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Success at the Base of the Pyramid: A relational view of competitive advantage

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Abstract

In this paper, we propose a new framework to measure the success of projects at the Base of the Pyramid (BoP), based on the relational view of strategy (Dyer and Singh, 1998; Lavie, 2006; Mesquita et al., 2008), and we test the framework using new case studies. We argue that the success of BoP projects depends on relation-specific resources and capabilities resulting from partnerships among participating organizations. Typical partners involved in a BoP project are firms that make a product or a service designed for BoP customers, a public or private agency that has local knowledge and presence, and a BoP community that uses the product. The relational view model can help assess the sustainable success of a BoP project because it examines unique interorganizational relationships and relation-specific combination of resources designed to create sustainable value (Dyer and Singh, 1998; Dyer, 1996). We apply this important model of strategic analysis to two new BoP projects.

Introduction

The so-called Base of the Pyramid (BoP) consists of more than 4 billion people who earn less than $2/day. Although people at the BoP have scarce resources, the global BoP market is estimated to be worth about US$5 trillion in purchasing power parity (World Resources Institute, 2007). Much of the BoP relies on what is called the "informal sector" for their goods and services (Kubzansky et al., 2011). Local intermediaries that exert monopolistic pressure on suppliers often control the informal sector, such that the products they provide to the BoP are often high priced, inaccessible or unavailable, and inappropriate to their needs and wants (Kubzansky et al., 2011). But the BoP has captured the attention of many businesses that want to change the way they sell to this important low-income market segment. Many are redefining their relationship with the BoP from that of an afterthought, to one that is targeted toward growth and profitability. Companies believe there is a large untapped market at the BoP, and that by serving it they will sell products that introduce more buyers to the mainstream economy (Rangan et al., 2007), increase sales and profits, and help eliminate poverty (Prahalad, 2006). As firms target their products for sale to BoP customers, those customers' needs are better met because products are a better fit and are more affordable, creating more local savings and reducing poverty (Akula, 2008).

Doing business at the BoP has received critical fanfare from supporters (London and Hart, 2004; Prahalad, 2006; Prahalad and Hammond, 2002) and detractors (i.e., Karnani, 2007). Some say that many such initiatives only involve the poor as consumers, not as co-inventors, entrepreneurs, or suppliers of materials, labor, or knowledge (Kolk et al., 2010). The BoP concept was first introduced in 1999 (Prahalad and Hart, 1999), and since then researchers have published scores of papers on the topic. Most of them chronicle anecdotal examples of BoP projects, and another

third addresses management and marketing issues (Kolk et al., 2010). Research on the BoP has been extremely valuable, yet scholarly work on the BoP has been slow to create compelling *theoretical* explanations that measure or explain the success of doing business at the BoP (Pitta et al., 2008). Recent work in strategic management has suggested a staged cost-and-benefit approach to the BoP (Gollakota et al., 2010), the importance of strategic alliances (Seelos and Mair, 2007), the importance of a good partner selection (Gradl et al., 2010), and the role of networks in implementing BoP projects (Rivera-Santos and Rufin, 2010). Other papers have suggested paths to successful BoP projects, such as attaining social and financial viability (Jose, 2008), leveraging strengths of the local market (London and Hart, 2004), developing appropriate intermediaries (Ireland, 2008), and using a systems approach (Nielsen and Samia, 2008). But few propose models or frameworks to assess BoP project success (Shukla and Bairiganjan, 2011). Our goal is to help develop a framework that might do this, and provide a new strategic perspective to the BoP.

We use the relational view of strategy to examine the success of BoP projects based on interorganizational competitive advantage (Dyer and Singh, 1998; Lavie, 2006; Mesquita et al., 2008). We argue that the success of BoP projects depends on the partnerships established by the organizations engaged in BoP projects, and the resources they provide to it. Using the relational view of strategy, we offer propositions and a framework to explain BoP success. Then, we apply the framework to two BoP projects generated by two organizations based in Michigan, United States, using primary data obtained through interviews. We examine the resources of the key partners in each project: the organization that manufactures the product, the organization that distributes it, and the customer/user group in the BoP community. Then, we assess if the

resources of the partners combine to produce unique partner-level capabilities based on four criteria that combine the relational view with ideas proposed by Prahalad (2012): the existence of *relation-specific assets leading to tailored and scalable solutions, knowledge-sharing routines creating user awareness, affordability, availability and accessibility, complementary resources and capabilities that change the value chain,* and *effective governance created by unique partnerships*. Prahalad's (2012) criteria complement the relational view because they suggest that successful BoP projects engage suppliers, producers, distributors and end-users in meaningful relationships and knowledge-transfer. Those, in turn, lead to the creation of resources and capabilities that are unique to the relationships. Our new strategic model, discussed in detail below, may explain the success of BoP projects if these unique relationships and relation-specific resource combinations create sustainable value (Dyer and Singh, 1998; Dyer, 1996).

Theory

Strategy's purpose is to explain firm-level performance. One model of strategy, the resource-based view (RBV), explains that a firm's performance is a result of a firm's ability to obtain and deploy unique resources and capabilities (Barney, 1991; Barney, 2011), leading to higher profitability. The RBV suggests that a firm can position itself for long-term success by bundling valuable, rare, difficult to imitate, and non-substitutable resources into capabilities, converting them into distinctive competences that exemplify what the firm does better than any other (Barney, 1991; Selznik, 1957). A second model of strategy, the industrial organization (IO) model, argues that a firm's industry determines a firm's success (Porter, 1980). The IO model suggests that the greater the number of "partners" who supply to or purchase from the firm, the

greater its bargaining power because low switching costs give the firm leverage (Williamson, 1985). Yet it does not address unique relationships between arms-length parties. Similar, or better, results can occur from relationships with other parties, and those relationships are usually not rare nor are they difficult to imitate.

