable social mission.

Program	Global Social Benefit Incubator	Momentum Project
Institution(s)	Santa Clara University	ESADE Business School and BBVA
First Edition	2003	2011
Annual participant social ventures	20	10
Participants from each venture	1	2
Length of the program	1 year (9 days in-residence)	5 months (10 days in-residence)
Reach	A global edition complemented with detailed online mentoring to a larger group	Momentum currently has domestic editions in Spain and Mexico
Training	Business models, business planning, financing, human resource development	Sales, Finance, Communication, Growth Strategies, Social Impact, Human Resources
Mentoring	Provided by Silicon Valley entrepreneurs, focused on the business model and the start-up phase	Alumni from ESADE and managers from BBVA, focused on the scale-up process
Finance	Presentations to Venture Capitalists	Presentations at the Social Investment Day and specific financial instrument for Momentum's social enterprises
Classification	Social Incubator	Social Accelerator

Table 2: Comparison between GSBI and Momentum Project

Proposition 2: Social incubators and accelerators offer a portfolio of resources that usually combines training, mentoring, networking, and access to funding.

These resources are usually important for new social (and commercial) ventures, but some social entrepreneurs might need other types of support in their scaling process.

Proposition 3: Social incubators and accelerators do not select ventures based on organizational form (for-profit, charity, limited liability, cooperative, hybrid, etc.).

The organizational form of the social venture is not expected to correlate with its performance, but support programs should include some training or advice regarding the range of available forms for social enterprises and the implications of these alternative forms for various activities (e.g., availability of financial sources). We can find different subsets of programs in the field depending on the origin of the sponsoring institution or the stage of the ventures addressed.

Proposition 4: The origin or the philosophy of the sponsoring institution (educational, financial, governmental) will often influence the operations and the set of resources offered by the program, making use of its expertise but also reinforcing its particular agenda.

Social ventures should apply to those programs that pay special attention to the resources which are important for their particular needs.

Proposition 5: Programs targeting early stage ventures (defined here as social incubators) will focus on the entrepreneurial skills of the social entrepreneurs, their business model and business plan, and grants or seed capital to start the company. Those targeting social enterprises older than three years (defined here as social accelerators) will focus on the business skills of the management team, the growth strategy, and capital (debt or equity) for the scale-up phase (see Table 1 above).

Although it might not be easy to measure the success of these programs, some of them are more effective in their efforts to make social ventures grow. Of course, many variables are at play, but we think that the most important ones are the selection process, access to funding, and partnerships.

Proposition 6: Those programs that exert more effort in carefully designed and expertly handled selection processes, open to a broad population and admitting those ventures that best fit into the program, will have higher rates of success.

The selection process is one of the key success factors of the programs. This activity should receive attention from both the support programs and those who apply to them.

Proposition 7: Those programs that offer specific funding channels to the participant social ventures will have higher rates of success.

Funding is very important for most social ventures, and if they do not have access to it, their growth plans may be limited or even stuck in the bottom of desk drawers. This part of the program should be taken into account by all parties from the beginning—by making clear the responsibilities of the social incubators and accelerators, by introducing the entrepreneurs to prospective funders, possibly by certifying the viability of the participants of the program, and perhaps, by investing in the ventures themselves, etc.

Proposition 8: Those programs that dedicate time to establishing relationships and partnerships with other institutions, thus building an ecosystem, will have higher rates of success.

Social entrepreneurship is seldom a solo game. Not only is it important for social incubators and accelerators to be a part of, and help build, an ecosystem, but it is also important to have partners whose resources can be leveraged.

Proposition 9: If mentors are experienced entrepreneurs with a good understanding of social entrepreneurship and expertise in the industries where their mentored ventures are performing, they will be able to make better contributions to the success of the participants in the program.

Mentoring is important to the success of the programs, but it is not obvious how to address this need. In addition to assuring mentors' availability in terms of time devoted to the program, social incubators and accelerators should focus on recruiting and retaining mentors with entrepreneurial experience, industry expertise, some previous contact with social enterprises, senior management experience, and a commitment to establishing and sustaining a close and trusted relationship with the social entrepreneurs.

Proposition 10: As is usual in nascent industries, we expect that many suppliers (social incubators and accelerators) will appear and disappear until a "dominant design" of support programs becomes the standard.

There are now many different models for how social incubators and accelerators are organized, managed, and funded. As some models succeed and others fail, both financial and social expectations of the different models will have to be met.

SUMMARY

The purpose of this article has been to initiate a systematic and analytical examination of the increasing number of programs that support the growth of social ventures. By linking this discussion to the scaling and social entrepreneurship literature, we have bridged what had been heretofore a practitioner-oriented field to the academic arena. Extensive and intensive research will be necessary in order to verify our propositions with more detailed data about these programs and their participants so as to better understand the role of social incubators and accelerators in the scaling process of social ventures. Our aim has also been to give some hints to social entrepreneurs about the possibilities that social incubators and accelerators can offer and how to make the most of them to enhance significant scaling and social impact.

