Bridging Access to Electricity Through BOP Markets: Between Economic Equations and Political Configurations

Céline Cholez
PACTE Politique—Organisations/Grenoble-INP, Grenoble, France

Pascale Trompette
PACTE Politique—Organisations/CNRS, Grenoble, France

Dominique Vinck
Institute for Social Sciences, University of Lausanne, Lausanne, Switzerland

Thomas Reverdy
PACTE Politique—Organisations/Grenoble-INP, Grenoble, France

Abstract

The development of markets for the poorest populations (Base of the Pyramid [BOP]) has become important for multinational companies (MNCs), nongovernmental organizations, and public policies. Assuming that there is demand for very low price consumer products and that the main problem is one of access to those products, the challenge for MNCs is to reconfigure the whole of the corporate process accordingly. The article follows BOP theory and companies’ actual innovation. It looks at the definitions of the BOP market, the representation of BOP consumers, and local heterogeneous configurations of actors. Based on fieldwork with an MNC (specializing in electrical equipment) investigating a BOP business, it investigates the work undertaken by managers to build this market innovation. It explores the paradoxical frontiers of consumption and aid to the poorest populations and feeds the reflection of BOP policies by opening it up toward a diversity of alternatives and possible configurations.

KEY WORDS: BOP market, multinational company, electrification, innovation, consumer representation

Introduction

Associated with the corporate social responsibility (CSR) approaches, the development of markets for the poorest populations, qualified as “Base of the Pyramid” (BOP), has become increasingly important for multinationals, international institutions, and nongovernmental organizations (NGOs) over recent years. The history of “BOP market theory” begins both with the statement of development policies failure (Booth, 2003), the promotion of business entrepreneurship as a way of economic empowerment, and the observed saturation of Western markets. Regarding public policies (structural adjustment, use of aid to address development and poverty), it was pointed out that there is a lack of effective organizations to implement the Poverty Reduction Strategy (Mamman & Rees, 2008). The capacity of most developing countries’ organizations seems to be inadequate regarding the policies on poverty. Among others, market institutions from developing countries are said to be underdeveloped to absorb the opportunities offered by structural adjustment policies (UNCTAD, 2002).

From the corporate point of view, BOP markets represent a major challenge: accessing four billion potential consumers whose daily incomes do not exceed $2 and helping them out of poverty by laying the foundations for the development of Third World countries. Emerging literature on the subject (Aggeri & Acquier, 2008) converges on a radical innovation diagnostic for multinationals: According to Martinet and Payaud (2009), BOP markets imply new price/performance ratios, new forms of production and distribution, redistribution of competences of the various actors in the value chain, and so on. Many firms consider BOP markets too difficult to crack, whereas others struggle to realize the markets’ economic potential (Kacou, 2011). Assuming that there is a need for very low price consumer products and that the main problem is one of access to those products, the challenge is to reconfigure the whole of the process to reduce prices, penetrate the most distant zones, and possibly facilitate the act of purchase with leasing or credit systems. “BOP theory,” developed by leaders of this movement within multinationals and networks of experts, explicitly herald the “moral” influence of this innovation strategy (Fourcade & Healy, 2007): It is one of addressing the poorest people as potential consumers by offering them suitable products but also by supporting the development of virtuous circuits between consumption and production. This political vision implicitly includes the hypothesis that firms could succeed where NGOs and international political institutions have failed. Basically, it updates an old conception of the “civilizing” market as an effective response to poverty. In this field of literature, strategic management theories produced the first models to consider strategic innovation at the “BOP” (Anderson & Markides, 2007). The literature has moved on pace over recent years, producing a framework to appraise “BOP” but also, and more particularly, access routes and opportunity channels for multinationals as they move into these uncertain markets. It has also opened up controversies around different conceptions of hybrid forms between market and development policies, and among private firms, NGOs, and local and national institutional actors.

A key question regarding these BOP market strategies concerns the definition of the BOP people themselves. Depending on the definition, the actors involved, their organization, and the alliances they locally build would change radically. This article seeks to examine in the first section that set of definitions of the BOP market theory through the way it describes the representation of the BOP consumer, the economic networks, and the inherent value chains. It is based on an empirical research project and follows a French MNC investigating a BOP business. It investigates the technical and cultural work undertaken by managers and their partners to build the cognitive, normative, and material framework of this “market innovation.” Thanks to these cases, we study in the second section the way in which the hypotheses worked out by the innovation team are permanently destabilized when they come into contact with real markets and local actors (Callon, 2007). The discovery of existing consumption practices, partnership- and entrepreneurial-based dynamics, and the politics of local and national institutions raises questions not only concerning the feasibility of this BOP strategy but also its bottom-line objectives.
Methodology

This article is based on collaborative research carried out by a group of engineers responsible for innovation within a global energy company specializing in electrical equipment that we will refer to as “E-Power,” and a team of sociologists and anthropologists working on innovation sociology, organization, and markets. Accordingly, since January 2009, our sociological research team has been working with E-Power’s engineers in the analysis of experiments implemented in several rural villages in Africa and Asia.

The projects presented here are organizationally at the crossroads of two of the firm’s functions: The “innovation through usage” function that comprises 15 or so engineers responsible for different markets, and the transversal sustainable development function, supervised by general management. Their CSR approach began in 1998, with the creation of a foundation, and then a sustainable development department in 2002. The BOP program was launched in 2008. It comprises three activities: electrification solutions, training in electricity, and support to local entrepreneurs. The initial objectives of the program were highly ambitious, giving access to electricity to one million BOP households in 3 years, training 10,000 young BOPs, and supporting 500 entrepreneurs in the local development of the energy sector.