A third view of strategy, the relational view, argues that competitiveness is a result of interfirm sources of advantage, not the resources of a single firm (Gomes-Casseres, 1994; Lavie, 2006). The relational view builds on the RBV, arguing that if a partnership or an alliance creates relationships that are more beneficial than normal, this may generate relational rents (Dyer and Singh, 1998). Relational rents are "supernormal profits jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners" (Dyer and Singh, 1998, p. 662), and are evidence of competitive advantage. The relational view suggests that partnerships can create these supernormal benefits if partners invest in relation-specific assets, engage in substantial knowledge exchange and joint learning, combine complementary but scarce resources that result in the joint creation of unique products, and use effective governance (Dyer and Singh, 1998). In short, partners involved in a project may create competitive advantage if they combine their resources and knowledge to achieve shared goals, and if they devise good governance methods that lower transaction costs (Dyer and Singh, 1998). For example, firms in Silicon Valley greatly improved their performance by developing long-term partnerships with suppliers located close to them (Saxenian, 1994): when firms were physically located near one another, unique, interfirm relationships emerged that helped solve complex technological problems.

The relational view applied to the BoP

The relational view may contribute to BoP research because so much of the success of BoP projects depends on specific resource combinations that develop from the unique partnerships among the organizations involved in BoP projects. The most successful BoP projects, according to the relational view, unite resources provided by suppliers, manufacturers, distributors, and/or buyers, into new, relation-specific assets, that lead to products and services that truly solve people's problems.

Organizations that manufacture products to sell to the BoP have very specific and measurable goals. They will include financial measurables: more customers, higher revenues, increased market share, and higher profits. Buyers at the BoP have goals too, some of which are social and occasionally ecological (Jose, 2008): they want high quality, valuable, affordable products that solve their problems and improve their lives. These goals may not be inconsistent, but they may be difficult to achieve without a significant level of dialogue among producers, distributors and end-users. Indeed, Prahalad (2012) offers four criteria suggesting that BoP projects may be successful to both sellers and buyers:

1. If they are *tailored* to the problems of the BoP market segment, and are *scalable* so that thousands or millions can be sold and financial goals can be met (Ireland, 2008; Prahalad, 2012). For example, to create a better cooking stove for rural women in India, the firm First Energy observed local women's cooking habits for a long time to understand the buyer and her requirements. Once they *tailored* the stove's design, they made it *scalable* so that a million units could be sold within five years in other locations (Chu, 2007).

2. If buyers are *aware* of what the product is and does, if the product is *accessible, affordable, and available* (Sharma, 2011; Shukla and Bairiganjan, 2011). If people are un*aware* of how to use that new cooking stove, or that it will save money and time, or that it is safer than cooking with wood, they won't buy it (Sharma, 2011). If people truly want the new stove, but it's not *available* to them because the supplier cannot deliver it, they can't buy it. If the stove's price is not *affordable,* they won't buy it.

3. If the BoP product *modifies the value chain*, and adapts to the BoP customers' constraints and opportunities (Budinich et al., 2007). Value chain activities often must be re-created, reconfigured, reduced, or eliminated to achieve a BoP project's sustained success (Kim and Mauborgne, 2005). For example, the Aravind Eye Care System in India provides quality cataract surgery for an affordable $50 by allowing local villagers to perform surgical services, which lowers the cost and the price per patient (Rangan, 2009).

4. If organizations create *partnerships* that build, test, sell, and educate people about the product (Rivera-Santos and Rufin, 2010). Companies may benefit from *partnerships* with local organizations to design, distribute, or educate consumers about new BoP products. Hindustan Unilever in India developed local partnerships to create Shakti, a direct-sales program for Lifebuoy soap in rural villages, which trained village women as entrepreneurs and product experts (Balu, 2001).

The question is how to achieve both the performance goals of organizations that manufacture and distribute BoP products, and the lifestyle goals of the consumers who buy them. We argue that the relational view of strategy provides a compelling response to this question. Table 1

summarizes how Prahalad's (2012) four criteria for BoP project success complement the four criteria of the relational view of strategy (Dyer and Singh, 1998).

Please insert Table 1 here

Below, we discuss the four points of the framework, and explain our theoretical arguments using evidence from published reports and cases on BoP projects.

Relation-specific assets for tailored and scalable solutions

The relational view of strategy would suggest that successful BoP projects bring together resources of partner organizations and create new, valuable assets that are specific to that partnership and that solve people's daily problems. This is because product solutions that are co-created and co-innovated by the manufacturer, the distributor, and/or the end-users will be better tailored, and therefore more appropriate, to meeting the needs of the customers at the BoP. One example is First Energy's Oorja Biomass Stove (Prahalad, 2012; Sharma, 2011; Shrimali et al., 2011), a direct response to the need for an affordable, low-smoke cooking stove. First Energy, a for-profit organization in India, and the Indian Institute of Science (IICS) collaborated to create the Oorja Biomass Stove. The Oorja Stove reduces unhealthy CO2 emissions, burns healthier biomass pellets made from agricultural waste, and cuts fuel cost by 40 percent. The partners created an effective solution to rural Indian women's cooking problems by conducting extensive joint-consumer research in rural villages and designing a product that was functional and appealing to see and use.

Scalability is also important to a BoP project's success. Discrete solutions to problems in rural villages or urban neighborhoods may be useful to people in those localities, but manufacturer

and distributors cannot achieve their business goals unless the solutions can be applied – and sold -- to larger number of people. First Energy emphasized scale when it co-created the Oorja Biomass Stove, building a product that could be mass produced and distributed through local NGOs. By 2009, it had sold 60,000 stoves (Karunakaran et al., 2011), and by 2010, 450,000 stoves had been sold in India (Shrimali et al., 2011).