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APPENDIX 1: LIST OF SOCIAL INCUBATORS AND SOCIAL ACCELERATORS ANALYZED

#	Name	Geographic Origin	First Year	Type
1	Agora Partnerships	Nicaragua	2011	Accelerator
2	Antropia	France	2005	Incubator
3	Antropia Scale-Up	France	2005	Accelerator
4	Artemisia	Brazil	2010	Accelerator
5	Ashden Awards	UK	2001	Hybrid

6	Bid Network	Netherlands	2005	Hybrid
7	Change Fusion Nepal	Nepal	2009	Hybrid
8	Dasra Social-Impact	India	2006	Accelerator
9	Echoing Green	USA	1987	Incubator
10	Emerge Venture Lab	UK	2010	Incubator
11	Endeavor	USA	1998	Accelerator
12	Enviu	Netherlands	2009	Incubator
13	Fledge	USA	2012	Incubator
14	Global Social Benefit Incubator	USA	2003	Accelerator
15	Good Company	USA	2009	Accelerator
16	Hub Ventures	USA	2011	Accelerator
17	iHub	Kenya	2010	Incubator
18	InfoDev "Creating Sustainable Business"	Global	2009	Hybrid
19	Inotek	Indonesia	2008	Hybrid
20	Intellecap (Sankalp Forum)	India	2008	Accelerator
21	Invest2Innovate (i2i Accelerator)	Pakistan	2011	Accelerator
22	Israel Venture Network	Israel	2004	Accelerator
23	La CaixaEmprenedoria Social	Spain	2012	Incubator
24	Momentum Project	Spain	2011	Accelerator
25	NESST	Lat Am & Cent Eur	1997	Hybrid
26	New Ventures Mexico	Mexico	2004	Accelerator
27	Panzanzee	USA	2012	Incubator
28	Pop Tech	USA	2008	Accelerator
29	Praxis	USA	2010	Accelerator
30	Propeller Social Venture Accelerator	USA	2012	Hybrid
31	Rock Health	USA	2011	Hybrid
32	The Ateneo Incubator Program	Philippines	2012	Incubator

33	The Impact Engine	USA	2012	Accelerator
34	UnLtd India	India	2007	Hybrid
35	UnLtd Ventures	UK	2002	Hybrid
36	Unreasonable Institute	USA	2010	Accelerator
37	Village Capital	USA	2010	Incubator
38	Villgro	India	2002	Incubator
39	William James Foundation	USA	2003	Incubator
40	Young Foundation—The Accelerator	UK	2012	Accelerator

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RESÚMENES

El emprendimiento social como práctica de la justicia social

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Resumen. El propósito principal de esta revista es ayudar a movemos más rápido hacia un mundo sostenible y socialmente justo. Vamos a tratar de hacerlo proporcionando un foro en el que el conocimiento sea orientado a la sostenibilidad y la justicia social, que pueda ser publicado y que esperamos influya en todos nosotros como investigadores, gerentes, líderes y ciudadanos del mundo para lograr un cambio positivo. En el comité editorial creemos que este propósito es sólido y esperamos que nuestros editores, colaboradores y lectores estén dispuestos y con ganas de asumir riesgos al probar nuevas ideas y tipos de análisis, puntos de vista y enfoques, así como de aprender de nuestras experiencias, y dar la bienvenida a los cambios y la evolución que tenga la revista. Es evidente que incluso el mejor informado y el más sabio entre nosotros tiene poca certeza acerca de cómo administrar la sostenibilidad global. La humildad es lo apropiado en todo lo que escribimos y hacemos, pero buscaremos combinar la humildad con el rigor intelectual y la audacia profesional.

Arquetipos de modelos de negocio para emprendimientos sociales: Cinco vehículos para la creación de valor económico y social

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Resumen. Los emprendimientos sociales equilibran las dimensiones económicas y sociales de la creación de valor para aliviar los problemas creados por las cuestiones colectivas compartidas. Aunque se sabe mucho sobre la creación de valor económico en las empresas convencionales, poco trabajo empírico se ha centrado en las empresas sociales. A medida que el número de emprendedores sociales sigue aumentando, el reto de la creación de valor económico y social se ha convertido en un importante tema de investigación. En este artículo, se examinan 124 empresas sociales de todo el mundo para profundizar en las formas que emprendimientos sociales persiguen la creación de valor económico y social. Cinco arquetipos de modelos de negocio sociales emergen del análisis de los datos. Se concluye con implicaciones para la teoría y la práctica, y se identifican áreas para investigaciones futuras.