In 2009, two first experiments were carried out by the MNC in Indonesia (case no. 2) and Madagascar (case no. 1) to test the technical feasibility of a centralized micronetwork solution based on a combination of photovoltaic solar panels and accumulators, with their own specific regulation mechanisms. The experiments concerned only rural electrification systems in villages that are fairly remote from existing electrical distribution networks. These experiments have been analyzed ex-post by the authors through the MNC documents and interviews. This first level of investigation has been combined with fieldwork in the two Malagasy villages in which the experiment took place (case no. 2) and in a third village where the MNC planned a new experiment in partnership with a local entrepreneur. The ethnographic material, produced both from the work done jointly with the company’s engineers and during the field survey on the investigated sites, includes:

- internal discussions within the MNC’s staff, observed or recorded during BOP market project meetings (two meetings per month over 10 months and four steering committee meetings with the staff or the management team);
- a set of e-mails exchanged between the actors involved in the experiments (from different departments of the company, its local subsidiaries, suppliers, and NGO members) from the beginning of the project through to delivery of the equipment;
- a set of documents produced or collected by the engineering team at the beginning of the project (notes and transcripts of interviews with institutional representatives, potential economic partners, NGO representatives, potential suppliers, and local operators);
- recordings and transcripts of interviews and a series of videos and photos taken during a survey of rural villages. This body of research comprises, in
particular, 52 interviews with local energy operators, political actors, and representatives of public institutions (politicians, religious, and traditional leaders, and a representative from the local national electrification agency), potential customers from the local business community, and local project partners (NGO members, engineers from the local subsidiary responsible for the BOP projects, development personnel from other multinationals involved in the experiment). The survey also includes two filmed studies of local actors’ diagnostics of technical and organizational dysfunctions in the devolved electrification systems. All these interviews and observations were recorded, translated, and transcribed before being coded using an analysis grid compiled jointly with qualitative data processing software (Nvivo; QSR International, Southport, UK).

The indicators used for the analysis are: (i) the network of institutional and political actors attached to the electrification project; (ii) the energy as a consumer good in the rural economies; and (iii) the sociotechnical interdependencies and organizational and operating system.

**Does BOP Comply with the Representation of the Consumer?**

In this section, we examine the representation of the BOP in the literature and in the follow-up of the technical and cultural work undertaken by managers investigating a BOP business. It discusses the dissonant representations. It discusses to what extent these typical ideal representations fail to fit adequately to the local economic practices.

**Consumer versus Producer**

In his 2004 publication, “Fortune at the Bottom of The Pyramid: Eradicating Poverty Through Profits,” Prahalad seeks to transform the image that Westerners, and particularly the business world, have of poor people in developing countries. As Professor of Strategy at the University of Michigan, he intended to demonstrate to global firms that it would be in their interests to see the four billion² people living on less than $2 a day as real consumers whose main problem is access to products, on account of cost, deficient supply chains, and the absence of real market places. Criticized by a number of development actors who see a risk of impoverishment in microcredit, this thesis was also criticized by Karnani (2007), who opposes two visions of BOP: the consumer BOP proposed by Prahalad and the producer BOP Karnani sustains as the relevant category for the development approaches. It is not by selling products to the poor but by buying products from them that their plight will be improved. Major poverty and with it the lack of education and sanitary safety does indeed lead to overconsumption with futile goods being preferred over essential ones: “We should not romanticize the poor as ‘value-conscious consumers.’ The problem is that the poor often make choices that are not in their own self interest” (Karnani, 2007, p. 98). The only solution for him is to raise the incomes of the poorest people that can only be sustainable if it is spurred by a growing employment market.
Although at loggerheads, Karnani and Prahalad agree on a representation of BOP as a consumer who undoubtedly wishes to consume. “Case studies used to illustrate doing business at the BOP have demonstrated that the poor are ‘willing’ to consume (London & Hart, 2004; Prahalad, 2004). However, in contrast to developed markets where companies are concerned with the willingness of consumers to pay for products and services, the challenge in BOP markets is that customers are willing but often not able to pay” (Seelos & Mair, 2007, p. 50). This observation is common throughout BOP market literature consulted for this article: Potentially attracted by products, willing to buy, entrepreneurial and innovative, poor people’s problems often come down to money.

Forms of strategy and business implementation for these two approaches to the BOP market are, as a result, relatively different. By targeting the low-income consumer market marked by fluctuating income levels (variable daily revenues), the first vision suggests optimizing the key conditions of access and accessibility of products on the basis of a reformatting of the supply of goods and services (low cost, microquantities, prepayment) that may also require investment by the firm in infrastructures and distribution networks (Anderson & Markides, 2007). By seeking to support production capacities rather than final consumption, the second avenue explores the creation of value chains by integrating local producers and supporting BOPs’ access to entrepreneurial resources. As well as giving a reminder of the role of the state in the development of economic and social infrastructures, this approach of the development engages other types of partnerships—e.g., NGOs and local cooperatives—so as to identify the conditions under which business can be developed. Nevertheless, local and national political institutions are not explicitly considered. The poverty reduction strategy goes through market and nonprofit organization, not through local authorities. However, in any event, uncertainty is extremely high for firms, as the value creation process seems uncertain and uncontrolled, both in identifying market intermediaries and developing innovative uses.

The Firm’s BOP Strategy

This issue of BOP profile and the strategic uncertainties linked to it is at the heart of the electrification survey that was run for the research team project. The alliance of two BOP market visions—as new horizons for the mass consumer market or as new vectors of growth for emerging countries—is clearly one of the main equations that the E-Power project team was working with in preparing its BOP strategy. The intention is to bring energy to populations who have none. However, electricity is not like ordinary products whose real sense is embodied in the act of consumption. It is a resource used to meet other objectives such as training, health, safety, and economic production. Electricity is a particular good that lubricates the virtuous production–consumption circuit: “For low income people, energy is more than just a light at night, or a way to cook a meal. Access to energy provides a direct benefit in terms of poverty reduction and improved health” (HYSTRA, 2009). However, the question remains as to how the virtuous ball can start rolling. Impacting the generation of additional revenues for BOPs as “producers” is not a spontaneous process. This directly concerns the conditions under which a new and entrepreneurial activity emerges through BOPs. It is fairly unlikely, on the face of it, that
BOPs will become entrepreneurs just because they have electricity. E-Power’s research therefore studies uncertainties concerning the social and economic development that can be engaged through electrification.