Co-created products and co-developed distribution and education programs are examples of the relation-specific assets forthcoming from effective BoP projects. Solutions that emerge as a result of these partnerships among manufacturers, distributor networks, and end-users are more likely to be better tailored to BoP needs, and with diligence and focus, they can be scaled and adapted to more BoP customers in other locations. Based on this discussion, we suggest the following proposition:

P1: The more relation-specific assets combine to create tailored and scalable solutions, the more successful the BoP project.

Knowledge-sharing routines for user awareness, affordability, availability and accessibility

When alliance partners collaborate and share knowledge to achieve the alliance's goals, performance tends to improve (Dyer and Singh, 1998). Similarly, knowledge-sharing is very important to organizations that work together to serve the BoP market. When BoP partners share knowledge, they create mutually beneficial learning that can be applied to the project's design, production, and distribution. For example, organizations that manufacture BoP products can benefit when they work closely with local distribution partners, often non-profit NGOs, who know local communities and can serve the needs of the BoP end consumers well. NGOs are often involved in promotion and educational activities around social issues, and this can often be

translated to helping promote and educate people about new BoP products (Chesbrough et al., 2006; London and Hart, 2004). By sharing knowledge among BoP project partner organizations, manufacturers can build an appropriate sales and distribution strategy to increase user awareness, availability, accessibility and affordability (Prahalad, 2012).

Most people at the BoP live either in remote rural locations or in marginalized urban areas. To access and deliver products effectively, BoP product manufacturers can benefit from the expertise of local organizations that may be better able to create *awareness* and increase *availability* and *access* to BoP products. Celtel Nigeria, for example, created a unique sales and distribution model to sell mobile phones, which included affordable prepaid cards and mobile subscription plans, and used local associate distributors (AD) to do so (Anderson and Kupp, 2009a). AD's penetrated Nigerian roadways, markets, and towns with colorful, Celtel-branded kiosks, and traveled on motorbikes to reach customers. The AD's job was to make potential customers aware of the product, how easy and affordable it would be to use it, and to teach people how to use the prepaid cards (Anderson and Kupp, 2009b).

The products offered to BoP consumers must be *affordable,* as well as *accessible,* because BoP consumers have limited disposable income, which makes them discerning customers (Prahalad, 2012). Celtel Nigeria understood this, and created pre-paid, low-denomination phone cards so that rural and urban BoP customers could purchase small quantities of talk time, or low-cost mobile phones without long-term contracts (Anderson and Kupp, 2009a). Likewise, the Oorja Biomass Stove for family use was priced using the price minus profit equals cost model, since

developers had discovered in their local research that the price (about US $24) had to be what end-users were willing to pay (Prahalad, 2012).

BoP project partners that create routines to share knowledge around key product activities can better serve BoP customer needs. Evidence suggests that the most successful BoP products are developed, sold, and distributed after the partners invest significant effort to get and share knowledge about the local market. If executed appropriately, these efforts increase customers' awareness, availability, access, and ability to afford the product. Thus, we propose the following proposition:

P2: The more that knowledge-sharing routines are created to increase user awareness, availability, affordability, and accessibility, the more successful the BoP project.

Complementary resources and capabilities for changes to the value chain

The earliest research on the BoP supposed that large, multinational firms such as Kraft, Nestlé, and Kodak could benefit by growing the sales of their existing products – with few or no changes -- by distributing them to people at the BoP (Prahalad and Hammond, 2002). But more recent evidence suggests that BoP projects can provide better value to customers and achieve better sales to manufacturers if project partners make appropriate changes to the product's traditional value chain. Firms that manufacture products may learn from their BoP buyers that formulas can be simplified, packaging can be reduced, or distribution can be coupled with alternative channels, changing the traditional path of the product through the supply chain. The relational view of strategy argues that as a result of the relationships formed by manufacturers, distributors, and end-users, relation-specific capabilities may form that lead to reengineering a project's development, design, sourcing, production, distribution, sales, marketing, and after-sales service

activities. This occurs because partners realize that reconfiguring the value chain may reduce product cost, lower price, and increase value to BoP customers (Gollakota et al., 2010).

For example, the Aravind Eye Hospital in India reduced the cost of cataract surgery from hundreds of dollars to about $18 by shifting several critical value chain activities. They standardized many aspects of the operation, such as assigning trained, non-medical support staff to patient preparatory work, allowing surgeons to focus on cataract surgery only, and manufacturing the intraocular lenses in house (Rangan, 2009). These changes in the surgery's value chain reduced costs, added significant value, and reduced the price to customers, increasing accessibility to thousands of low-income patients.

When organizations involved in a BoP initiative work together in viable partnerships, they often develop relation-specific capabilities that inform their decisions about how the product may be produced, promoted, sold, and distributed. This discussion leads us to our third proposition:

P3: The more that complementary resources and capabilities combine to change the value chain, the more successful the BoP project.

Effective governance created by unique partnerships

The relational view of strategy highlights the role of partnerships in a BoP initiative. The resources that a firm controls are critical to the success of any of its projects (Barney, 1991), but some resources that firms need are neither firm specific nor owned by it (Amit and Schoemaker, 1993). So, firms often engage in arms-length relationships with partner organizations to get resources it does not have, particularly if the resources are not core (Williamson, 1975). Partnerships allow firms to obtain these resources and leverage them to complement their own

firm-specific resources. An important objective is to manage the partner relationship to protect the relation-specific resources created by the partnership by designing governance mechanisms that control transaction costs (Dyer and Singh, 1998).

