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Scaling Impact: Template Development and Replication at the Base of the Pyramid[1]

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ABSTRACT

In recent years, management scholars and practitioners have been advocating a more prominent role for business in economic and social development at the "Base of the Pyramid" (BoP) where more than a billion people subsist on less than two dollars a day. Yet, in both theory and practice, the development of financially sustainable and scalable business solutions for the BoP has been challenging. By integrating insights from the emerging BoP literature with extant research on the replication of organizational routines and templates, this study examines how the distinctive conditions of the BoP affect the development and replication of scalable business solutions for the world's poor. In particular, we identify key distinctive conditions of the BoP and develop an organizing framework on the mechanisms that facilitate the development and replication of viable and scalable business templates there. Our analysis contributes to BoP research by advancing understanding of the role of templates in economic and social development at the BoP as well as to research on the replication of organizational routines and templates by delineating the distinctive conditions and mechanisms that affect the development and replication of templates at the BoP.

Keywords: Base of the Pyramid, Template Replication, Template Development, Scaling Up, Firm Growth

INTRODUCTION

"Aravind can practice compassion successfully because it is run like a McDonald's, with assembly-line efficiency, strict quality norms, brand recognition, standardization, consistency, ruthless cost control and above all, volume." (Rosenberg, 2013)

An astounding 1 billion people at the base of the world's economic pyramid subsist on less than $2 a day (http://iresearch.worldbank.org/PovcalNet/index.htm?1). In response, scholars and practitioners have in recent years been advocating a more prominent role of business and innovation in economic and social development in such "Base of the Pyramid" (BoP onwards) environments (Bruton, Ketchen, & Ireland, 2013; Prahalad, 2009; Yunus, 1998). A core underlying assumption behind the recent interest in this approach is that one can develop solutions that scale considerably and, thus, exert a positive social and economic impact for large numbers of people living under conditions of subsistence (Anderson, Markides, & Kupp, 2010; Austin, Stevenson, & Wei-Skillern, 2006; Dees, Anderson, & Wei-Skillern, 2004). Such BoP solutions are of interest for their ability to both benefit local BoP populations and become "at least in part, financially self-sustaining rather than relying exclusively upon ongoing donations or government grants" (Kistruck, Beamish, Qureshi, & Sutter, 2013). Successful exemplars such as Aravind Eye Hospitals in India and BRAC in Bangladesh have fuelled enthusiasm for the creation of scalable solutions at the BoP even further. By replicating established templates with only minor adaptations BRAC has grown to become the largest NGO serving the BoP in the world, serving 135 million people in 11 countries, with an astounding 70% of its activities being financially sustainable (Davis, 2013). Likewise, Aravind Eye Hospitals have famously adopted a

"McDonald's approach" reaching a scale that allows them to conduct yearly as many as 60% of the number of eye surgeries that the UK's National Health Service conducts, at a fraction of the cost (Rosenberg, 2013).

Yet, the development and replication of financially sustainable solutions for the BoP seems to be problematic both from a practical and from a scholarly perspective. Reality has lagged behind the rhetoric and examples of organizations that have managed to grow significantly by replicating a successful recipe at large scale at the BoP remain scarce (Kayser & Budinich, 2015; Kistruck, Sutter, Lount, & Smith, 2012; London & Hart, 2004). Furthermore, the BoP literature addresses the issue of replication at the BoP in a fragmented way, largely ignoring theoretical developments related to replication in Top of the Pyramid (ToP onwards) markets. In recent years, management scholars have contributed to a growing literature on the phenomenon of large-scale replication of templates in ToP markets (D'Adderio, 2014; Jensen & Szulanski, 2007; Jonsson & Foss, 2011; Winter, Szulanski, Ringov, & Jensen, 2012; Winter & Szulanski, 2001). A template refers to a working system of organizational routines that serves as the referent or guiding example for an organization that intends to grow by replication (Jensen & Szulanski, 2007; Ringov, Liu, Jensen, & Szulanski, 2016). At the ToP, the systematic replication of templates has been advocated as the main mechanism behind the large scale achieved rapidly by certain organizations, termed "replicating" organizations, which "grow by reproducing a productive system of practices in multiple locations" (Ringov et al., 2016, p. 3; Winter et al., 2012; Winter & Szulanski, 2001). Yet, there has been little scrutiny of the relevance of such theoretical guidance for organizations attempting growth through the development and

replication of templates at the BoP (George, McGahan, & Prabhu, 2012; Walsh, Kress, & Beyerchen, 2005), a context that is distinct across a number of important dimensions. While growth through large-scale replication can be a complex and formidable task for organizations even at the ToP, BoP environments can pose significant additional challenges (Kistruck et al., 2012; London, Anupindi, & Sheth, 2010; Rivera-Santos & Rufín, 2010).

We, thus, explore the following research question: *How do the distinctive conditions at the BoP affect the development and replication of templates?* By integrating insights from the emerging literature on the conditions present in BoP markets and the specific challenges to the development and growth of BoP markets (Kistruck et al., 2013, 2012; London & Hart, 2004) with extant literature on the replication of organizational routines and templates (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006; Winter et al., 2012; Winter & Szulanski, 2001), we identify distinctive conditions at the BoP and develop and discuss a framework on the mechanisms facilitating the successful development and replication of templates at the BoP. In particular, we identify mechanisms related to the "what, how, and where" (Winter & Szulanski, 2001, p. 733) as well as to the "who" of successfully developing and replicating templates in the specific context of the BoP.

We contribute to the BoP literature by advancing current understanding of how business templates can be developed and replicated to promote social and economic development at the BoP, as well as to extant literature on the replication of organizational routines and templates by delineating distinctive conditions and mechanisms that affect the development and replication of templates at the BoP. Our framework improves understanding of the emerging, yet fragmented

area of replication of templates at the BoP by: a) synthesizing the most influential BoP context related conditions that impact the development and replication of templates at the BoP, b) delineating specific mechanisms that can affect the development and replication of templates at the BoP and c) linking the above context-related conditions and mechanisms with the types of replicating organizations most suitable to implement them. Thus, our integration of the two thus far disparate literatures of BoP and replication of routines and templates promotes the advancement of the scholarly conversation and theoretical development on the highly consequential topic of BoP template replication, offering novel propositions and ideas that can be further developed and tested in future research.

BASE OF THE PYRAMID AND TEMPLATE REPLICATION RESEARCH: NEED FOR ENHANCED CONVERSATION AND INTEGRATION

The origins of the "BoP proposition" in the corporate and academic world can be traced back to the work of the late C.K. Prahalad and his colleagues (Prahalad & Hammond, 2002; Prahalad, 2009) who promoted what at the time was a very unconventional proposition: the idea that businesses could both do well and do good, make "a fortune" and simultaneously lift communities out of poverty, by targeting disenfranchised, poor people at the BoP. This proposition challenged a number of prevailing assumptions. First, that companies ought to only focus on their primary economic objective of maximizing shareholder value (Friedman, 2009); second, that it is the exclusive responsibility and capability of governments, not business, to address poverty alleviation at the BoP; and third, that there is no "fortune", no meaningful profits to be made by serving the extremely poor and treating them as one's target market. Counter to

these assumptions, Prahalad and colleagues (Prahalad & Hammond, 2002; Prahalad, 2009) affirmed that social impact and significant profits could be achieved simultaneously by businesses active at the BoP and that these two objectives were complementary, not contradictory, to each other. The optimistic message of concurrent profits and social impact struck a chord with big corporations, especially as high levels of market saturation and competition in ToP markets increasingly limited opportunities for fast-paced growth there (Anderson & Markides, 2007; Kayser & Budinich, 2015).