El emprendimiento social que beneficia realmente a los pobres: Un enfoque justicia integrada

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Resumen. El espectacular crecimiento de los emprendimientos sociales en la última década ha demostrado hábilmente cómo la tecnología, la innovación y el espíritu emprendedor pueden permitirse mejores soluciones a los problemas sociales y ambientales acuciantes de nuestro tiempo que los

esfuerzos basados en la ayuda tradicional y la caridad. En la mayoría de los casos, pero no siempre, los pobres y los desfavorecidos se han beneficiado del crecimiento de los emprendimientos sociales. Con el fin de garantizar que el emprendimiento social realmente beneficia a los pobres, es imprescindible que haya guías normativas para la participación justa y equitativa con las poblaciones empobrecidas. Un modelo que ha sido presentado en la literatura de marketing y política pública es el modelo de justicia integrada (MJI) para las poblaciones empobrecidas. Mientras que el MJI se desarrolló principalmente en el contexto de las empresas multinacionales (EMN) que operan en mercados emergentes, su aplicabilidad se extiende más allá de las EMN. Este artículo trata de aplicar los principios del MJI en el contexto del emprendimiento social a fin de proporcionar a las organizaciones sociales emprendedoras (OSE) de un marco normativo destinado a garantizar que los pobres realmente se benefician de sus actividades. En base a este marco, el artículo sugiere algunas áreas a las que las OSE debe prestar especial atención en su práctica. El artículo también presenta algunas sugerencias para investigaciones futuras.

Competencias centrales de la innovación frugal para abordar la sostenibilidad global

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Resumen. La convocatoria para la sostenibilidad global hace eco de las necesidades sociales, ambientales y económicas de todo el mundo. Para responder a esta convocatoria, un proceso de innovación en el diseño que tiene en cuenta adecuadamente las necesidades y el contexto de los ciudadanos del mundo en desarrollo es necesario para desarrollar adecuadas, adaptables, asequibles, y accesibles soluciones, productos y servicios. Este proceso, llamado “Innovación Frugal” se está convirtiendo rápidamente en un estándar contrario a las soluciones sostenibles que son evaluadas. A través de una exploración de las Competencias Centrales de la Innovación Frugal (Frugal Innovation Lab, Santa Clara University), y los correspondientes estudios de caso de las soluciones de campo, se presenta un modelo para empezar a abordar de manera sostenible las necesidades humanas globales.

El rol de las TIC en la ampliación del impacto de las empresas sociales

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Resumen. Las Tecnologías de la Información y la Comunicación (TIC) pueden ayudar a las empresas sociales y otras organizaciones que trabajan en temas de sostenibilidad global y en el sector de desarrollo humano en la escala general de su impacto social. La flexibilidad, el dinamismo y la ubicuidad de las TIC las hacen herramientas poderosas no solo para mejorar las relaciones entre las organizaciones y sus beneficiarios, multiplicando los efectos de la acción en contra de muchos, sino también de todos los aspectos de la insostenibilidad global, incluyendo la pobreza y la exclusión. La escala de impacto social se produce en dos dimensiones diferentes. Por un lado, las TIC pueden aumentar la propuesta de valor de un programa o acción (escala de profundidad) en diferentes formas: ofreciendo el reconocimiento de las necesidades preciso y rápido, adaptando los productos y servicios, creando oportunidades, construyendo mercados más equitativos, movilizando las acciones sobre temas ambientales y sociales, y creando el capital social. Por otro lado, las TIC también pueden aumentar el número de personas alcanzadas por la organización (escala de amplitud) accediendo a nuevos recursos, creando sinergias y redes, mejorando la eficiencia organizativa, aumentando su visibilidad, y el diseño de nuevos canales de acceso a los beneficiarios. En este artículo se analiza el papel de las TIC en la profundidad y amplitud de la escala de impacto social.

El arte del negocio rural

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Resumen. Grameen Shakti ha dominado el arte de los negocios rurales. Hace dieciséis años, la empresa de energías renovables, con sede en Bangladesh, fue una pionera en un mercado inexplorado. Tuvo que aprender el negocio desde cero, incluyendo la forma de comercializar la tecnología solar

mientras buscaba maneras de beneficiar a las comunidades locales. Esto tomaría tiempo, y Shakti comenzó su negocio con un plan para convertirse en sostenible. El éxito posterior de la compañía—permitiendo que cinco millones de personas se beneficien de la luz, la electricidad y adicionales ingresos—demuestra lo que un enfoque empresarial puede lograr en un entorno rural duro. No es magia, lo que se ha convertido en un modelo de negocio maduro y que es practicado en 1.500 oficinas en todo Bangladesh, puede ser estudiado y aprendido. Se trata de financiar a una clientela de bajos ingresos, capacitación, dar servicio confiable y, sobre todo, la innovación y el trabajo duro. En sus raíces, el negocio de Shakti se trata de hacer que la economía funcione para todos, incluyendo a las personas en la base de la pirámide.