Firms targeting the BoP market may have the technical and financial resources to design and manufacture good products, yet they may lack local knowledge, information, and experience to design appropriate marketing, sales, and distribution systems that give them access to BoP customers (Anderson et al. 2010; Gradl et al., 2010; Rivera-Santos and Rufin, 2010). But local NGO partners often have knowledge about local customs and practices, consumer behavior, competing products, and insight about community leadership that can increase customers' access to and awareness about new products (Brugmann and Prahalad, 2007; Chesbrough et al., 2006; London and Hart, 2004; Rashid and Rahman, 2009). Governing the partnership may involve formal and informal safeguards, based on financial, trust, and reputational incentives (Dyer and Singh, 1998).

Establishing effective governance among partners at the beginning, even before the product is designed, may encourage creative product concepts that are a better fit with the needs of end-users (Brugmann and Prahalad, 2007). The British company BP first developed the Oorja Biomass Stove, selling it later to First Energy (Shrimali et al., 2011). They effectively collaborated with the designers at the Indian Institute of Science (IICS) to design a stove suited to rural household BoP cooks based on local consumer research. There were a few missteps, but the partnership between First Energy and IICS led to an Oorja stove that was functional, manufactured and assembled in India, and well-liked by rural women (Karunakaran et al., 2011).

Successful BoP projects are highly dependent upon identifying good partners. Then, partners must conduct mutual due diligence, build trust among themselves, and design effective project governance mechanisms that keep transaction costs low and create great products from design to distribution (Seelos and Mair, 2007). Based on this discussion, we offer a fourth proposition:

P4: The more that effective governance is a product of the partnerships, the more successful the BoP project.

Methodology

Based on these four propositions, we developed a relational theory of BoP project competitive advantage by identifying "cross-case patterns" found in published BoP literature (Eisenhardt, 1989, p. 540). With these patterns, we created the framework for assessing project success (Figure 1).

Insert Figure 1 here

We operationalized the framework by analyzing two BoP projects sponsored by two organizations in Michigan, United States: Aqua Clara International and Triple Quest. Each organization provides water filtration technology to families in low-income communities in South America and Africa. Based on inductive case theory (Eisenhardt, 1989), we collected and analyzed data from these two cases to investigate the relation-specific networks, resources, and capabilities found in each project.

Data Collection and Analysis

We conducted three in-depth interviews with two key principals of the two Michigan organizations during 2011 and 2012. Both individuals hold leadership roles in their organizations, they are involved operationally with the BoP projects, and they have decision-making authority. Figure 2 summarizes basic information about the two organizations.

Insert Figure 2 here

We used structured questionnaires with open-ended questions to capture data and to crosscheck for consistency. We focused on data on assets, resources, capabilities, partners/networks, production, operations, sales, installation, service, and user/customer feedback in lines with our framework. We summarized and evaluated our primary data research findings, and asked more questions through e-mails and phone calls. We added information from secondary research from trade journals, newspapers, and websites about the companies and their partners.

Case Results

Both projects attempt to improve drinking water quality in low-income communities in Africa and South America using water filtration devices. Both organizations produce and sell a water purification system using biologically-treated sand filtration technology. Following is a discussion of both projects based on our four propositions.

Aqua Clara International Water Purifier Project: Kenya

Aqua Clara International (ACI) developed the Aqua Clara International Water Purifier (ACIWP) to offer clean water solutions to people in developing countries using a franchise model. The ACIWP is a household filter that uses biosand filtering technology and a disinfecting compound. It is made of a PVC (plastic) container the size of a large household bucket that holds the sand

and gravel, and a standard PVC plumbing tube for dispensing up to 40 liters of purified water daily (Aqua Clara, 2012). Figure 3 illustrates. This discussion focuses on ACI's work with the ACIWP in Kenya, where PVC containers are manufactured, and where final assembly takes place (Aqua Clara, 2012).

Insert Figure 3 here

Relation-specific assets for tailored and scalable solutions

The ACIWP uses a simple water filtration technology that, while not specifically re-tailored to the Kenyan BoP population, tests effective in many developing countries. Its generic design is appropriate to Kenyan community users, and components can be sourced, manufactured, and assembled locally in Kenya (and in most other countries). The ACIWP is scalable in part because ACI has adopted a franchise-type business model. ACI recruits community development entrepreneurs (CDEs) who own, operate, and sell the product to about 200-500 households. Local public schools, led by schoolteachers, provide a central place for CDEs to demonstrate and store product. Community health promoters (CHPs) provide post-sale education on how families are using the filters, and they collect data that is returned to the CDEs and ACI. This local control allows ACI to focus on technology transfer and training, and increases product sales in Kenya with limited additional investment. CDEs and CHPs design sales and training techniques to each local community. These individuals gain influence and have the access and the networking skills to reach potential customers in their local communities. By 2012, ACI Kenya's franchisees distributed over 2,300 water filters through its network of 48 CDEs and 32 CHPs (President, personal communication, July 25, 2012).

In sum, ACI, public school partners, local CDEs, and local CHPs contribute significant tangible and intangible assets that create tailored and scalable solutions to local communities' water sanitation needs. Local schools provide warehousing and meeting space, and give legitimacy to the project, when combined with the entrepreneurial skills of the CDEs and the community health education skills of CHPs. ACI partners can then distribute the standardized ACIWP filter in a way that is adaptive to local situations.