Since the original articulation of the BoP proposition, the emerging literature on the topic has undergone certain reorientations. The conceptualization of the BoP proposition has shifted from an initial emphasis on big corporations as the primary actors towards examining the role of smaller organizations as well. Multinational corporations were central to the initial BoP proposition, as they were assumed to have the resources and capabilities to succeed at scale at the BoP (Prahalad & Hammond, 2002; Prahalad, 2009). Nevertheless, the implementation of the BoP proposition has in many cases proven to be more challenging than originally expected (Kistruck et al., 2012). As large corporations increasingly realize that profits at the BoP can be lower than expected and successful BoP solutions may require very substantial adaptation of existing business models (London et al., 2010; Olsen & Boxenbaum, 2009), they have become more critical of the idea, sometimes withdrawing from such projects or assigning them to their CSR departments. Accordingly, discussions around ways to serve the BoP have gradually expanded to acknowledge the key role of smaller, entrepreneurial organizations (Kolk, Rivera-Santos, & Rufín, 2014) that may be able to develop scalable solutions for the BoP. Furthermore,

scholars have been moving away from focusing on the poor solely as consumers at the BoP, in favor of "co-creation" models that endorse and integrate the poor as employees and collaborators (London et al., 2010; Schuster & Holtbrügge, 2014; Simanis et al., 2008), as the very real trade-offs that often exist between achieving social impact and economic profitability for organizations operating at the BoP are increasingly acknowledged (Bhatti & Ventresca, 2012; Kistruck et al., 2013). Finally, a growing body of evidence suggests that most solutions for the BoP remain small, local innovations that fail to achieve large scale and, correspondingly, large-scale social impact (Kayser & Budinich, 2015; London & Hart, 2004; Starr, 2014). As a consequence, BoP researchers are increasingly calling for a more nuanced examination of the mechanisms under which the BoP proposition can reach the success and scale envisioned by its proponents (George et al., 2012; Kistruck et al., 2012; London et al., 2010).

At the same time, a parallel scholarly conversation in the management literature has focused on understanding growth through the development and large-scale replication of templates by organizations operating in ToP markets (D'Adderio, 2014; Jensen & Szulanski, 2007; Jonsson & Foss, 2011; Szulanski & Jensen, 2006; Winter et al., 2012; Winter & Szulanski, 2001). A template refers to a working system of organizational routines that serves as the referent or guiding example for an organization that intends to grow by replication (Jensen & Szulanski, 2007; Ringov et al., 2016). In that literature, a strategy of growth through the large-scale replication of a successful template is often viewed as a process that involves two recognizably different phases (Winter & Szulanski, 2001). The first is a phase of development during which the business model that will serve as a template for replication is created and refined. The second

is a phase of replication in which the template is stabilized and leveraged through large-scale replication (*ibid*)[2].

This stream of research has documented that pursuing a strategy of organizational growth through large-scale, template-based replication is far from trivial. A "replication dilemma" often exists between the benefits of replicating a template precisely and the benefits of adapting it to fit the salient characteristics of new environments and incorporate new learning (Devinney, Midgley, & Venaik, 2000; Winter & Szulanski, 2001). While management scholars have long noted, and have provided evidence, that one size does not fit all and, hence, purposeful local adaptation could be essential to achieve enhanced local performance (Ansari & Zajac, 2010; Bartlett & Ghoshal, 1999; Kostova & Roth, 2002; Lawrence & Lorsch, 1967), research on the replication of routines and templates at the ToP has also provided arguments and evidence that organizations may also benefit from an emphasis on the accurate replication of established templates and the conditions under which it may enhance local unit performance (e.g., Jensen & Szulanski, 2007; Szulanski & Jensen, 2006; Winter et al., 2012).

Recent research has provided further nuance to our understanding of the replication dilemma (D'Adderio, 2014; e.g., Jonsson & Foss, 2011; Ringov et al., 2016), yet much work remains to be done to clarify the "where", "how" and "what" of successful replication (Winter et al., 2012;

[2] It is important to note here that Winter and Szulanski (2001), following the seminal work of March (1991), use the terms "exploration" and "exploitation" to refer to the initial development of a template and its later replication. For the sake of parsimony and correspondence with customary business use, we have instead chosen to use the terms template development and template replication respectively.

Winter & Szulanski, 2001). In particular, it is striking that very little research in this stream of work has so far addressed how the development and replication of templates in BoP contexts may be different from ToP contexts (George et al., 2012; Sutter, Kistruck, & Morris, 2014). Extant research on the replication of templates and routines has tended to overlook BoP contexts, while BoP research has largely neglected to make use of insights from the former literature (for exceptions see Kistruck, Webb, Sutter, & Ireland, 2011; Sutter et al., 2014). While adaptation seems to be overly emphasized in accounts of the growth of successful solutions at the BoP (London & Hart, 2004; Schuster & Holtbrügge, 2014; Seelos & Mair, 2007), there are also reasons to expect that the development and replication of scalable templates might be particularly relevant there. Expert knowledge is bound to be very limited in BoP environments, thus a proven template based on superior practices can yield performance benefits for those that closely replicate it (Sutter et al., 2014). Likewise, as Seelos & Mair (2007, p. 52) observe, "(n)ontraditional and uncertain environments increase the difficulties in understanding cause-and-effect relationships", which have been identified as a major impediment to local adaptations even in ToP contexts (Winter & Szulanski, 2001). Indeed, in the field of practice, there are salient examples, such as Aravind Eye Hospitals, Kickstart, or Grameen Phone, of organizations that have developed a highly standardized template and have achieved its rapid, large-scale replication (Kayser & Budinich, 2015; Rosenberg, 2013; Seelos & Mair, 2007). For example, Kickstart, selling irrigation pumps in sub-Saharan Africa has gradually moved away from a model based on extensive adaptation towards the standardization of its template, in its efforts to achieve scale (Bhatti & Ventresca, 2012). While the limited literature directly addressing the

issue of growth in BoP contexts has hinted that these contexts possess distinctive conditions that affect replication (Kistruck et al., 2011; Sutter et al., 2014), it has provided little systematic theoretical guidance to link the distinctive conditions at the BoP to implications and mechanisms for the development and replication of templates at the BoP. We explore this question in the sections that follow.

DISTINCTIVE CONDITIONS AT THE BOP

The billion people included in the BoP reside across a wide range of geographies and cultures and, thus, BoP contexts exhibit substantial variation across locations (Kayser & Budinich, 2015; Rivera-Santos & Rufín, 2010; Simanis & Hart, 2009). Nevertheless, certain characteristics are common to these contexts and underlie the challenges to successful template development and replication present there (Rivera-Santos, Holt, Littlewood, & Kolk, 2015; Rivera-Santos & Rufín, 2010). The distinctive conditions discussed below are not the only ones that characterize BoP markets, but have been considered particularly pertinent by scholars, under a variety of similar names, in previous work (London et al., 2010; Rivera-Santos & Rufín, 2010; Zoogah, Peng, & Woldu, 2015).

Resource Scarcity

BoP contexts are characterized by extreme *resource scarcity* (Seelos & Mair, 2007; Sutter et al., 2014). On the one hand, resource scarcity refers to BoP consumers' severely limited (or non-existent) disposable income. Unmet needs alone are not sufficient for BoP templates to create viable market propositions (Simanis, 2011) – the target customers need to have some, even if minimal, disposable income as well (Kayser & Budinich, 2015). The ultra-poor are usually

unlikely to pay for anything outside the sphere of absolute necessity (Collins, Morduch, Rutherford, & Ruthven, 2009). Thus, Simanis (2011, p. 111) highlights non-consumption as the "defining condition of the BoP". As a result, the severe disposable income constraints prevalent in BoP markets (Seelos & Mair, 2007) significantly limit the scope and nature of organizational templates that would be potentially viable there.

