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Innovations to Make Markets More Inclusive for the Poor

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Abstract: Market failures, government failures and some of the characteristics of both the poor and business actors as well as their environment could act as barriers preventing the poor from more actively participating in markets, both as consumers and as producers. Private actors, including for profit and not-for-profit entities, and often in partnership with the public sector, have been able to mitigate some of these constraints through innovations that have improved the poor's access to certain markets. This paper takes stock of some of these initiatives and provides an illustrative compilation of those that seem to fit three criteria: they go in the direction of achieving financial viability, generating positive development impact, and reaching the poor. Drawing on the initiatives profiled as well as the available literature, this paper identifies some of the strategies and innovations that have been used to make markets more inclusive for the poor, and devises a possible typology for them. It is a first attempt to survey and outline the main features of these initiatives with the intention to spur further research in this area.

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Introduction

Markets provide myriad benefits to those of who have access to them. In tandem with the important role played by the public sector, notably of providing key public goods, markets could be an engine not just of over-all economic growth but also of individual human development and economic empowerment. Numerous barriers, however, prevent the poor from more actively participating in markets, both as consumers and as producers. As producers, the poor could be shut-out of labor and various product markets due to lack of access to credit, limited investments in their human capital (including skills and entrepreneurship training) as well as geographic obstacles, such as their location in remote rural areas which are typically poorly reached by infrastructure networks. As consumers, the poor could also find it difficult to access markets due to many of the same geographic factors, compounded by a number of other barriers, including those linked to the unfamiliarity of many non-poor business actors to the low-income environment and the possible opportunities it offers.

The lack of inclusiveness of markets could also be intimately tied to a number of market failures. Incomplete markets (such as for credit and insurance), imperfect information, public goods and externalities have all been discussed under the rubric of “market failures” and are probably ubiquitous in all countries. However, some of these features might be more acute in low- income environments (Stiglitz 1988;1989), notably in areas related to education, healthcare and credit. These could make markets operate in ways that exclude the poor; and at one extreme, these could make certain goods and services unavailable to the poor even at any price. Compounding these challenges in some cases are public sector interventions that, while meant to address the underlying lack of market inclusiveness, might actually fail and end-up adding government failure on top of these market failures.

Can markets be made more inclusive for the poor? One avenue of response could focus on removing some of these barriers, in an effort to change the environment itself. This line of action might involve, for example, institution-building and extending legal empowerment to the poor, and perhaps even a significant part of the non-poor but still low-income population. In such cases, the intervention is often focused on a more adequate provision of market-underpinning public goods, which includes a legal system that does not discriminate against nor exclude the poor. Important efforts are progressing on this front, and the public sector in partnership with other actors including business, civil society and non-governmental organizations (NGOs) plays an important role here. However, these types of investments in institution-building and strengthening may take time to bear fruit.¹

In the meantime, a possible alternative might be to work within the present environment and deploy market-based innovations—radical and incremental changes to products and processes—designed to help overcome some of the barriers hindering the

¹ See for example, the work of the Institute for Liberty and Democracy (www.ild.org.pe), the High Level Commission on Legal Empowerment of the Poor (<http://legalempowerment.undp.org>) and The World Bank’s “Doing Business” database (www.doingbusiness.org).

poor from more actively participating in markets. Markets, when they function well, could be powerful innovation machines (Arrow 2007; Baumol 2002; Sheshinski, Strom and Baumol 2007). Take the personal computer (PC) as a now ubiquitous tool for modern life. Some of the first minicomputers—the precursors to today’s PCs—were introduced in the late 1950s at a price of about \$120,000.² Today, PCs could cost as low as \$300,³ and there are even efforts underway to produce a laptop for sale to developing countries for about \$100.⁴ Could the dynamism of market-based innovations⁵ be used to make markets more inclusive for the poor?