Knowledge-sharing routines for user awareness, affordability, availability, and accessibility

The ACIWP is affordable to BoP consumers who earn less than $2 per day. Its price is based on a cost-plus model, with average COGS of US$9 and an average price of $12, which includes a US$3 commission (CAWST, 2011). The ACIWP uses patent pending technology which ACI gives away free of charge to those interested in forging a sustainable solution to water issues in their communities and who participate in required training workshops. ACI estimates that the cost of the filter is US$0.001 per liter (Aqua Clara, 2012).

CDE franchisees create user awareness and access by working with CHPs to design marketing campaigns to reach rural families. ACI Kenya delivers PVC buckets, pipes, valves, and sand media from suppliers to the schools. The ACIWP filters are stored, assembled, and distributed at the local public school, which is ACI's principal partner. An official school launch event organized by the CDEs and CHPs draws attention, creates interest in the product, and reinforces the product's credibility. The CDEs demonstrate product and use popular entertainment to attract people to the event and to inform consumers about the benefits of the ACIWP to families. At the

school, CDEs assemble the ACIWP, train users how to use the filter, and continue to promote the product by placing a complementary filter at the school for student use (CAWST, 2011).

CHPs visit customers within 60 days of the filter installation, to trouble-shoot the product, provide more education on clean water, hygiene, sanitation, and maintenance, and to survey customer satisfaction (CAWST, 2011). Their job is to ensure that the filters are properly used to last the ten-year product life.

ACI's sourcing skills combine with the public school partners' and local CDEs' local knowledge about the community to assure that the customers are aware of the product, that it is available, and accessible. Further, ACI has honed the design and sourcing of the ACIWP. ACI has fine-tuned its franchise model such that the cost of the product is low and the price to consumers is affordable (President, personal communication, February 13, 2012).

Complementary resources and capabilities for changes to the value chain

ACI's R&D on filter technology occurs at the Michigan headquarters. The simple filter design maximizes the use of local materials for the best clean water solutions. No electricity is needed and there are no moving parts. Sand for the ACIWP is sourced, cleaned, and purified in Kenya, and the plastic containers can be any type that are locally manufactured and available in Kenya (CAWST, 2011). ACI supplies locally-sourced tools and materials at cost to help CDEs build their first 25-50 filters.

CDEs must work hard on user awareness and education, because customers are not easily convinced of the benefits of clean water (Hammond et al., 2007). A key segment of the value chain is providing social marketing and education to users, and educating trainers, CDEs, and

CHPs. ACI uses selection criteria that determine which public schools can best participate, and which individuals are the best candidates for CDEs and CHPs. After school selection, the school official and ACI choose potential CDEs and CHPs. ACI conducts five-day training workshops for them, then follows-up with monthly meetings. The workshops teach general product knowledge, assembly, maintenance, and health education on clean water, hygiene and sanitation (CAWST, 2011).

Local CDEs earn a commission for each product they sell, generating local economic activity that builds project sustainability. CHPs provide after-sale service, and receive stipends and a complementary ACIWP in return. They report to ACI and CDEs on product usage and customer satisfaction. Repeat visits reinforce brand identity in the community, which may result in more and repeat purchases (CAWST, 2011).

ACI has reconfigured the value chain of the ACIWP such that many primary and secondary activities are decentralized to Kenya and local communities. By identifying complementary resources in country, ACI sources product components locally and assembly occurs on location, keeping costs low. Local CDEs are effective franchisees who understand their customers and are able to design sales and promotion activities to reach them. Education and support from CHPs keep customers trained on proper usage of the filters, and helps encourage future sales (Aqua Clara, 2012).

Effective governance created by unique partnerships

To create awareness of the ACIWP, ACI established strategic partnerships with local organizations. In Kenya, ACI's key partners are local public schools, which create legitimacy

and credibility for the ACIWP product. Local public schools serve a central function in communities in emerging market countries. Schoolteachers tend to be highly respected, and they are opinion leaders in the villages they serve. ACI builds the relationship with public schools by offering schools incentives to participate, such as free water filter installations and free continuing education about clean water, sanitation and hygiene provided by CHPs (President, personal communication, February 13, 2012).

If a public school wants to participate, an ACI staffer based in Kenya visits the school to explain the program and assess its feasibility. After an application process, ACI performs due diligence and decides to approve the school as a partner (CAWST, 2011). Together, ACI and public school staff select CDE and CHP candidates, and ACI conducts interviews. ACI was careful to design incentives such as cash commissions and travel stipends to motivate their franchisee partners, the CDEs and CHPs.

ACI has worked hard to develop governance systems and relationships with its public school, franchisee, and NGO partners. It has done its due diligence in Kenya to determine what decision-making authority should be given to its partners and what ACI should retain. Partners report regularly to ACI on product activities, keeping ACI informed about product sales, usage, problems, successes, and customer feedback. These carefully nurtured local partnerships provide a key link between the Michigan-based ACI and the BoP consumers ACI serves (Aqua Clara, 2012).

HydrAid Biosand Water Filter: Honduras

Triple Quest is a business venture between a Michigan-based manufacturing company and a private investment fund. One of Triple Quest's projects is to manufacture and distribute the HydrAid Biosand Water Filter to BoP consumers in Central and South America, Africa, and Asia. Triple Quest purchased the intellectual property rights of the filter technology and the tooling to create the HydrAid Filter. The filter consists of a plastic container about the size of a household garbage bin that holds several layers of biologically treated sand that removes water contaminants, and a PVC tube and valve that channels purified water into a receptacle (Triple Quest, 2012). Figure 4 illustrates.