Another type of resource scarcity is related to the productive potential of BoP contexts. In ToP contexts, organizations can typically count on being able to access a wide variety of needed resources and capabilities through well-functioning markets (Helfat et al., 2009; Peteraf, 1993). Similar access to resources and capabilities is not widely available to organizations operating in the BoP. For example, producing locally can be difficult due to a generalized lack of productive facilities, including factories and technologically advanced machinery (Bhatti & Ventresca, 2013; Zoogah et al., 2015). Moreover, many people in BoP contexts typically have not had enough opportunities to engage in paid employment that extends beyond rudimentary agricultural production, livestock rearing or crafts (Karnani, 2007; Kistruck et al., 2011). As a result, a widespread lack of employment, experience and competencies, and in particular of managerial experience/competencies, impinges on the ability of organizations to procure appropriately trained employees to ensure the smooth running of their operations. Furthermore, the lack of professional experience is compounded by low levels of education and high rates of illiteracy (Zoogah et al., 2015). In many extremely poor contexts, opportunities for publicly funded education are severely limited, while private education is costly, perpetuating a vicious cycle of low education and limited employment choices (Sen, 1999). Thus, even when a template

might be viable from a demand side perspective, its development and replication could be constrained or derailed by supply side factors. An illustrative case is that of HealthLine, a telemedicine venture established by the Grameen Bank in Bangladesh, whose rapid growth was thwarted by the lack of sufficient numbers of qualified doctors with which to staff their operations (De Carvalho, Klarsfeld, & Lepicard, 2012).

Institutional voids

A second striking characteristic of BoP contexts is the widespread lack of well-functioning institutions, namely the prevalence of *institutional voids* (Khanna & Palepu, 1997; Mair, Marti, & Ventresca, 2011; Mair & Marti, 2009). In ToP contexts, it is easy for people to be oblivious to the enabling role of institutions due to their continued and taken-for-granted presence (De Soto, 2003). Yet, markets operate efficiently only within infrastructures that provide rules and routines for ensuring fair play and consistency. In contrast, "institutional voids" will result where there is a dearth of established property rights, transparency, enforcement of contracts, and supervising or enabling intermediaries (Ault & Spicer, 2014; Khanna & Palepu, 1997; Mair et al., 2011). Enforceable property rights, for instance, are required for the development of well-functioning real estate markets as well as for the use of real estate as a guarantee for other financial transactions, yet such rights are either non-existent or not reliably enforced in many BoP contexts (Portes & Haller, 2005; Rivera-Santos & Rufín, 2010; De Soto, 2003). Compounding this problem, most BoP economic activity is informal and unregistered by official authorities, limiting the extent to which regulations can be invoked and enforced in case of unethical behavior (Webb, Tihanyi, Ireland, & Sirmon, 2009). Such gaps in information and enforcement

regarding sound business practices produce disincentives that thwart entrepreneurial initiative (Anokhin & Schulze, 2009). Financial institutions cannot rely on customer information to offer services, nor can they make use of guarantees in case of suspended repayments of loans (Ghatak, 1999; Webb, Bruton, Tihanyi, & Ireland, 2013). As a result, real estate also cannot be easily exchanged and there is little incentive to invest in and develop it (Anderson et al., 2010; De Soto, 2003). Concomitantly, individuals and organizations know that potential profits from entrepreneurship might not be protected in the event that business partners renege on their promises (Mair & Marti, 2009). Moreover, corruption "provides perverse market incentives that distort resource allocation" and ultimately affect organizational efficiency (Sutter, Webb, Kistruck, & Bailey, 2013; Zoogah et al., 2015, p. 14). As a result, organizations operating in these contexts might need to bear substantial transaction costs (Khanna & Palepu, 2000), which can make their involvement in markets less attractive. In sum, institutional voids are a key characteristic of BoP markets, particularly in developing countries, which, as we argue in the sections that follow, can be expected to have a significant impact on the development and replication of business templates at the BoP.

Hybrid motivation

Finally, a third distinguishing condition of BoP contexts that may affect the development and replication of templates is related to the possible *hybrid motivation* of organizations active at the BoP. Organizations that "straddle the well-established categories of business and charity" are considered hybrid (Battilana, Sengul, Pache, & Model, 2014, p. 2), in that they are frequently driven by dual motivations: that of social impact and that of economic profitability or at least

sustainability (Austin et al., 2006; Mair & Marti, 2006). Prahalad's (2009) assertion that concurrent economic profits and social impact are possible at the BoP implied that a hybrid, economic and prosocial, motivation would form the basis of business involvement at the BoP. The argument that financial objectives need to be coupled with social objectives at the BoP has been echoed by subsequent research (Ansari, Munir, & Gregg, 2012; George et al., 2012; London & Hart, 2004). Given the extremely low income of this segment of the world's population, it may be considered unethical to make profits from the extremely poor without contributing to their well-being. Frequent corporate misdemeanors have cultivated mistrust towards businesses, which can backfire when local communities or international movements threaten to withdraw their "license to operate" locally (Hart & Sharma, 2004; Kayser & Budinich, 2015; Walsh et al., 2005). Indeed, Kistruck et al. (2011) have provided some evidence that big corporations are frequently viewed as illegitimate actors at the BoP.

Moreover, the high profitability advocated by Prahalad has not been an easy feat for organizations operating within challenging contexts (Ansari et al., 2012; Ault & Spicer, 2014; Karnani, 2007). Profits from BoP activity are often low, given that costs of development, production, distribution, and infrastructure building can be high relative to sales volume and margins (Kayser & Budinich, 2015), while payback periods can be long (Simanis, 2011). Additionally, the win-win framing of the BoP propositions obscures the reality that trade-offs often exist between the dimensions of social impact and profits (Kistruck et al., 2013; London et al., 2010). Organizations that target higher income segments in developing countries can be more profitable, but less impactful that those targeting the BoP and vice versa. For example,

microcredit organizations that target the poorest customers typically earn lower total profits than those targeting bigger loan sizes and more prosperous clients (Cull & Morduch, 2007; Hermes, Lensink, & Meesters, 2011). Thus, extant theory and evidence suggest that organizations interested in developing and replicating scalable solutions for the BoP may benefit from a hybrid motivation (Battilana & Dorado, 2010), combining social welfare and business orientation, if they are to find such an endeavor worthwhile in the long run.

TEMPLATE DEVELOPMENT AT THE BOP

We propose that organizations who are intent on reaching large scale in BoP markets should be particularly attentive to the implications of the aforementioned distinctive BoP conditions for both the initial development of potentially scalable BoP templates and for their later replication at scale. We argue that template development, during which the business model that would be used as a template for replication is created and refined (Winter & Szulanski, 2001), is in itself a major challenge in BoP contexts, and subsequently a prerequisite for any efforts at large-scale replication. While the initial development of a template is an emergent process that cannot be completely predefined (March, 1991; Winter & Szulanski, 2001), we identify mechanisms that affect the likelihood of successful development of templates that would be viable and amenable to large scale replication at the BoP given its distinctive conditions.

Major cost / risk reductions

Extreme resource scarcity implies that developing an economically sustainable template at the BoP will be challenging. BoP templates typically have to incorporate business models and cost structures which are fundamentally different from the ones in place in similar product

markets at the ToP (Olsen & Boxenbaum, 2009; Prahalad, 2009). Yet, an organization that has large-scale growth aspirations will also need to make sure that these new economics are encapsulated into an internally consistent, proven system of organizational routines (a template) that is replicable across a variety of new locations and environments. We propose that the likelihood of an organization developing a template amenable to large-scale replication at the BoP will be higher if the template development process is guided by the objective of offering significant reductions in the cost and risk experienced by the target customers compared to existing alternatives. We further propose that such cost and risk reductions can be achieved through cross-subsidization, aggregation of organizational functions, use of disruptive technology or distribution, and reductions in the upfront investment required from clients.