This paper responds to this question and examines innovations by different private actors that could overcome some of the barriers to market inclusiveness. For profit (business) and not-for-profit entities (civil society and NGOs), often in partnership with the public sector, have in certain cases been able to undertake initiatives to improve the poor’s access to certain markets even under some of the most challenging market environments. These initiatives cover a vast, and growing, landscape, but the focus here is more circumscribed: Do some of these initiatives suggest that strong business and development cases could be *simultaneously* made in making markets more inclusive for the poor? Put differently, can private actors deploy innovations in order to help the poor gain access to markets (as producers and consumers) while at the same time achieving financial viability and concretely contributing to human development? To help answer these questions and add to the nascent literature in this area, this paper makes two contributions.

First, this paper surveys the academic literature, and the available case studies and some anecdotal evidence on initiatives by private actors that help make markets more inclusive for the poor. It provides an illustrative compilation of those initiatives satisfying three criteria which used to construct a basic framework for thinking about market inclusivity: they go in the direction of achieving financial viability (defined in this paper as, at least, breaking even), they generate a positive development impact, and they reach/serve the poor. This paper finds that, while the landscape of initiatives by private actors is vast, only a few initiatives probably fit these three stringent criteria simultaneously.

Second, drawing on the initiatives profiled in this paper, as well as the available academic literature, this paper presents a possible typology of some of the successful business strategies, and specifically identifies the innovations that embody these

² For an outline of the history of PCs in the United States, see the Computer History Museum website [http://staging.computerhistory.org/timeline/timeline.php?timeline_category=cmptr].

³ Detailed empirical analysis using data on PCs in the United States between 1976 and 1999 by Berndt and Rappaport (2001) reveals that, adjusting for quality, computer prices have indeed declined dramatically.

⁴ One Laptop per Child (OLPC) is a non-profit association dedicated to research to develop a \$100 laptop primarily targeted for use by children in the developing world. This initiative was launched by faculty members at the MIT Media Lab. It was first announced by Lab co-founder Nicholas Negroponte, now chairman of OLPC, at the World Economic Forum at Davos, Switzerland in January 2005. For further information, see <http://laptop.media.mit.edu>.

⁵ To be more precise, innovations could be introduced by any actor—public or private—but the focus here is on those that are introduced within a market-oriented framework.

strategies. The goal is to provide a first attempt to outline some of the key innovations that are helping to make markets more inclusive for the poor.

There are a number of initiatives (including those profiled in this paper) that reveal business strategies that seem to demonstrate some success in reaching the poor, achieving financial viability (and perhaps for some even profitability) and generating a positive impact on human development. As noted earlier, the innovations embodying these strategies could include both radical and incremental changes to products (including goods and services) and processes (e.g. production, marketing, etc.), designed to help overcome some of the barriers hindering the poor from more actively participating in markets.

Focusing on “private sector actors” defined very broadly (referred to here simply as “private actors” in order to avoid confusion with others’ more narrow focus on business actors), two potential trends seem to emerge from the analysis in this paper. First, it seems that some private actors, including a growing number of for-profit businesses, in some contexts and given certain conditions are using innovations to realize commercial (core business) opportunities in penetrating deeper into low-income markets and serving the poor by providing goods and services that enhance human development. In addition, other private actors, notably not-for-profit actors and NGOs, including numerous not-for-profit microfinance institutions (MFIs), are using innovations in order to attain greater financial viability (financial self-sustainability, though not necessarily profitability) as part of a strategy towards greater and more sustained breadth of outreach of providing services to the poor. However, due to the scant academic literature in some aspects—such as the lack of evaluation of financial viability for many initiatives, and scant development impact assessments—these findings remain suggestive.

In what follows, section 1 very briefly describes the framework for selecting the initiatives by private actors discussed in this paper, and some of which are profiled and presented in the annex. Section 2 then draws on these profiles, as well as the available literature, in order to devise a possible typology of innovations that are helping to make markets more inclusive for the poor. A final section describes the preliminary observations derived in this paper, and it outlines some of the areas for future research.