**Dissonant Representations of BOPs**

The surveys carried out within three rural villages in Madagascar sought to question this BOP innovation strategy at two levels: the determinants of consumption practices and the status of the poor.

*Utility versus Revenue: What Are the Determinants of Consumption Practices?*—The first tests projections on BOP markets, in association with representations established by BOP visions, address the question of revenues as an essential factor in consumption practices. This premise is based on a “trough” definition of BOPs using conventional market economy consumer representation: A consumer uniformly assessed on the basis of an average budget (“from $2 to $5 a day”) who is seeking to maximize satisfaction of his needs (Von Schnitzler, 2008). In the case of BOPs, the consumer has an extremely limited budget but is confronted with needs that are just as unlimited as within capitalistic economies (“willing to consume”).

And yet, on more than one level, the peasants of the villages studied were exceptions to this social representation of a BOP as “restricted consumers.” First of all, the study of economic activities of households (re)discovers (Firth & Yamey, 2007) that monetary revenue is “peripheral” in a peasant economy whose leading orientation is self-sufficiency (rice and manioc, but also market gardens, home breeding, manufacture of charcoal). This includes nonmonetary forms of exchange and circulation, such as renting fields in exchange for half of the crops produced. The division between mercantile production and monetary revenues is based on several elements: a surplus of agricultural activity but also the multiple activities of the household that can variably combine craftwork (wood, cane, sewing, and so on sold in local urban markets), minor local commerce (cheap eateries, corner shops), intermittent salaried work, and so on. “Peripheral” does not necessarily mean that these revenues are “limited” but rather that they are organized “around” and “beyond” self-sufficiency; mercantile production fluctuates according to time spent on farming work and self-sufficiency needs in particular; it is generally therefore intermittent, short term, and volatile. “When the period of rice planting or harvesting is upon us,” says a young artisan couple (stool craftsmen), “we drop everything.”

As a result, the question of forms of articulation between self-sufficiency production and mercantile production becomes central in understanding the economies of households. For example, they are conscious that the “best-off” households are those that can subcontract some of this self-sufficiency production (rental of fields or boats with nets in exchange for part of the crop or fish harvest) and increase the proportion of mercantile production in various areas. On the contrary, for the poorer households—the majority of the population—the mercantile productive activity appears more often “driven” by limited or occasional monetary needs: Satisfying day-to-day expenditure, paying for school fees, organizing a family party, and so on are some of the obligations that “force” short-time production and sale in urban
markets according to rhythms and volumes that are indexed to payment levels and
deadlines. A peasant who makes wooden stools explains that under normal circum-
stances, if he has not gotten enough money, he will make between 10 and 15 stools
and sell them straight away. On the other hand, when he has enough to eat and
therefore peace of mind, he makes a hundred or so stools without stopping, and will
sell them at a later date. In other words, the circumstances and conditions that
organize this circulation between self-sufficiency and mercantile economy are essen-
tial to understanding the economies of households, both in the short term (mon-
etary need) and in the long term (economic segmentation of households).

If we look then at the “needs” behind the need for monetary income and
mercantile productivity, several observations serve to supplement previous analy-
ses. First of all, certain consumption goods—and in particular for those proposed by
E-Power, electrical equipment and supplies such as batteries, car batteries, and
electric generators—are already big budget elements. For example, it is not unusual
for certain households to be prepared to spend substantial amounts of money in
prepaid credit for telecommunications to recharge mobile phones, for batteries, or
petrol in order to be able to feed the generator to watch TV. BOP populations
therefore are already consumers of goods targeting them; it is just that they adopt
costly, polluting, and unhealthy forms that could be improved with sustainable
development objectives. On the other hand, consumption patterns appear limited,
intermittent, or even occasional. They are at least partly subject to certain short-
term priorities—the purchase of rice, run-down stocks, school fees, and so on—but
also more broadly associated with limited needs fixed at a level that is considered
satisfactory for that particular household. One woman peasant explains it thus: “I
watch the telly only when I want to, it’s not regular, and when I can’t be bothered
to charge the battery, I just don’t watch it.”

Exploring the anthropological determinants of “value” in these rural societies
would of course suggest much more profound developments, whether to under-
stand the cultural constructs associated with the conception of “utility” or the
conditions dictating the relationship between production and consumption.
Indeed, our proposals are not so distant from economic anthropology theory that
considers the “limiting of needs” as a foundation for the economic organization of
primitive societies and beyond access to a certain form of abundance (Sahlins,
1972).

Such a hypothesis in fact suggests that “limitation of needs” would potentially
represent a much more powerful constraint on the development prospects of BOP
markets than “limitation of incomes.” The firm’s intermediate conclusion is,
however, less concerned with assessing this question of limits to consumption in
terms of thresholds than understanding the conditions, places, and instances that
prevail when “needs” are formulated, which establish occasional and reversible,
though not less important, limits.