Cost can be reduced for clients if a template enables segmentation according to clients' paying ability and subsequent cross-subsidization across them. Cross-subsidization occurs when "profit made on "regular customers" is reinvested to compensate for the lower price paid by poorer customers" (Kayser & Budinich, 2015, p. 94). Thus, the practices of audience segmentation and price differentiation, regularly implemented in ToP markets (Kotler & Armstrong, 2010), are being adjusted to absorb the costs of servicing BoP customers at a discount or for free. Such cross-subsidization permits templates to cater to clients of different need and paying ability, while maintaining the viability of the template in the aggregate. For instance, by maintaining a two-tiered pricing structure, partly targeted to paying customers and partly targeted to non-paying customers, Aravind Eye Care was able to create a template that was both economically viable and replicable (Rangan & Thulasiraj, 2007). Similar strategies have

worked successfully for the Nicaraguan corrective glasses venture Asembis and for the Indian heart surgery hospitals Narayana Health (Kayser & Budinich, 2015).

Organizations operating at the BoP can also drastically alter the economics underlying market failures by aggregating certain functions, if previously production and marketing costs had been distributed across poor, self-employed people, rendering transaction costs too high to bear by any single one of them. Larger organizations can build into their template a centralization of functions, thus achieving efficiencies that individual producers would not have been able to realize (Kistruck et al., 2013). For example, inefficiencies have long plagued local agricultural markets in sub-Saharan Africa, as individual production is of extremely small scale and farmers do not have the means or knowledge to invest in R&D, storage, distribution, collective whole-selling or forward contracting to international clients (Bell & Milder, 2008; Kistruck et al., 2013; Thurow, 2013). As a result, organizations exploring the creation of viable agricultural markets in the BoP, such as One Acre Fund or Root Capital, have been able to achieve significant economies of scale and corresponding price reductions by aggregating such functions cost-efficiently within their template. Microcredit organizations have similarly used aggregation of functions to provide group – instead of individual - credit to poor people, reducing prohibitive transactions costs to a considerable extent (Ghatak, 1999; Stiglitz, 1990).

Alternatively, costs can be reduced if a template is designed to include the absolute minimum product or service required at the BoP, stripped of additional features that are desirable and frequently taken for granted in ToP markets (Bhatti & Ventresca, 2013; Christensen, Baumann, Ruggles, & Sadtler, 2006). Such designs for BoP contexts are frequently termed frugal,

disruptive or catalytic innovation, alluding to their lower cost and features, but also to their potential to ultimately "disrupt" even ToP markets (*ibid*). In BoP environments, poor people with limited options and income might welcome the opportunity to purchase a product or service that is of basic quality as long as it improves their choices due to its significantly lower price. For instance, before Aravind Eye Care started offering frugal cataract surgeries the alternative for a poor person was to remain blind (Rangan & Thulasiraj, 2007).

Resource limitations do not manifest themselves only as absolute limitations in covering the cost of needed products or services, but also through the relative risk that they represent for BoP clients. Vulnerability is a key issue (Collins et al., 2009; Morduch, 1999): one wrong choice or investment can be highly detrimental to survival. Thus, BoP consumers tend to be much more risk-averse than consumers in more munificent environments. Templates that significantly reduce the real and perceived risk of adopting a new product or service can thus enhance the viability of a template at the BoP (Anderson & Markides, 2007; Kayser & Budinich, 2015). In some instances, credit provision can also reduce the perceived investment risk. For example, Toyola, a BoP venture selling efficient cooking stoves in Ghana initially give their product to poor customers for free, and instruct them to collect for three months the savings from reduced charcoal consumption, achieving repayment rates of 95% (Kayser & Budinich, 2015). Renting out the use of a costly machine or other consumer durable can similarly mitigate the risk for people at the BoP and adapt to the small-scale investments that they can afford. In conclusion, integrating into a template a substantial reduction of cost, risk or both could greatly increase its

appropriateness for a BoP context, and its ability to achieve the objectives of initial viability and potential scalability at the BoP.

Substitutes for missing or poorly functioning institutions

The institutional voids prevalent at the BoP, meanwhile, pose different challenges to the development and replication of templates at the BoP. Khanna & Palepu (1997, 2000) have demonstrated that in underdeveloped markets, institutional voids across capital, labor and product markets, as well as government regulation and contract enforcement may favor the development of substitutes for such services in-house. Internalizing the services of missing institutions cost-effectively, or alternatively outsourcing them to other organizations, such as local or international NGOs, may increase the viability of a template at the BoP. For instance, a major institutional void that acts as an impediment to successful template development in the BoP is the lack of consistent registration of people or of their economic activity (Webb et al., 2013, 2009). Organizations at the BoP can nevertheless develop templates that use new, cost-effective technologies as a means for addressing the lack of registration and monitoring, and reducing the associated transaction costs. For instance, microcredit organizations have begun using biometric authentication to register clients, with positive results (Giné, Goldberg, & Yang, 2012; Hernandez & Mugica, 2003). Alternatively, in sub-Saharan Africa, organizations have taken advantage of increasing mobile phone penetration to tie the sales of products and services to clients identified through their mobile accounts.

Social accountability can also mitigate the costs of informality and lack of information regarding individuals´ behavior. Microcredit organizations have made a breakthrough by

developing templates that relied on provision of group loans premised on group repayment and accountability in order to overcome institutional voids (Ghatak, 1999; Stiglitz, 1990; Yunus, 1998). As lack of collateral and lack of developed registries of past credit history deterred traditional banks from lending to the poor (Yunus, 1998), microfinance organizations managed to leverage family and kinship ties and social group pressure (Khanna & Palepu, 2000) to ensure timely repayment of loans, thus overcoming existing limitations.

Business model versus technological innovation

While many practitioners as well as scholars had expected technological innovation to serve as the basis for the creation of organizations and markets that can substantially improve the lives of the poor (Hammond, 2001; Schumacher, 2011; Warschauer & Ames, 2010), templates that succeed in improving conditions for poor people at the BoP need not have the provision of an advanced technological product at their core. First, for poor people lack of income is a major limitation (Karnani, 2007; Prahalad & Hammond, 2002) that often constrains the use of new technologies. Second, as previously mentioned, living at the limits of subsistence, people at the BoP have a limited capacity to deal with uncertainty and risk (Collins et al., 2009), including the experimentation with new, unproven technologies that might fail. Third, people at the BoP often do not have the education and adequate exposure to complex technologies needed for a quick learning curve and adoption of emerging technologies. Finally, maintenance of complex technological products often requires an infrastructure of service outlets dedicated for this purpose. Due to these often overlooked reasons, templates primarily based on technological innovation have frequently failed to deliver their purported objectives (Acumen, 2011). An

example is the One Laptop Per Child project, whose results have failed to meet its ambitious objectives (Warschauer & Ames, 2010). Another example is Project Impact, which successfully developed the technology for a low-cost hearing aid but faced considerable obstacles in bringing it to market (Acumen, 2011).