Insert Figure 4 here

Relation-specific assets for tailored and scalable solutions

The HydrAid Biosand Water Filter uses a simple water filtering technology that is appropriate for BoP customers, and can serve a family of ten's drinking and washing needs. Triple Quest manufactures the 30-inch tall plastic containers in its Michigan plant, ships them to the Honduran warehouse, and has the capacity to make 250,000 units per year. Sand and gravel was initially sourced from the US but is now sourced locally in Honduras, reducing shipping and handling costs. Scalability may be achieved if a full container of filters is shipped, because ocean freight costs are high and volume shipments are necessary to lower per unit price to consumers. Once landed in Honduras, filter kits are stored in a Triple Quest-owned warehouse in Tegucigalpa, the capital city. Delivering filter kits to Honduran rural areas is costly and difficult, because roads in provincial Honduras anywhere other than the Pan-American Highway are poor and inefficient.

Several Honduran NGOs are Triple Quest's principal partners. They operate distribution centers where local distributors can purchase filters to sell, install, and distribute. These NGOs hire promoters who can work effectively with BoP customers. The target communities of BoP customers are Triple Quest's end-user partners. These are rural and urban church communities and villages, usually located in remote areas of the country. Many of these local people are highly motivated and organized to collectively solve problems such as access to safe water (Triple Quest, 2012).

Triple Quest employs one Honduran representative who manages the local warehouse, sources sand, and organizes direct sales. The sales and distribution model in Honduras is dispersed and fragmented. While the regional manager works with the local NGOs and churches interested in selling and distributing filters to rural customers, high local transportation costs and logistics issues have hindered the implementation of a robust sales model.

Triple Quest's HydrAid Biosand Water Filter is a technologically robust product designed to fulfill the clean water needs of BoP consumers. The Honduran representative is critical to the local operation, because he leverages relationships with NGOs to reach BoP customers in remote communities. Increasing the scale of the project in Honduras could be a challenge since US manufacturing, high transportation costs, and a fragmented project coverage in country make it difficult to operate efficiently (Business Unit Leader, personal communication, February 21, 2012).

Knowledge-sharing routines for user awareness, affordability, availability, and accessibility

Triple Quest conducts market research at its Michigan headquarters and in Honduras. This is shared with the Honduran manager, who seeks new markets and individuals to train as water filter installers and distributors. Initially, Triple Quest tried selling the filters in retail outlets, but when filters were displayed on hardware store shelves, walk-in customers did not understand the product's value. The filter had little esthetic appeal, and potential customers saw high transportation and storage costs in its relatively large size. Without product demonstrations and consumer education, it was difficult to sell a water filter off the shelf to BoP customers.

Triple Quest uses a cost-plus sales model, with COGS at about US$100 per filter. If sand is sourced locally, and if subsidized ocean freight from the US Navy is available, the retail price of the filter is US$34 (Business Unit Leader, personal communication, February 21, 2012). Families earning between $2-$5 per day may find it difficult to pay this price without access to financing or a creative payment plan.

Complementary resources and capabilities for changes to the value chain

Triple Quest conducts technological research and development, business development, and manufacturing at the Michigan location. Initially, all product components, including sand, were sourced from the U.S. Triple Quest quickly modified its sourcing strategy to procure sand in Honduras and its other target countries. This significantly reduced the landed cost of the filter. Triple Quest benefits from an arrangement between Safe Water Team (SWT), a Michigan NGO, and its arrangement with the U.S. Navy that provides, space permitting, free ocean freight and duty-free entry of the plastic containers and accessories from the U.S. ocean port to Honduras.

Triple Quest's regional manager works with a Honduran NGO that provides product demonstrations and training to some small local groups and churches. But the potential reach of these organizations is limited. The NGO has trained several people to sell and install filters, and Triple Quest's regional manager provides some after-sale service. Although these key value chain activities are locally designed, controlled, and implemented, product sales in Honduras are complicated, especially when the manager attempts to reach BoP customers directly. The challenge is creating awareness of the product, achieving an affordable price point, and securing availability and accessibility through distribution. Triple Quest's initial idea to develop a micro-entrepreneur program in Honduras did not work as planned. It lacked a connection with, and the commitment of, an NGO with operations of significant scale in Honduras, and with experience identifying and training local people for an entrepreneurial venture. Nevertheless, community, church, and school leaders have influence and persuasive ability with potential end-users in these small markets. They use word of mouth to inform neighbors about hygiene and water safety, they provide venues for product demonstrations, and they coordinate their work with the NGO and Triple Quest (Business Unit Leader, personal communication, February 21, 2012).

Effective governance created by unique partnerships

Triple Quest's Honduran partnerships are with the local NGO and the U.S. Navy. The NGO gave Triple Quest consumer research during the R&D phase, connected Triple Quest with the U.S. Navy, and brokered a deal by which the Honduran government will buy $2.3 million in filters from Triple Quest that could benefit 40,000 people. It agreed to raise another $2.3 million to match the Honduran Government contribution. Other partners include an association of

Honduran coffee growers and a church that will use its radio and television programs to provide public relations and education for the filters (Vande Bunte, 2011). The local NGO helped fund and establish the Triple Quest warehouse, and found sources of local sand and gravel. The NGO's current role is to sell and install HydrAid biosand filters in Honduran communities (Triple Quest, 2012).

The partnership with the U.S. Navy, which gives Triple Quest free ocean freight on a "space-available" basis and duty-free entry of product, provides valuable yet unreliable resources. The free of charge nature of the service distorts the true cost of goods, and it is neither reliable nor permanent. All true transportation costs and import duties should be considered for the HydrAid water filter project to be sustainable (Business Unit Leader, personal communication, February 21, 2012).

The partnership between Triple Quest's Honduran regional manager and the local NGO is important. Yet both organizations in Honduras have limited ability to expand product development beyond several local communities. Governance mechanisms between the two entities appear to be not well established, and Triple Quest is exploring relationships with other potential partners in Honduras that might offer a more robust operating agreement (Sales Manager, personal communication, July 2, 2012).