“The Poor as Producers”—The second element of investigation of the studies and
experiments in support of the E-Power strategy looked at the conditions that allow
them to support the development of productive activities using a responsible
approach to the BOP market. The firm positions itself here in respect to the
economic and social development challenges for which it may be appropriate to
engage the competences of international and local NGOs through partnerships (see the following section). The orientations defined within these solidarity-based investment programs are guided just as much by normalized conceptions of development models that are sometimes relatively distant from forms of local entrepreneurial initiative. Generally, it is concerned with supporting the production/manufacture of food or craft products for sale on urban markets and supporting growth prospects by learning productive techniques, increased quality, diversification of supply, and targeting external markets (Reficco & Marquez, 2007). Meeting Malagasy villages where such programs are being experimented with shows that most rural households have great difficulty taking this model on board, in spite of the scale of investment dedicated to this type of training. First of all, as mentioned earlier, representations of the artisan–entrepreneur, market gardener, or any other specialized production activity do not exist per se. These production forms appear more in the form of integrated microactivities in the multiactivity model described above. They refer to hyperspecialized forms of production associated with “niche” markets: making children’s dresses for one seamstress or small bags of coffee for another are a niche to which they are more or less committed forever. Tools and know-how associated with these microactivities are passed down from generation to generation. They are part of a more general economy that combines heterogenic production activities (cheap eateries, farm work, and so on).

A second point of contention concerns representations of producers as rational managers who are able to plan a longer term economy and can invest in production equipment and machines (electric). Apart from a certain mistrust resulting from previous attempts scotched by the absence of technical reliability or low power, the difficulty of producers to envisage such investments refers more fundamentally to a cultural belief attached to the production economy. In the rural areas studied, land is inherited or acquired according to custom, raw materials taken freely (wood) or at little cost (raffia) from nature, and most of the added value is down to the labor component: “Until then, we husked rice with a pestle and mortar. However, a project to set up a husking machine in the village would be a great idea. That gives you two choices. When you’re tired of doing it by hand, then you could use the machine when you’ve got the money” (extract of an interview with a coalman responsible for public safety). This production destined for the mercantile economy among producers includes no, even primary, form of assessment of production costs, cost price calculations, or estimates of weekly or even daily turnover, i.e., no expression of “calculation” is involved. Also, this lack of rational business calculation, costs, and prices is more to do with competence than commitment to a framing of productive activities remote from habitual forms of capitalism.

Finally, while entrepreneurial representations are not absent from the rural areas we visited, they appear relatively distant from the production models referred to above, i.e., from a small artisanal production activity relying on urban markets. They are directed first and foremost at the local market (village, visitors). Even more, they often concern small service outlets—grocers and cheap eateries, but also cinemas, mobile phone cards, and others. In the cases we studied, the close link between this local service micromarket and access to electricity reveals a non-negligible potential for development. The question however remains to understand to what point this hitherto unknown representation of “producer” may
be able to align itself with the moral principles that frame the strategies designed for BOP markets.

It appears from these investigations that as a potential market, the BOP population does not really conform to the representations developed for it, whether through the ordinary representation of mass markets consumers, or the more elaborate representation of the consumer–producer representation of social business. The BOP does not correspond to the representation of a consumer with infinite needs but limited budget looking to satisfy his needs as far as possible; on the contrary, he/she is more a consumer with limited needs whose training should be at the heart of any study. As to the producer-peasant, his/her generally multiple activities are explained more by the social relationships and heritage of which he/she is part than a producer–entrepreneur model.

We explored these two dominant representations of the BOP as producer or consumer, but the models should be enriched by the exploration of other options: the BOP as member of a society, of political exchange, and family relations that define them, e.g., as citizen, neighbor, brother, and so on.

Creating a Market for BOPs: Organizational and Political Alignment

In this section, we study the way in which the hypotheses worked out by the innovation team are transformed when they come into contact with local actors. They discover the hybridity of the value chain, the actors to take into account as partners, and the various political configurations.

Industrial and Social Competences: Distribution in a Hybrid Value Chain

BOP markets, which are uncertain because they are based on logic that is alien to Western companies, require more than others the construction of new business models on the basis of new types of partnership. The academic literature leans toward a partnership model articulating the economic and social challenges based on a company–NGO partnership forming a “hybrid value chain” (Burdinich, Manno-Reott, & Schmidt, 2005).

On the basis of the cases examined in the literature, two major contributions of the NGOs have been identified. First, their familiarity with the context allows them to format their projects: selection of sites to be tested and framing of individuals’ expectations. Second, their charity status— their inherent concern for the poorest people—and their presence on-site enables them to monitor such experiments, in particular the social dimension: financing and support of the local economy (through microcredit, for example, in the case of the Grameen Bank–Danone association [Faiivre-Tavignot & Lehmann-Ortega, 2008], support to training and production [Urupana-ProRural NGO project cited by Reficco & Marquez, 2007], and setting up of a local government body [cooperative type, as in the case of the Gas Natural BAN partnership with the Pro-Vivienda Social foundation and El Colmenar mutual fund cited by Reficco & Marquez, 2007].

The development actors associated with BOP market projects are recognized as being particularly important for ensuring the reliability and reactivity of the actor chain when dysfunctions emerge (technical problems, recovery of payments, social
tensions, and so on). In all examples, partnerships are presented as an opportunity to reduce the distance between companies and BOP consumers. In this model, finally, the NGO is presented as the actor guaranteeing the societal benefits of the project, as well as its local presence. It can fulfill this role of guarantor through the social engagement of the company that can be accused of profit seeking “at the expense of the poor” (Reficco & Marquez, 2007). Local and national authorities are not taken into account in this model. They are even more avoided or discredited due to their political instability, bureaucratic momentum and, sometimes, corruption. The new developmental model based on the setting up of BOP markets includes a variety of actors—the poor people, local entrepreneurs, NGOs, local churches, cooperatives, and MNC—but excludes politic and administrative institutions of the country.

Adopting this model, the literature focuses on the conditions of effective cooperation between NGOs and companies based on stabilized distribution of competences, the construction of trust-based relationships (“business friend” according to Reficco & Marquez, 2007), shared values, and mutual understanding. The actors are tied by a mutual dependence relationship: mutual obligations to sustain the market relationship and not working with competitors.