In contrast, we propose that successful templates at the BoP will focus less on delivering new-to-the-world technological innovation that often implies high costs and possibly high maintenance needs neither of which can be borne by poor people, and more on business model innovation that overcomes the limitations associated with resource scarcity and institutional voids. Templates based on business model innovation may fare better at the BoP because sufficiently suitable technologies that can deliver value for the poor are typically already available. Organizations such as IDE or Kickstart, which provide irrigation pumps to farmers that previously lacked irrigation options, developed their templates around products based on rudimentary technologies that would hardly be considered to be at the cutting edge of technological innovation in their area. Likewise, M-Pesa in Kenya has been very successful in forming a template that offers easy money transfers through a mobile phone service to BoP customers, even though the software and hardware technology of the phones is far behind the technological innovation frontier. Recent research disentangling upstream innovation ("invention") from downstream commercialization ("innovation") in high technology environments highlights the importance of the later for successful delivery of new products or services (Kapoor & Klueter, 2014) in cutting-edge, ToP markets. We suggest that the positive

effect of downstream business model innovation on template development and replication success is bound to be even more pronounced in challenging BoP contexts.

Moderately embedded entrepreneurs

A further mechanism that facilitates template development at the BoP is related to the hybrid motivation necessary for persistence in challenging BoP environments. Due to the trade-offs between financial and social objectives (Kistruck et al., 2013; London et al., 2010) and the low or modest financial profits typically accruing at the BoP (Ansari et al., 2012; Karnani, 2007), for many big corporations that endorsed the high impact and high profit mantra of the BoP proposition, the reality of BoP operations has been sobering (Simanis et al., 2008). Large multinational corporations are typically alien to local communities, and thus may be unable to develop relevant products and services (Simanis & Hart, 2009). That happens even in cases where they adopt the co-creation and ethnographic immersion approaches advocated by many BoP proponents, because creating a market in the absence of one can prove extremely challenging (Simanis, 2011). Companies alien to the local context tend to frame deficiencies as problems to be rectified, leading to negative business concepts and potentially appearing as opportunistic (Arora & Romijn, 2012; Simanis, 2011). Moreover, they need to overcome substantial barriers to gain the trust of local communities or deal with crime and informality (Anderson et al., 2010; Kistruck et al., 2011). Compounding these challenges, multinational organizations struggle to reconcile their BoP initiatives with their core business models internally (London & Hart, 2004; Olsen & Boxenbaum, 2009). Strikingly, even when they manage to overcome these challenges, they frequently eventually abandon the activity, marginalize it, or

assign it to their CSR departments. An example is the Orja clean cook stove business developed by BP in India, or the soy protein business of Solae in the same country, which were marginalized due to a management change and a financial downturn respectively (Kayser & Budinich, 2015; Simanis, 2011).

Some authors have addressed this issue by urging for greater embeddedness and commitment on the part of multinational corporations (London & Hart, 2004; Simanis & Hart, 2009). Yet embeddedness is not a quality that can be developed quickly and it is by definition relevant to those organizations that have their origins within a context. Ironically, the successful examples reiterated by BoP proponents (Prahalad, 2009; Simanis & Hart, 2009) are usually NGOs that were embedded in and committed to a local context from the start, such as Grameen or BRAC in Bangladesh. We suggest that during the early stages of template development, organizations that have realistic expectations are more likely to sustain their operations in the face of adversity and limited profits. As a result, entrepreneurs or organizations with an explicit social motivation are more likely to be undeterred by low financial performance as long as social impact is being realized, and therefore more likely to persist in their efforts until a viable template has been developed (Ault & Spicer, 2014; Kistruck et al., 2013).

Templates with a built-in social orientation and realistic financial projections are frequently developed by individuals or organizations who are highly knowledgeable of and empathic with a local context (Miller, Grimes, McMullen, & Vogus, 2012; Rivera-Santos et al., 2015), while retaining a certain outsider perspective (Dorado & Ventresca, 2013; Marti, Courpasson, & Dubard Barbosa, 2013). Such actors also have additional advantages in terms of template

development. First, they are more likely to come up with a relevant solution: “Being grounded in settings of poverty facilitates the appreciation, understanding, and accurate interpretation of what occurs within such settings" (Bruton et al., 2013, p. 684). Second, they naturally enjoy the trust and goodwill of their local community, which is based on informal ties (Rivera-Santos & Rufín, 2010). An example is Grameen´s repeated success in developing new templates for the BoP, such as Grameen Phone, through leveraging their close ties with the community forged during the development of their microcredit model (Simanis & Hart, 2009). Thus, an entrepreneur or organization that is embedded in the local BoP context will be more likely to be motivated and capable to develop a viable template for the BoP.

On the other hand, over-embeddedness in the local context can hinder the ability of individuals or organizations to undertake the divergent action that is needed for the creation of social value (Dorado & Ventresca, 2013; Seelos, Mair, Battilana, & Dacin, 2011) and for reaching beyond their original site and bridging out to other communities (Ansari et al., 2012; Portes & Haller, 2005). Consequently, individuals and organizations that balance the insider and outsider perspectives (Haas, 2010; Marti et al., 2013) are more likely to initiate entrepreneurial activities in highly constrained environments. Such actors are better positioned to successfully support novel templates, as they are credible enough to implement them, and motivated enough to continue with their efforts even when profits are modest or challenges significant (Dorado & Ventresca, 2013; Seelos et al., 2011). For instance, a local professional with international professional experience, such as Mohammad Yunus of Grameen Bank, or an international professional who has migrated into a local community, such as Martin Fisher of Kickstart

(Fisher, 2006; Yunus, 1998), are examples of moderately embedded entrepreneurs who are natural candidates for the task of developing templates for the BoP.

Behavioral change

For many organizations active at the BoP, their hybrid motivation and, in particular, the social impact objective of their work may lead them to aspire to effect substantial changes in the behavior of poor people. Yet, strong local perceptions, for instance those related to animal rearing or agricultural farming techniques, are very difficult to influence or replace (Sutter et al., 2014; Thurow, 2013). Moreover, the assumption that poor people do not have strong product or service preferences rooted on local cultural differences has derailed several well-intentioned attempts to market to the BoP, even when products have been very cheap or given for free (Acumen, 2011; Kayser & Budinich, 2015). For instance, the provision of mosquito nets, either very cheap or for free, has not ensured their consistent use and adoption by poor people (Tarozzi et al., 2014), as many find sleeping under nets uncomfortable, consider malaria a trivial disease, or attribute it to causes other than mosquitoes (Shah, 2011).

Templates can differ in terms of the expectations of behavioral change they require. If substantial behavioral change on the part of customers and employees is a main component of the template to replicate, the rate at which these can replicate under high cultural distance conditions will be significantly lower. Hybrid motivation might encourage efforts to substantially change behavioral patterns of poor people at the BoP, yet organizations should not underestimate the difficulty and time needed to effect these changes. In certain cases, it is possible to induce adoption of products or services by converting them into status symbols, leveraging the positive

power of "negative" mechanisms such as envy and social pressure. For instance, Sanishop has converted affordable toilets into an object of status, with simple techniques such as painting the wall behind the toilet they install, so that people will be proud and talk to neighbors about their new possession (Kayser & Budinich, 2015). Organizations can also leverage the power of early adopters such as local businesses or well-respected community members, to make their products or services more desirable (*ibid*). Yet, in cases where deep inequalities need to be addressed and lasting behavioral change needs to be effected, purely philanthropic interventions rather than financially sustainable BoP templates might be more relevant (Mair et al., 2011), as the time, costs and risks required for such deep behavioral changes are likely to be substantial, likely exceeding what an economically self-sustaining template would be able to accommodate.

The BoP as employees

Due to the resource scarcity present in BoP contexts, coming up with a scalable template for the BoP entails overcoming supply-side, as well as demand-side limitations. Due to the latter, offering opportunities for local people to gain income is often a critical component of successful BoP templates (Fisher, 2006; London et al., 2010). Organizations that incorporate local people into the value chain as employees are more likely to overcome the limitations of restricted income (Anderson et al., 2010). Synergies can be achieved when locals earn wages acting as agents or entrepreneurs for an organization operating in the BoP (Van Kirk, 2010; Kistruck et al., 2012, 2011), part of which can be spent on buying products and services offered by the organization. Moreover, poor people can be mistrustful of new products or services; as a result,

the endorsement of those products and services by local, trusted community members greatly reduces the barriers to adoption (Kayser & Budinich, 2015; Thurow, 2013).