Dinámicas de innovación, mejores prácticas y tendencias en el mercado para la Energía Limpia

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Resumen. En 2008, los autores de este artículo desarrollaron una “estrategia del sector” para la Global Social Benefit Incubator (GSBI) en la Santa Clara University, con el fin de facilitar el aprendizaje colaborativo entre las empresas de la base de la pirámide (BoP), la tecnología y la innovación del modelo de negocio, y las ecologías positivas para el desarrollo de clusters. Este artículo resume puntos de vista de la participación del GSBI con 60 empresas del sector de la energía limpia en la BoP.

Trayendo energía limpia a la base de la pirámide: la interacción de los modelos de negocio, la tecnología y el contexto local

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Resumen. Las empresas sociales están proporcionando energía asequible y sostenible medioambientalmente para un pequeño pero creciente porcentaje de los cuatro mil millones de personas que viven con menos de US $ 2,000 / año. La Global Social Benefit Incubator de Santa Clara University (GSBI™) ha trabajado con más de 60 de estas empresas y ha creado sus perfiles en su sitio web Energy Map. En base a esta experiencia directa y la investigación asociada, los autores concluyen que esta interacción entre los modelos de negocio innovadores, las tecnologías de calidad adaptados a los mercados energéticos localizados, y las apropiadas interconexiones con los ecosistemas locales permite a las empresas sociales aumentar su tamaño. Esta conclusión se basa en una revisión de las empresas importantes, incluyendo Shindulai, Solar Sister, Angaza Diseño, Potential Energy, Selco, Husk Power Systems y Practical Action.

Ampliación del impacto en el sector salud

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Resumen. Este ensayo examina las posibles vías para lograr mejoras significativas en la salud de las poblaciones desfavorecidas de los países en desarrollo. Se argumenta que las estrategias no convencionales, en gran medida fuera del sector de la salud como se definen convencionalmente, tienen el mayor potencial para ampliarsede manera sostenible. El ensayo describe dos de estas estrategias: de nutrición y de agua potable. En particular, el ensayo sostiene que los inversionistas de impacto se centran en las empresas sociales que mejor maximizan su impacto en la salud, al mirar de cerca las estrategias descritas en este documento.

El papel del capital humano en la ampliación del emprendimiento social

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Resumen. En este artículo, se discute la importancia del capital humano en el crecimiento y la ampliación de una empresa social a fin de lograr sus objetivos y alcanzar la sostenibilidad financiera. Nos centramos en las tres dimensiones clave para que los activos humanos de una empresa social contribuyan a la eficacia de las operaciones de la empresa y sus misiones: 1) la adquisición de capital humano, 2) el desarrollo del capital humano, y 3) la retención del capital humano. Al discutir y desarrollar estas tres dimensiones, sacamos ideas enriquecedoras y ejemplos de la vida real de dos empresas sociales que estudiamos: Solar Sisterde Uganda y la E-Health Point de la India. Estas ideas de la investigación generada inductivamente enfatiza el compromiso productivo de los activos humanos para la viabilidad a largo plazo de las empresas sociales y la consecución de sus objetivos en una escala social más amplia.

Ampliación de emprendimientos sociales: Un estudio exploratorio de Incubadoras Sociales y aceleradores

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Resumen. Este artículo aborda el papel específico de los programas que tratan de ayudar a ampliar las empresas sociales. Utilizamos la experiencia combinada en el Momentum Project de ESADE Business School y la Global Social Benefit Incubator de Santa Clara University, así como un estudio exploratorio de 40 incubadoras sociales y programas de aceleración de todo el mundo, para enmarcar los temas. Hacemos una comparación entre los diferentes programas y los clasificamos como incubadoras sociales y aceleradores sociales de acuerdo a las empresas sociales focalizadas y la cartera de los recursos ofrecidos. Se toma nota de las oportunidades para la investigación sobre el emprendimiento social y se discuten temas relevantes para los académicos y profesionales, tales como la estructura de estos programas, la varianza de los enfoques y los recursos que necesitan los emprendimientos sociales en sus procesos de ampliación.

The journal welcomes submissions from all management disciplines (e.g., international business, accounting, marketing, finance, operations) and related disciplines (e.g., economics, political science) as long as the manuscript contributes to our academic understanding of the role of management in achieving global sustainability. These articles shall be subject to a double-blind review process overseen by the editorial board. Submissions of theoretical work, empirical studies, book reviews, and practitioner manuscripts in either Spanish or English are all encouraged. Submissions shall be encouraged across two lines, with research briefs and book reviews not exceeding 1500 words and full research papers not exceeding 7000 words.

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