It is this idealized distribution of roles that we would like to discuss by considering the different experiments we have followed. On the one hand, the study of these projects brought us into contact with non-NGO partners whose role is essential in the organization of the market and the viability of the economic model, i.e., local entrepreneurs but also local or national public institutions. On the other hand, the different projects studied present partnerships of very different configurations where the identity of the different actors, their contributions, and requirements vary.

**A List of Partners Including National and Local Institutions**

In a reflection on the BOP project business model, local and national political institutions in the developing countries concerned are given little attention. Seelos and Mair (2007), on the subject of regulation institutions, mention weakness, and absence of, or even barriers to, development. “Third World countries are poor because the institutional constraints define a set of payoffs to political/economic activity that do not encourage productive activity” (North, 1990, p. 110, cited by Seelos & Mair). The result is that the spaces within which this competitive play between enterprises could be played out in order to serve the needs of local markets are indeed weak. “Often institutions supporting market exchange, such as property rights or specialist intermediaries, are weak or absent” (Peng, 2003). The BOP strategy message is therefore based on mistrust of local institutions that needs to be overcome as far as possible. In the same way, these strategies command an economic model where the distribution of products must be able to operate outside the traditional financial support of development policies, via international NGOs or local institutions.

And yet, if we look at experiences reported in the literature, we note that local institutions often play a non-negligible role. In the case of Waste Concern and Map Agro (Seelos & Mair, 2007), two Bengali companies that came together to transform
urban waste into compost in a rural setting, the Bengali government supported one of them by offering land, a very rare and costly resource in Bangladesh. In the same way, we see the importance of the support of international development institutions (the World Bank).

The main message from the initial experiments carried out by E-Power talks concerning the influence of interactions with political institutions that play a tremendous support role as well as throwing up obstacles throughout the project. The national and local political levels are key players in the process.

At the national level, in the case of Madagascar, rural electrification is of interest to different types of actors: there are the elected representatives of the different territorial levels, ministers, and representatives of administrations such as the Ministry of Mines and Energy, the Agency for Rural Electrification Development, and the Organisation for Electricity Regulation. Their interventions prevail at different registers: public policy with, in particular, the creation of a national electrification blueprint that identifies priority areas and allocates funding to them; support to development through grants allocated to projects respecting criteria such as preference for renewable energies; regulation of access and development of the market via administrative operating authorizations that can be combined with a monopoly concession for a particular village and price regulation; and finally clientelism and lobbying relationships between national and local politicians that can, on the contrary, be detrimental to the feasibility of an electrification project.

At the local level, political governance is distributed between different actors who are differentiated partly according to territorial levels ("fokontany,"8 commune, "fivondronana"9) and partly depending on whether they report to administrative or traditional power bases linked to the customs of the land and their ancestors ("tangalamen"). As with the national powers, local political bodies can block a project if they feel it is too politically sensitive (alliance with a political opponent, for example), or indeed damaging to the local population. Thus, a traditional village chief is systematically consulted and his opinion taken on board by those organizing the project, as a guarantee of the village’s acceptance of it.

However, the role of local political bodies does not stop in the organizational phase of the project. They may develop a coherent policy supporting economic activities; they may also attempt to cream off the activities for their own benefit. When visiting a village that had been electrified for 15 years with the support of an NGO, we noted the extent to which the aptitude of local cooperatives to negotiate interactions with local politicians was essential to guaranteeing the sustainability of the operation and the inhabitants’ trust of the operators. And that was just as essential for the drafting of the rules of collective use (Who has priority in a situation of need? Under what conditions can we have electricity supply?), in order to facilitate the recovery of funds (conversion of payments in kind into cash, spreading of debt, creation of a mutual support unit for households facing hardship) and to rule in case of damage. The sustainability of electrification projects is therefore dependent upon a political competence in the management of interactions with local and national bodies.

These institutions bring with them diverse requirements: fairness and solidarity as well as environmentalism. They can also provide the financial support that is lacking in these projects, or even lend legitimacy. Electricity is not a product...
like any other, as its production and commercialization are part of an institutional framework and the realities of a political context. Thus, on the contrary of what was shared by BOP market models, local and national policies and actors matter. A better understanding of their role and implication is required.

**A Diversity of Political Configurations and Economic Equations**

The construction of a business model for BOP markets entails a series of phases, in particular the identification of reliable local partners who are familiar with the area, and who could enter into a co-construction arrangement with the company. Developing a BOP market requires the identification of the potential market in practical terms: having defined the target population (rural populations), experimental sites and local, potentially interested contacts have to be found.

In order to identify suitable “land,” E-Power adopted a relatively opportunistic approach on the basis of a series of networks (of the internal social foundation, of employees privately involved in development projects, of managers of operational units and of Rotary-type benefactors’ clubs). From the outset, several types of actors were identified as potential partners, without any apparent exclusivity. Partners can be other major multinationals, themselves committed to a BOP approach or involved in industrial projects in developing countries, NGOs (international and local), or local entrepreneurs. Because the learning objective is a priority at this stage of the approach, different experiments, developed with different types of partners, cohabitate within a BOP project. The company explores and tests not only the type of partner with which it wishes to build the project but also the economic and political configuration in which it can take place.

It is for this reason that the company seized upon all the opportunities available to it to learn: It used existing experiences, but not necessarily those committed originally to a BOP strategy, in order to test the feasibility of the strategy. It was through its progressive commitment to projects that the distribution of roles and the economic and political configuration of the project became clear.

In case no. 1, in Madagascar, the experiment falls within the framework of a contract with a major global industrial company having obtained operating rights in a developing country. The company, taking responsibility for the social impact of its site, developed an accompaniment mechanism for surrounding villages via an integrated social action structure. E-Power, one of the partners of that industrial project, handled the electrification of the village. The idea was, through electrification, to repair damage perceived by rural populations caused by the industrial project.