Engaging people within the value chain is furthermore in line with the hybrid motivations needed for success at the BoP. Organizations such as social intermediaries, whose objectives are to improve "transaction arrangements, and to redistribute the resulting economic rents in a more equitable manner", are intent on developing local capability to empower local people (Kistruck et al., 2013, p. 32). Approaches that consider the poor exclusively as consumers have been criticized as inadequate for reducing poverty and improving living standards in both theory and practice (Arora & Romijn, 2012; Bruton et al., 2013; London et al., 2010). When locals are treated as entrepreneurs or sales people that own the products they sell, they experience greater pride and identification in their role (Kistruck et al., 2012) and are more aligned with the organization's goals. They can furthermore help organizations create products that are relevant to their needs and perspective (Simanis et al., 2008) and that enjoy their trust and protection (Anderson et al., 2010; London & Hart, 2004).

Simanis (2011) goes as far as suggesting that people at the BoP should be integrated into all stages of the process of template development, through co-creation. Notwithstanding, there can be challenges when pursuing co-creation at all stages of template development. Building local capacity can sometimes be more time-consuming and less efficient than if the organization were to leverage its existing capabilities or personnel to perform certain tasks (Bhatti & Ventresca, 2012; Kistruck et al., 2013). Furthermore, the interest of locals engaged as part-time salespeople might wane as they progressively saturate their proximate geographic territory

(Kayser & Budinich, 2015; Van Kirk, 2010). Moreover, poverty engenders a lack of empowerment (Sen, 1999), and know-how can be limited under such circumstances (Sutter et al., 2014). It is therefore hard to imagine people living at the border of poverty coming up with templates for the provision of goods and services such as microcredit, irrigation pumps or cataract surgeries, and indeed the local entrepreneurs who came up with those models were rarely living in abject poverty themselves. Van Kirk (2010) for instance describes how local weavers in Guatemala could not understand that the solution to their loss of ability to distinguish the threads they were weaving could be a simple pair of corrective glasses; nor did local women believe him when he told them they could be trained to provide such glasses to those needing them – they thought that such activities could only be conducted by educated "doctors". Yet, once the solutions are explained to local people and they are trained and empowered to gradually take on the relevant duties, they can be extremely successful in those tasks (*ibid*).

In sum, we expect that organizations at the BoP will have higher chances of large-scale replication when they manage to create synergistic relationships and foster a greater distribution of rents by engaging the BoP communities they operate in as employees or producers (Ansari et al., 2012; Hall, Matos, Sheehan, & Silvestre, 2012). A solution to mitigating the slow pace of developing local capacity can be found in the standardization of this procedure. Templates that fare best typically break down the involvement of local people into concrete, easily understandable stages that can be replicated across locations with limited variation. For instance, SKS microfinance has been involving locals who follow easy procedures as microcredit officers, achieving strikingly fast replication of their template (Akula, 2008). Similarly, BRAC in

Bangladesh offers certain products, such as eyeglasses, to poor clients through a system of village ladies. The organization has consciously decided to opt for a very simple offering in those cases that seems extremely constraining to Westerners, but which allows even illiterate women to perform sales following easily understandable instructions (Kayser & Budinich, 2015). We thus suggest that inclusion of poor people as employees into BoP templates is a mechanism that can enhance the initial viability and large-scale replication potential, but only if such involvement has been to a significant extent standardized into a simple template.

TEMPLATE REPLICATION AT THE BOP

We now turn to mechanisms that may have a direct impact on the ability of an organization to successfully replicate a template at scale at the BoP once developed. Large-scale template replication, which follows the development of an initial, successful template (Winter & Szulanski, 2001), can be expected, just as in the case of template development, to be affected by the distinctive conditions that characterize the BoP, namely resource scarcity, institutional voids and the need for hybrid motivation.

Visibility and claims to the organization

Even if a template is successful in the location where it was originally developed, in a severely constrained environment success itself can become a liability and an impediment to its replication in new locations. While in resource-abundant ToP environments, the initial success of a template attracts further resources from interested audiences that stand to benefit from it (Aldrich & Fiol, 1994; Pontikes, 2012), the same is not automatically true in resource-constrained BoP environments. Any activity that generates even modest revenue or earnings may

be evaluated as highly successful in environments of abject poverty. In these environments, the more an organization grows, the more its founder(s) will be faced with increasing demands and claims from rent-seeking constituencies to share the profits or financially help those in need (De Castro, Khavul, & Bruton, 2014; Thompson & MacMillan, 2010).

Yet, before an organization has reached the scale and stability that would allow it to weather such demands, they can be highly taxing, inhibiting subsequent growth through replication. Outsiders might be unable to distinguish between activity levels, revenue levels, and the resulting profits or losses that accrue to a new organization (Thompson & MacMillan, 2010), and this problem can be compounded by the relatively lower levels of financial literacy in BoP contexts. Local audiences might equate highly visible activities with evidence of high profitability. Thus, demands for contributions from stakeholders and other outsiders can negatively affect the growth of a new organization that still lacks sufficient scale and slack (Kistruck, Webb, Sutter, & Bailey, 2014; Sutter et al., 2013; Thompson & MacMillan, 2010). Indeed, De Castro et al.´s extensive qualitative investigation (2014, p. 88) indicated that "to avoid a backlash from those on whom their success depended, entrepreneurs took measures to minimize visible symbols of success." Additionally, illegitimate individuals or organizations can also impose illegal financial demands on new organizations when these are successful and visible in their communities (Sutter et al., 2013). In response, entrepreneurs operating in BoP environments would resort to “altering their business model in a way that decreased exposure to illegitimate actors, working without publicity, disguising the nature or existence of the business,

and moving the business to a new location where the illegitimate actors could not find them" (*ibid*, p. 744).

Conversely, there are certainly examples of higher visibility ultimately generating benefits for the growth of BoP templates. For example, Husk Power Systems' ability to provide proof of the success of their original template helped them secure the support of the Indian government for the replication of their model to a number of other Indian provinces. EABL in Kenya also managed to achieve a 100% excise tax rebate due to the health and safety benefits of their low-priced "Senator Special" beer vis-à-vis the illicit, and often highly toxic, brews they were competing with (Kayser & Budinich, 2015). Thus, extending the argument of Kistruck et al. (2014) that formalization is a double-edged sword that can augment both resource provision and resource appropriation, we concur that visibility of the activity might have adverse effects on growth at the early stages of template replication, yet positive effects at later stages.

In addition, providing a rationale for operation that is premised on substantial social value creation might be able to shield the fledgling organization from value appropriation claims, as local communities and stakeholders are more likely to forego financial benefits in the case of highly visible social benefits. One example of this mechanism is provided by Thompson & MacMillan (2010), who cite a project aiming to create bakeries that would provide employment opportunities to distressed areas of South Africa: local elders that saw increased activity assumed that the organization was realizing large profits and demanded a correspondingly large fee. To counter such a demand that could be fatal for the project, the entrepreneur and employees had to

spend considerable time to explain to them the objectives and social benefits that it would bring to their region.