Main Findings

The relational approach suggests that BoP projects will more successfully generate sustainable returns and alleviate poverty if projects involve partners who create unique, relation-specific capabilities, effectively govern and manage the relationships among them, and include BoP

customers as co-producers, suppliers, and agents (Kubzansky et al., 2011). The two cases provide insight to the theoretical discussions that support our propositions. Both organizations use similar, non-proprietary water filtering technology for product design and concept, and have a similar BoP customer demographic. However, the business models of the two organizations differ significantly, as do their approaches to materials sourcing and manufacturing, promotion, training, sales, channel management, distribution, and after-sales service. Below we discuss how each organization uses their resources and capabilities differently and creates different relational resources, resulting in significantly different price points, different sales results, and variance in their potential success.

Our first proposition suggests that the more relation-specific assets combine to create tailored and scalable solutions, the more successful a BoP project will be. ACI's ACIWP unites the assets of public school partners and local entrepreneurs with their own to create a water purification system that responds to local communities' needs and practices, and is increasingly scalable as more public schools join. Triple Quest's HydrAid Filter uses a water purification technology that is standardized and appropriate for many regions and countries. Yet the product itself is quite large, and its business model may lack other local assets needed to tailor and customize it to assure easy transport and use in remote communities, especially where people live in small homes. Given this information, we argue that ACI's ACIWP is likely to be more successful than Triple Quest's HydrAid Filter project.

Proposition two suggests that the more that knowledge-sharing routines are created to increase user awareness, availability, affordability, and accessibility, the more successful a BoP project will be. ACI's public school partners actively contribute knowledge about the local communities

and their members, which makes it easy for ACI to select potential project entrepreneurs and promoters. Local CDEs and CHPs contribute significant local knowledge and access that lead to better relationships with customers and increased sales. Triple Quest has developed partnerships with a few Honduran NGOs and churches working in local communities, but product availability and accessibility is very fragmented. These NGOs may be too local, given that they lack regional or national coverage. These NGOs are less involved as co-producers, suppliers, and agents (Kubzansky et al., 2011), limiting people's access to and the availability of the product. This suggests that at this time, ACI's water filtration project is likely to be more successful than Triple Quest's.

Proposition three argues that the more that complementary resources and capabilities combine to change the value chain, the more successful the BoP project may be. The ACI value chain has been reconfigured to local Kenyan conditions, and this makes all components of the water filter, its assembly, and the social marketing required to sell it, available and affordable to local people. Local COGS are low, which keeps product price low, sales volume high, and return on sales high. Triple Quest has similarly lowered product cost and price by moving a key value chain activity– sourcing of sand and gravel – to the target country. But continued manufacture of the plastic container in the U.S. keeps production and international transportation costs high, even with transportation subsidies, resulting in a product price that is prohibitive to most BoP consumers. This evidence suggests that at this time ACI's water filter project is likely to be more successful than Triple Quest's.

The fourth proposition suggests that the more that effective governance is created as a result of partnerships, the more successful a BoP project will be. ACI's relationships with its Kenyan

partners are well defined and governed by mechanisms that include reporting, commissions, stipends, and other forms of accountability. These aspects suggest that ACI's partnerships in Kenya have created relation-specific capabilities that drive sustainable success of the ACIWP filter project. Triple Quest and its partners certainly provide valuable resources, but few relation-specific capabilities have resulted from the combination of resources from the individual organizations. Triple Quest has the potential to develop new organizational partnerships that could bring other resources to the table. They could also make additional changes to the value chain, and find ways to involve BoP customers as co-producers, suppliers, or agents. If they achieve this, Triple Quest's HydrAid Biosand Filter project might create the relation-specific capabilities they need to make the project more sustainable in Honduras. At this time, ACI's water filtration project is likely to be more successful than Triple Quest's. Tables 2 and 3 summarize these findings.

Insert Tables 2 and 3 here

Discussion and conclusion

We argue that the relational view of strategy is particularly relevant to the BoP context. While it may be applied to the mainstream strategy of a firm, evidence from our analyses suggests that the relational view is enacted rather uniquely in the BoP context, and may be transferable to other BoP projects. Relationships matter significantly to the success of BoP projects, particularly in situations where mutual trust, reciprocity between partners, and underlying personal relationships among members involved are important (Capaldo, 2007). Many BoP projects occur in emerging market countries, where trust among partners often substitutes contract law

and market infrastructure in reducing transaction costs and uncertainty (Hitt et al., 2004). Firms may understand the need to develop trust in these situations, but find that conducting due diligence on local partners in emerging markets is more difficult than in developed countries. For example, a local NGO may be a potential BoP project partner because of its historical presence in a target market. But its assets, performance metrics, and track record may be hard to verify because it may operate using informal, rather than formal and documented, practices (Dyer and Singh, 1998). Consistent and repeated interaction among potential partners can build and nurture trust, which encourages relation-specific assets to develop, innovation to occur, and successful projects to result (Capaldo, 2007).

Second, many of the relation-specific innovations that result from combining partners' assets emerge *because* the projects are targeted to the BoP market. Innovative changes to the value chain are often critical because the BoP market demands them to reduce cost and price, and increase accessibility. New value chain configurations might not be as necessary in non-BoP markets. Aravind Eye Care System in India had to work with suppliers and customers to significantly reduce the cost and price of cataract surgery if their services were to reach thousands of price-sensitive patients (Rangan, 2009). If customers had not been so price sensitive, such radical cost reduction might not have occurred.