In case no. 2, in Indonesia, the experiment was performed via the E-Power foundation in association with a small European NGO committed to the protection of a forestry area on a Pacific island. This time, the NGO took responsibility for the political exchange with local populations: by contributing to local economic development and supplying electricity. The NGO was attempting to discourage villages from accepting the extension of forestry operations to an area recognized for its biodiversity.

Thus, in both cases, electrification projects are presented as political compensation for harm suffered by populations or efforts made by them. This compen-
sation mechanism deeply affects the economic model of the projects concerned: The equipment was installed before the question of the financial coverage electrification had been discussed, and in particular, prices and means of payment. The political stakes drove negotiations. In the first case, negotiations with the local community continued even when the project was completed; in particular, E-Power was consulted to increase the power rating of the local network and thereby allowed new businesses to open. In the second case, the NGO was confronted with substantial local political pressure and put its own credibility on the line. However, it is also dependent upon the financial and technical support of E-Power.

In case no. 3, Madagascar, the preparation phase of a new experiment envisages a partnership with a local entrepreneur specialized in telephone relay site installations seeking to develop an off-grid electrification branch. Met via the Rotary Club, the entrepreneur suggests an initial experiment to E-Power, thanks to the electrification of his home village in a tourist area of Madagascar. The economic model envisaged is, on the face of it, closer to a BOP model to the extent that it should be economically self-financing. Determining the price of electricity is one of the first elements of the equation on which the entrepreneur is working as much in his discussions with E-Power as with the inhabitants. Accompanying the local entrepreneur’s team in the village, we observe how progressively exchanges between the company’s technicians and the inhabitants help establish a general idea of price that, through its relative accessibility, would contribute to lending credibility to the project and making it more tangible.

However, in the latter case, the economic model relies on technical choices as well as the societal ambitions pursued. Here, E-Power seeks to prioritize renewable energy sources, thus increasing the investment. This technical option chosen by E-Power reflects the company’s lofty societal ambition, even though it is not necessarily shared by the local population, NGOs, or the partner entrepreneur. In order for the economic model to be accessible in spite of all this, E-Power intends to financially contribute to the investment via a CSR fund that has recently been set up internally.

The study of these three cases reveals unexpected combinations of actors behind the different economic equations, which ensure their viability. These economic equations are quite different from the BOP model announced in the literature as, in all cases studied, E-Power covers most of, or even all, the costs. The third case is closer to a BOP strategy. Nevertheless, E-Power is also covering the additional cost associated with the use of renewable energies.

Thus, in these cases, E-Power moves away from the typical BOP strategic model, i.e., from the representation of a company with a straight technical involvement, its implication extending to a societal level in the same way as an NGO or a public institution. It is committed to the same type of political exchange and is compelled to meet the same legitimacy challenges. Does this mean that the company has moved away from its proper role? Is it not faced with the contradictions of the BOP model? To guarantee the legitimacy of its approach, the company has committed to the supply of electricity as much as to the commitment of reducing environmental impacts, but this requires additional cost that it alone can cover through its foundation.
The models tested or envisaged show the diversity of possible configurations to allow BOPs to access electricity. The first configuration is organized around a multinational company that is sufficiently powerful to defend itself before political actors at a national level, which entails societal demands, but only it can provide the funding. This means that it is committing to a partnership-type relationship with the beneficiaries, organizing economic exchanges, and taking responsibility for development projects. In this configuration, the company invests most in terms of its political legitimacy. The second configuration is based mainly on the involvement of the NGO: It is creating local operating and regulatory bodies taking on an institutional, cooperative form. This configuration requires strong local actors and considerable control. However, it also entails a risk of obstruction or diversion by local politics. The third configuration promotes the role of the local entrepreneur. It is his understanding of the local market and its needs, resources, and obstacles that allow the company to build a profitable business model. The risk is that societal priorities are forgotten on account of the economic challenge of controlling costs.

Thus, in order to reflect on the diversity of possible configurations, it would seem that the BOP market actors (MNC, NGOs, and local and national institutions) must learn as much from existing configurations, where NGOs, companies, and local institutions already collaborate, as well as from new combinations that could replace them.

Discussion: The BOP Market as a Responsible Business

The development of the BOP market is thriving, supported by strategic innovation models that are not only based on business models but also and explicitly on the issues of social development. As discussed above, that type of development is considered through two different approaches: On the one hand, the BOP market is deployed through access to consumption that develops almost “organically” as a form of positive externality; and on the other hand, the BOP market addresses the producer(s), and the social and economic development of the poorest of populations results from the commitment of the firm’s socially responsible policy. These two approaches do not reflect the same definitions of “value” (Stark, 2009), or the same ways of giving meaning to the action and assessing it. In the first case, sooner or later economic profitability will be the deciding factor. In the second case, the company’s improved political legitimacy is the major consideration: The assessment of the action cannot be made in terms of profitability but in terms of social and economic development.

The ambition of BOP strategies is to rearticulate these two approaches: The idea is to think about these new activities both as profitable and socially responsible (Porter & Kramer, 2006). Each company in its own field of activity has to identify the societal issues it is best placed to resolve, not requiring financial aid, which is a condition of the economic sustainability of its activity. For these international companies, it is not simply concerned with introducing a societal concern into its product or supply strategy and influencing market forces to get it recognized (Kjellberg & Helgesson, 2008) but stretching the market toward a hitherto excluded space: that of poverty.
The models associated with this strategic market innovation are therefore carried by a responsible and comprehensive ambition. It is not or no longer simply a question of deploying qualification operations to produce a series of adjustments between supply and demand but creating morally legitimate uses that can incorporate relatively restricted definitions of the “right way of consuming.” The company therefore has to define the consumption needs of the poorest people. However, perhaps more than elsewhere, it is being tested in its adjustments to the local values of users: On the one hand, the usual “framing” form of value as a measurable characteristic situated according to its scale of preferences is not terribly useful in interpreting highly limited systems of needs that are constantly reversible and radically distant from those that apply to our own societies. On the other hand, local values that emerge from these studies appear relatively distant from the legitimate forms of justification in the BOP scope. Studies in these villages have shown that the uses of electricity are primarily oriented toward TV, DVD, radio, telephone recharging, and lighting inside and outside the house. Thus, electricity provides first and foremost additional comfort; it contributes to the consumption of cultural products such as music or films and facilitates access to information or political news, promotes local sociability, and supports the social link within the wider family that is becoming increasingly dispersed. And yet, this “local value” raises questions for the company that is concerned with the “morality” of, and by extension, the sense and the social responsibility of its action: Should it take these usages into account and satisfy them at lesser cost or determine new, more “noble” applications? The company could be tempted to align with Karnani’s doubts (2007) concerning the capacities of poor people to consume things that are good for them.