Infrastructure building

It is furthermore important to recognize that the success of template replication sometimes depends on mechanisms that are largely outside the sphere of influence of the organization itself. For instance, it would be very hard for small-scale organizations to lobby governments for institutional changes, as their small size precludes them from exerting significant power or pressure. Their efforts at influencing institutions can constitute a big burden in terms of money and time, potentially leading to their demise (Tracey, Phillips, & Jarvis, 2011). Furthermore, even when a number of ventures and other stakeholders collectively realize the need to collaborate in order to develop a market and change the institutional voids that inhibit it, collaboration frequently breaks down due to a "tragedy of the commons" (Kayser & Budinich, 2015). A tragedy of the commons can arise when mutual benefits are expected from collaboration, but no single actor wants to be the first to contribute the substantial upfront investments and efforts, as they fear that other actors will subsequently free-ride and benefit without incurring any costs (Kayser & Budinich, 2015; Ozcan & Santos, 2014). However, if the market to be created has a strong social value component, interested non-profit organizations or foundations may sometimes volunteer to bear the high cost and substantial effort of changing institutional structures. For instance, USAID and other development agencies have been investing for years in infrastructure building to enable the microcredit industry to eventually become financially viable (Rhyne, 2001). They have lobbied governments to create the

regulatory frameworks that enable non-profits to act as financial institutions while also helping raise funds for the financing of microcredit institutions. More recently, the AGRA Foundation set up by international donors has been investing in infrastructure and R&D to improve the viability of agricultural BoP templates in Africa (Bell & Milder, 2008; Thurow, 2013). It intervenes at various stages of the value chain, where collective institution building has failed, such as those related to scientific training, crop research, seed bulking and seed distribution. In general, once such costs and efforts at infrastructure building are assumed by external organizations, the replication of a BoP template becomes more feasible as infrastructure costs need not be borne by the focal organization alone - or passed on to its customers and beneficiaries.

Leverage by influential external organizations

Finally, we wish to highlight an important paradox that affects the replication of successful BoP templates. While, as discussed, moderately embedded entrepreneurs or organizations will be the ones most motivated to persist in their search for viable templates, those entrepreneurs frequently lack the motivation or skills to replicate such templates at scale and realize their full social and economic impact potential (George et al., 2012). Even in ToP markets, entrepreneurs tend to be attached to their organizations and they cannot easily cede control and develop organizational structures so that the business progresses naturally through its lifecycle (Greiner, 1972). The founder syndrome is similarly pervasive in BoP contexts, and even more so due to the hybrid motivation sustaining the efforts of many founders (Kayser & Budinich, 2015). Founders that have established their organizations due to prosocial motivations (Miller et al.,

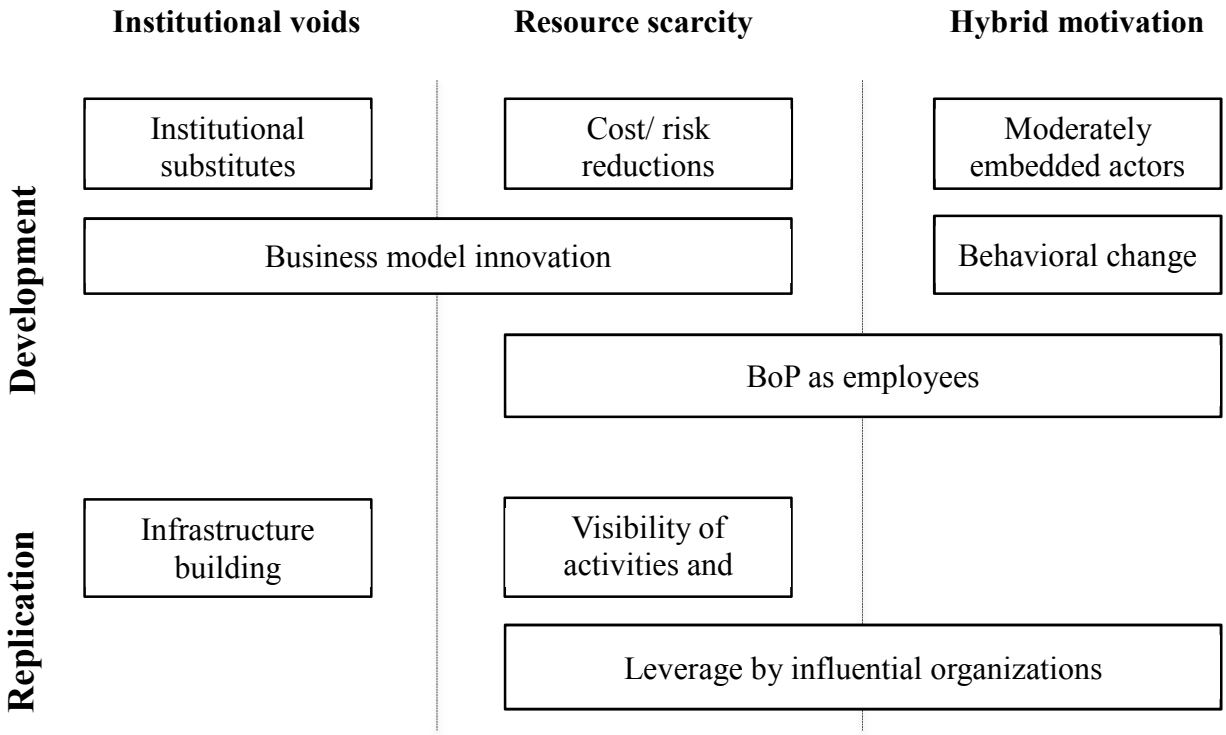
2012) are more likely to be intimately connected to them and unwilling to let go, while they may have less options for exiting their programs without destroying social value (Kayser & Budinich, 2015). Additionally, many - though not all - founders of BoP organizations tend to adopt a "small is beautiful" mindset (Schumacher, 2011), believing that scale will greatly decrease the quality of their offering, as organizational structure and bureaucracy could mitigate the personal attention and commitment that can be channeled to each project and beneficiary (Kayser & Budinich, 2015). The motivation of founders to pursue replication is typically also affected by a perceived lack of resources for effecting a large-scale replication of their templates.

When an entrepreneur has already developed a viable template, larger organizations can step in and leverage their resources to help replicate it faster. While larger organizations can be active, as previously mentioned, in influencing the institutional environment that can enable successful template replication, they are also suitable candidates for directly leveraging templates due to their undeniable resources (George et al., 2012); indeed, they sometimes manage to partner with local organizations to offer greater scale. Examples can be found, among others, in the cases of large multinationals such as Nortel and Danone, who through their collaborations with local organizations have scaled up telecommunications services and nutritious foods respectively for Bangladeshi people (Seelos & Mair, 2007), or in international and national NGOs and Foundations that have partnered with BRAC to replicate its successful templates outside its home country of Bangladesh, and within Asian, African and Middle Eastern countries (Davis, 2013, 2015). Similarly, governments, due to their mandate to provide better economic and human development to their constituencies, can be an alternative facilitator of replication.

Scarce research exists that examines such replication, but programs that have a proven template have sometimes managed to successfully lobby governments to secure contracts that can ensure their large-scale replication. Ziqitza Health Care, which was the first organization to establish an affordable ambulance service in Mumbai at a time when suitable ambulance services for the public were almost non-existent, is a fitting example. The organization managed to successfully lobby the government for transparent procurement and for recognition of the social benefits of its template and as of 2011 was offering a combination of 199 subsidized and of 42 user-paid services across various Indian states (Batavia, Chakma, Masum, & Singer, 2011). Figure 1 summarizes the relevant mechanisms identified as facilitating the development and replication of templates at the BoP, linked to the distinctive conditions of BoP environments.