Third, the *process* of establishing strong formal and informal *governance mechanisms* are critical for increasing trust and relational ties among BoP project partners. As unwieldy and as protracted as negotiations might be – it is often necessary to hold many, many meetings with local partners to decide the best mechanisms for reporting, accountability, and rewards – project outcomes should be more satisfactory and sustainable once partners understand and agree to the

rules of the game. Capaldo (2007) calls this "strong ties," and suggests that among trusted partners in a project venture, the desire to protect reputations discourages partners from behaving opportunistically. Many international development projects have failed and disappointed international agencies providing financing, local NGOs providing technical support, and target communities benefitting from the intervention because governance was managed poorly. Focus and patience on creating strong ties through good governance may avoid such failure and disappointment.

Fourth, the results of our relational view study of BoP projects in Honduras and Kenya have implications for BoP theory and practice in South Asia. Two interesting projects, the Oorja Biomass stove developed by the First Energy Company in India, and the PuR water purifier sachets developed by Procter & Gamble (P&G) in Pakistan, began on similar paths. Each for-profit company, First Energy and P&G, invested significant time, money, and other resources to develop appropriate BoP products. Each conducted pilot consumer studies with local BoP community members in India and Pakistan. A relational view analysis would suggest that after the initial pilot project phases, the Oorja project outperformed the PuR project because the former used a business model that built sustainable relation-specific capabilities, created effective governance mechanisms, and employed BoP consumers as agents. The PuR water purifier sachet project provided an affordable, customized product (a small packet of disinfectant powder that purifies contaminated water to clear, clean, good tasting water), via a large-scale product launch across Pakistan in 2001-04 (Christensen and Thomas, 2008). But it may have failed to establish mutually beneficial local partnerships with BoP users as supplier/agents, as it was not able to build relation-specific capabilities for the long term. P&G's product launch

included radio, TV, and print ads, and they trained 1,400 education workers who visited 40 cities to promote and educate consumers about the importance of safe water (Christensen and Thomas, 2008). Initially, there was high market penetration of PuR in Pakistan. Yet, after a couple of months, there was just a 5 percent repeat purchase rate (Christensen and Thomas, 2008). A relational viewpoint would argue that P&G's one-time promotion and distribution efforts were not sufficient to create sustainable success. Had P&G better exploited its partnerships, created strong mutual governance mechanisms, and involved BoP consumers as agents, its PuR strategy might have been more successful. By late 2004, P&G abandoned the commercial strategy and moved the PuR project into its not-for-profit CSR segment (London and Hart, 2011).

Our study strengthens the link between knowledge-sharing among partners, governance of the partnerships, and project performance, much in line with prior research on alliances among for-profit firms (e.g., Dyer, 1996; Lavie, 2006; Mesquita et al., 2008). The BoP market provides unique challenges to businesses, and our findings illustrate how important it is for firms to engage customers as partners who co-produce, supply, and act as agents to projects (Kubzansky et al., 2011). But lessons learned are not limited to BoP markets. The relational view also confirms the tacit importance of governing all partner relationships based on competence and trust as firms launch other projects.

The relational view of strategy may certainly extend to a firm's mainstream strategy. Relational capabilities that emerge from partnerships or networks can create sources of competitive advantage in many contexts (Capaldo, 2007). Perhaps more importantly, *how* a firm structures all its relationships with suppliers, distributors, and customers can be a valuable and inimitable resource (Gulati et al., 2000). While firms must be internally committed to innovate to be

successful, we argue how important it is for firms, whether their main focus is on BoP markets or not, to regularly connect, partner, and commit to relationships with organizations outside their boundaries to create distinctive competencies.

We hope to contribute to managerial practice by offering a parsimonious framework that clarifies the roles of partners involved in a BoP project, and tries to explain what may occur when partners bring their resources to the table. For example, when partners share resources and knowledge, one goal is to achieve user affordability and accessibility. The relational framework highlights the idea that firms must meet shareholders' *and* community stakeholders' goals (Kale and Singh, 2009). It may help all partners understand the importance of formal and/or informal agreements that govern their relationships, to complement and build trust among them.

While our research uniquely connects two perspectives– the relational view of strategy and the BoP – there are limitations. One constraint was our inability to personally visit the two project sites in Kenya and Honduras. We relied on testimony from interviews with staff and secondary research. A second limitation is the small number of cases analyzed in this exploratory study. Applying the framework to more case studies would further the conversation about how the relational view of BoP strategy and its four constructs might be better operationalized. A third constraint is our use of live organizational cases to study the relational view of strategy. We follow the advice of Eisenhardt (1989), and given the current state of research on both the relational view and the BoP, we hope she would support our method.

Future research might examine ways to measure the four success criteria of the relational view model. For example, how might we measure relation-specific assets that create tailored and

scalable solutions? How might we measure effective governance? What metrics might detect changes in the value chain that reduce product cost and increase participation of local suppliers? Recall the unique design of the Oorja Biomass Stove that emerged only after intense local beta testing with village women in India. Project partners worked together to understand the village's power structure, the sources of local knowledge and history, and how villagers made decisions in their communities to create a sales and distribution system that was tailored to the local situation. Partners devised the idea to train village entrepreneurs to be product distributors, and they creatively provided credit and easy payment terms that increased sales (Kolk et al., 2010). Finding ways to objectively measure such achievements would build a stronger case for project success.

Our intent is to advance theoretical ideas that provide a strategic perspective to projects designed for the BoP, and add to work begun by other scholars (Gollakota et al., 2010; Gradl et al., 2010; Rivera-Santos and Rufin, 2010; Seelos and Mair, 2007). Using a relational view of strategy to examine BoP projects, we hope to continue working with others to help explain why some BoP projects successfully achieve sustainable competitive advantage.

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