Putting to one side consumption practices but reflecting more on partnerships and business models, we find this same challenge of incorporating “responsible qualities” at the very heart of the value chain. BOP theory models are not or not only concerned with describing the most efficient business models. They explore those that are “good allies,” i.e., those that can support value chains that are able to take this mix of political and mercantile objectives into account. Here it is interesting to observe that, similar to what we observed on environmental issues (Reverdy, 2005), the strategy associated with BOP theory is presented as an authentic “auto-regulation” of social or societal problems by the company itself, which is capable of getting round the regulatory or financial incentive constraints. The firm sees itself as an actor of regulation that can compensate for the weakness of institutional actors, and particularly those of the state, or indeed, of international institutions. For the most part, BOP theory, as it applies more broadly to its line on the societal responsibility of companies, criticizes the action of the public authorities that it considers as absent or weak.

The arrival of the firm as a political actor in the arena of development programs nevertheless brings it into direct confrontation with local and national public authorities and international organizations. The former are unavoidable actors in the production of regulatory frameworks that constitute the ecosystem of innovation. They are sponsors of development programs that can condition the actions of firms on local markets. They are regulators of the game regarding societal and environmental issues. They also create some conditions that facilitate innovation processes and their sustainability. Their “weakness” tends more to reflect political
instabilities that expose local politicians to a certain vulnerability, but this does not mean they can be side-stepped. The latter (international organizations) are also regulation authorities that strongly frame development programs within emerging countries. In other words, there are many markets everywhere whose development is subordinate to the actions of public authorities: The market for medicine, waste, pollution treatment equipment, and renewable energies are good examples of this. Public policies have to be taken into account in the design of technological and social innovation in BOP markets.

**Conclusion**

Into the debate on BOP markets, local and national institutions and policies are blind spots. The present article argues that both investigators and actors (among others, MNCs) must take them into account. The BOP market model/theory already concludes on the necessity to set up a denser actor-network allowing MNCs\(^{11}\) to come closer to the BOP. They did it through the integration of NGOs and local entrepreneurs, but is it enough? Our field investigations show the presence and active role of local and national institutions and local officials. The BOP market model disconnected from local and national institution has no meaning. Whatever MNCs expect to overpass local politics and to be more efficient out of the political and bureaucratic games, there is no way to avoid taking these actors into account. In fact, local and national institutions and actors play a role in the innovative process and in social innovation.\(^{12}\) They are involved and interact with the other actors. The relevant questions are thus: What is the configuration of heterogeneous actors involved in a specific emerging BOP market? What are the various configurations we could find in action and what others can we imagine? What are the local public institutions involved into the field action? We lack detailed investigations studying these institutions and the diversity of their actions.

Fieldwork on emerging BOP markets helps to fuel current debate on the role of technological and social innovation in developing countries regarding the alleviation of poverty. Looking at MNCs’ strategies is a relevant entry point, even more when these MNCs start thinking that there is no place for local public policies, because the field evidences impose to see how important local public actors are in innovative dynamics. They have a role and they contribute, sometimes negatively, to the fight against poverty. Our investigation suggests taking seriously into account these actors in the development of BOP strategies. This also means thinking about innovation policies that would create the conditions for the development of BOP market strategies and for their sustainability.

If public institutions are inevitably partners for MNCs, conversely, these public institutions could think about the way to cooperate and to regulate the heterogeneous configuration constituting virtuous BOP markets. This is ever more important when MNCs and BOP markets directly concern the issue of access to infrastructure and basic service or infrastructure (electricity, water, and habitat) whose implementation is generally framed by the national legislative and regulatory frameworks and conditioned by the action of local authorities. As international institutions and national and local governments often play a significant role in
implementation of BOP projects, we suggest national institutions should encourage investigation and debate on their role and implications in emerging markets.

The issue is important because there is nothing evident regarding the way to proceed. One of the characteristics of the BOP markets is the fact that people have very few monetary resources and their economic situation is tenuous. Thus, even small regulatory programs, with tax and penalties, could completely destroy the emerging as well as the existing markets. These BOP markets function as far as they stay relatively informal with unofficial arrangements. As a consequence, they are generally unstable. A specific reflection is needed for public intervention in order to sustain the virtuous emerging BOP markets, which help to fight against extreme poverty, taking also into account the existing economic sectors and the national industry (another missing actor in the BOP market theory). Its action could take place on several levels: supporting the establishment of appropriate institutional frameworks to support local actors, assisting in the mobilization of investment and maintenance of financial viability, and supporting solutions for low cost and sustainable development.

The question of political stability is central to determine the sustainability commitments of the donors (MNCs, NGOs, and international organizations) on such projects. Political crisis sometimes abruptly suspends the viability of projects. Even when national institutions and local government put some priority on the rural development and the fight against poverty, it is not uncommon that the interactions with local actors to identify priority areas, to allocate funding, and to set the terms of implementation (concession contract, tariff setting) became pretexts to develop relationships with clients. Local actors can block a project if they are excluded. In the case of a community facility, it is not uncommon for local politicians to divert profits from its activities for their own benefit. The ability of local actors to manage interactions with local officials is essential to ensure sustainable operation and trust of the people. At the local level, governance refers to various political actors, sometimes divided and engaged in rivalries or conflicts, making relatively difficult the anticipation of the strategies of the actors if there is no localized empirical approach. In a context of political instability, such alliances are always in danger of reversibility. Private actors fear exchanges with political parties and local elected officials.