Figure 1

Determinants of Successful Template Development and Replication at the BoP



DISCUSSION AND CONCLUSIONS

This paper examines the distinctive mechanisms affecting the development and replication of templates within BoP contexts, a subject that has generated great interest but one where the development of theoretical guidance has lagged behind press "hype" and anecdotal evidence (Kistruck et al., 2012; Kolk et al., 2014; London & Hart, 2004). By integrating insights from the emerging literature on the conditions present in BoP markets and the specific challenges to the development and growth of organizations at the BoP (Kistruck et al., 2013, 2012; London &

Hart, 2004) with extant literature on the replication of organizational routines and templates in ToP contexts (Szulanski & Jensen, 2006; Winter et al., 2012; Winter & Szulanski, 2001), we identify distinctive conditions at the BoP and develop a framework on the determinants of successful development and replication of templates there.

Contributions and Implications

This article contributes to the BoP literature (e.g., Kistruck et al., 2012; Kolk et al., 2014; London & Hart, 2004; Seelos & Mair, 2007) and the literature on the replication of organizational routines and templates (D'Adderio, 2014; Jonsson & Foss, 2011; Winter et al., 2012; Winter & Szulanski, 2001) by advancing our understanding of the potential of developing and replicating organizational templates to promote social and economic development in these challenging environments. The more mature literature on the replication of organizational routines and templates at the ToP offers a body of theory and findings that can greatly inform research on the BoP, specifically research on the large-scale replication of templates there, because the debate on local adaptation versus replication at the BoP (Kistruck et al., 2011; Simanis et al., 2008; Sutter et al., 2014) is inherently closely related to the corresponding debate in the literature on replication at the ToP (D'Adderio, 2014; Ringov et al., 2016; Winter & Szulanski, 2001). Our key premise, based on observations from research and practice and consistent with extant theory developed for the ToP (Winter et al., 2012; Winter & Szulanski, 2001), is that developing and leveraging templates that are economically viable and replicable can fundamentally magnify the economic and social impact of organizations active at the BoP.

Our synthesis of extant BoP literature suggests that a number of conditions present at the BoP, key among them resource scarcity, institutional voids, and hybrid motivation (Battilana & Dorado, 2010; Mair et al., 2011; Seelos & Mair, 2007), render template development and replication more elusive than in the ToP. Templates will need to incorporate already at the development phase resilience and robustness to the above conditions that are likely to be endemic across BoP environments. By clarifying these basic premises, this article attempts to bring greater cohesiveness to the highly fragmented BoP debate and literature (Kolk et al., 2014) and thereby facilitate future cumulative progress. Taking that as our point of departure, we propose mechanisms that facilitate the development and large-scale replication of templates at the BoP, providing an organizing framework that can be used as a point of departure and further elaborated in future research.

We make a theoretical distinction between mechanisms that affect the development versus mechanisms that affect the replication of templates at the BoP. Moreover, we examine the distinctive mechanisms affecting the "where", "how" and "what" of successful template development and replication (Winter et al., 2012; Winter & Szulanski, 2001) in the specific context of BoP environments given their distinctive conditions. These mechanisms can attenuate the distinctive conditions of the BoP and facilitate the development and replication of templates at the BoP. We suggest that "what" can be successfully replicated to large scale are templates that are standardized, developed with an eye towards major cost and risk reductions, business model innovation, low-cost substitutes for key missing institutions, and active engagement of BoP communities as employees or producers, while avoiding the pursuit of major behavioral

changes. Related to the "how" question of replication at the BoP, we contend that organizations can leverage social mechanisms to make products highly desirable when behavioral change is necessary, and they can grow under the radar until the point that their visibility is inevitable; after that they will need to exhibit clear social benefits to communities and get endorsement for their model from highly influential organizations at the local and national level. Finally, the necessity to offer culturally appropriate products and services suggests that the "where" of replication may bear similarities to ToP markets (Jonsson & Foss, 2011): behavioral change difficulties are less likely to be pronounced in settings with similar cultural idiosyncrasies, and so expanding to areas of close geographical or cultural proximity can enable large-scale replication with less extensive adaptation.

To the above dimensions we add the "who" of successful large-scale replication. Countering the underlying assumption in the literature that any organization can be successful in the BoP (Prahalad & Hammond, 2002; Prahalad, 2009; Simanis et al., 2008), we suggest that the complex distinctive characteristics of these contexts make the question of "who" particularly critical for success. We theorize that moderately embedded individuals or organizations, such as local entrepreneurs with international exposure - or alternatively expatriates with long-term residence in their host country - are the ones better positioned and most motivated for successful template development (Dorado & Ventresca, 2013; Marti et al., 2013; Miller et al., 2012). While these same entrepreneurs or organizations could also be successful at the replication stage, it is more likely that, for a variety of reasons we discuss, replication will likely be facilitated by the

leverage of external powerful organizations or actors, such as large local companies, governments, NGOs, or international social business groups.

Thus, bridging the BoP and the replication of templates literatures results in a number of contributions and implications for the latter too. While this literature has a longer history with well established premises and increasingly more nuanced theoretical development (Jonsson & Foss, 2011; Ringov et al., 2016; Winter & Szulanski, 2001), it has generally focused theoretical and empirical attention on countries and populations at the ToP (for exceptions see Kistruck et al., 2011; Sutter et al., 2014). We extend the boundaries of this literature to the BoP context by suggesting specific mechanisms, not present in current replication literature focused on the ToP, that affect template development and replication at the BoP. Thus, this study can be viewed as advancing a more nuanced view of the challenge of replication that makes a step towards extending the boundaries of replication research not only beyond the ToP, but towards the very challenging context of the BoP where approximately 1 billion of the world's population lives (http://iresearch.worldbank.org/PovcalNet/index.htm?1).

Limitations and future research

This study can be viewed as a step towards the greater integration of the BoP and replication literatures. Our discussion of mechanisms that influence replication at the BoP is not meant to be exhaustive, but rather focuses on those mechanisms that could be considered particularly relevant and salient in extant research on the BoP. We have, thus, centered our discussion on those mechanisms that are closely linked to the key distinctive conditions of the BoP; other

mechanisms might affect the replicability of templates across both BoP and ToP environments, yet these lie outside the scope of this article.

We believe that the perspective and framework on the determinants of successful development and large-scale replication of BoP templates provided by this study open up a number of fruitful avenues for future research. Specifically, researchers interested in the development and replication of scalable solutions at the BoP could theoretically and empirically examine the mechanisms advanced in this article. For example, scholars could examine and further refine the effect that characteristics of the focal organization, such as local embeddedness or type of motivation, have on the success of the template's development and replication. Furthermore, qualitative work could shed further light on the processes underlying the mechanisms we identify, which are only partly understood. For instance, the relationship between behavioral change requirements and template viability at the BoP could be unpacked further, and the same holds for the process through which organizations build the appropriate infrastructure for template replication at the BoP. We therefore see substantial promise in both large-sample empirical examinations of the mechanisms identified in this article and their further theoretical exploration and refinement. Future studies could also shed light on further mechanisms, not identified here, that might also influence template development and replication at the BoP.

Future work could also explore whether and to what extent some of the factors that affect the development and replication of templates at the BoP also apply to the development and replication of templates at the ToP. For example, major cost reductions might be particularly

relevant to the replication of templates even at the ToP, as notable "disruptive" templates, such as low-cost airlines, Ikea furniture, or cheap clothing stores have indicated. Similarly, integration of local people as both buyers and employees in templates could be adopted at the ToP, and might hold certain potential as poverty now inflicts many communities within otherwise developed countries. In conclusion, we consider the subject of large-scale template replication at the BoP ripe for greater input, debate and scrutiny by both BoP scholars and scholars studying the development and replication of organizational routines and templates and look forward to a stimulating stream of future integrative, boundary-spanning research in this highly consequential field of inquiry.

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