In fact, they are not only difficult to circumvent but they also contribute to the setting up of BOP markets. They are both market intermediaries (Trompette, 2007) and entrepreneurs of equity (political mediators) that we need to describe. Such issues must be taken into account in the setting up of specific innovation policies oriented toward the impulsion and the accompanying of the emergence and stabilization of virtuous BOP markets. National policies need to think about their own role into such dynamics.

The tensions described in this article destabilized the company and were the subject of frequent internal debates at each stage of the project: to whom does the project report (the Sustainable Development Department or the Innovation Department?), the search for and choice of partners, the setting up of teams, assessment of experiments, are all phases when the sense behind the E-Power action is rediscussed and where the different definitions as to the value associated with the BOP electricity market are defended (Stark, 2009). “Finally, what exactly
is the contribution?” is a question that managers and engineers confronted with hitherto unseen uncertainties frequently express. The enrollment of actors who are increasingly distant from the inner circle of the project team illustrates the way in which BOP theory can function as a utopia. Around this prospective vision, the company’s actors and competences become engaged. The BOP utopia allows a wager to be made on the articulations between different approaches. Like an oxymoron, it invites us to explore new possibilities to the paradoxical frontiers of consumption and aid to the poorest populations. Although testing this utopia through the analysis of experiments deeply affects initial representations and preconceptions of actors involved in innovation, it can however feed the BOP strategy of a company by opening it up toward a diversity of alternatives and possible configurations for product and service offerings provision to these poorest populations.

For public policies, too, innovation for BOP requires the acceptance of uncertainty concerning the economic and political environment in which it develops. Innovation for BOP people raises a number of issues that are beyond the scope of this article but that need further research. They mainly concern the study of the diversity of possible configurations. National policies could drive research programs aimed to construct the knowledge base that could accompany BOP market actors (MNC, NGOs, and local and national institutions) to learn from existing heterogeneous configurations. They could also look at new combinations and learn how actors develop their own capacities and equipment (Vinck, 2011) to sustain their engagement into such configuration. Thinking there would be only either economical transaction or charity action does not help to understand what actors are inventing, exploring, and stabilizing as solutions. Following them would reveal the importance of the discussions and actions taking place around both experimental and routine devices. This would shed light on the place occupied by the discussion concerning both the justification of the action and the accountability. BOP innovation impacts political, economical, and social relations (Gelb & Decker, 2012); not surprisingly, tensions can arise and public policy will have to be dealt with.

Notes
1 An earlier version of this article was presented at the 8th Globelics Conference in Kuala Lumpur, Malaysia, November 1–3, 2010.
2 This representation is somewhat controversial (Karnani, 2007).
3 Two villages of the case no. 1, one village for the case no. 3.
4 In Madagascar, 80 percent of the population live in rural areas and 72 percent live below the poverty line. We studied villages from the region of Hauts-Plateaux (continental climate) and the East (tropical climate) where the main crop is rice.
5 “School fees” are the families’ contribution to operating costs (teacher’s salary, teaching materials) in primary and secondary schools when the state cannot cover all educational expenses.
6 On the contrary to the model of Mair, Marti, and Ventresca (2011).
7 See the description of the highly publicized meeting between Franck Riboud, CEO of Danone, and Muhammad Yunus, founder of the Grameen Bank and between Hermansen, CEO of Telenor and, again, Muhammad Yunus (Seelos & Mair, 2007).
8 Could be translated by group of hamlets or villages.
9 Corresponds to a grouping of communes.
This can lead to a comprehensive socioeconomic and relatively closed approach as in the case of the Danone Grameen Bank, where the mechanism is designed to interfere as little as possible with the other Bengali food markets, and notably that of milk (Faivre-Tavignot & Lehmann-Ortega, 2008, p. 12).

Their motivations combine social network influences (COE friendship), firms’ account regarding sustainable development requirements, and market development opportunities in emerging countries.

For example, Ostrom (1990) showed how collectives created and managed commons through institutional arrangements.

For the developing countries, research is mostly public, the connection between research and industry is weak, foreign investment in local R&D is in favor of export-oriented productions (Cozzens, Gatchair, Kim, Ordoñez, & Supnithadnaporn, 2007). As a result, the country’s industry is not so much connected to the R&D and innovation oriented toward its own population needs.

### About the Authors

**Céline Cholez** is an assistant professor at the Grenoble Institute of Technology. She works in the area of sociology of work and theory of organization. Her most recent publications have appeared in *Recherches Qualitatives* and *M@n@gement*.

**Pascale Trompette** is a sociologist and CNRS Research fellow at the PACTE (Politics—Organizations Department) at the University of Grenoble, France. She works in the area of economic sociology and sociology of markets. Her most recent publications in English have appeared in *Journal of Cultural Economy, Science Studies, Management and Organization History*, and *Mind, Culture and Activity*.

**Dominique Vinck** is a professor at the University of Lausanne. His research focuses on science and technology studies. He recently published: *Everyday Engineering: An Ethnography of Design and Innovation* (MIT Press, 2003), and *The Sociology of Scientific Work: The Fundamental Relationship between Science and Society* (Edward Elgar, 2010).

**Thomas Reverdy** is an assistant professor at the Grenoble Institute of Technology. His area of research is economic sociology and theory of organization. His most recent publications have appeared in *M@n@gement*, *Sociologie du Travail*, and *Revue Française de Sociologie*.

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