I. A Framework for Market Inclusivity

The survey of initiatives by private actors undertaken in this study sought to identify those most closely approximating three characteristics which, taken together, could begin to comprise a basic framework for thinking about market inclusivity:

Is the initiative reaching the poor?

The initiatives profiled are those intended to increase the poor's access to markets, either viewing the poor as consumers or as producers. Hence, an example is mobile phone banking provided by WIZZIT Bank in South Africa, where there is evidence to suggest that the poor are already being reached.⁶ For the majority of cases, however, the initiatives might not yet reach the poor, even as they seem to be going (or are intended to go) in that direction (see figure 1). Hence the compilation of initiatives also includes those that more generally seek to penetrate deeper into low-income markets, defined more broadly than the widely used cut-off for internationally comparable poverty (people living on less than \$2 a day).

Is the initiative geared towards achieving financial viability?

The initiatives profiled are those that are expected to achieve financial viability—defined in this paper as, at least, breaking even—or perhaps, for some, even attaining profitability and a competitive rate of return. This approach was taken in light of the different possible motivations of private actors in this space. For instance, NGOs might be passing on all savings and profits to their membership, or using this to expand their scale and scope of services. On the other hand, more traditional for-profit business actors might be interested to develop a core business case in serving the poor. An effort was made to try and verify that each of the innovation entries at least is intended to go in the direction of financial viability which would be an early indicator, in some cases, of whether the initiative potentially comprises a core business case for the private actor involved (see figure 2). This, even as some might have been (or are being) financed through subsidies or through donor contributions. (KickStart which provides MoneyMaker pumps to farmers in Kenya and Tanzania, and the World Bank's Global Index Insurance Facility which seeks to spur the creation of insurance markets in the developing world are examples of the latter.) However, because the survey relies on secondary, and often anecdotal, information, further confirmation of this aspect is suggested as an important area for future research, and all findings in this paper are at best suggestive in nature.

Is the initiative associated with a strong human development impact?

The initiatives profiled herein involve increasing access by the poor (or the low-income population more generally) to markets for basic goods and services as well as those markets which could contribute to their economic empowerment, such as markets for financial services that the poor might consume, or markets where the poor might be able to participate on the supply side (see figure 3). Hence, the initiatives identified span areas where both theory and evidence generally suggest a strong development linkage, e.g. financial services, health, housing, information and communications technologies (ICTs),

⁶ A useful reference point for defining the poor in a comparable way across countries is to identify them as those people living on less than \$2 a day. Lack of data, however, limited the application of this test on many of the initiatives by private actors that were surveyed for this paper.

water, technological products, and capital equipment. This emphasis is meant to ensure that the focus is on growing inclusive markets in a way that is most connected to positive human development outcomes.⁷ To the extent possible, this paper draws on the available empirical evidence on the possible human development impact of specific innovations; however due to the scant research and still evolving nature of some of the examples, this is considered as another area for further research.

Several additional methodological aspects need to be pointed out to help clarify the nature of the initiatives profiled in this paper. First, the compilation of initiatives contains both those that are still in an initial stage, as well as those that have achieved more maturity. Thus, the entries include examples like KickStart in Kenya which still seems to be working towards financial viability as well as more traditional for-profit actors like Smart Communications in the Philippines which seem to have achieved this already. In addition, the level at which the initiatives have been introduced span the global, national as well as the local levels. This helps clarify how different levels of intervention are possible, depending on which aspect of the market might offer the best opportunity.

It must also be noted that initiatives that impact positively on the poor could ultimately come in myriad forms. No effort was made here to make this compilation exhaustive, although the intention is to build it into a more comprehensive inventory with the addition of examples over time. Thus, without claiming that the compilation is comprehensive, the following databases, in addition to a broad literature search, were consulted for this study:

1. Ashoka's *Changemakers* initiative (www.changemakers.net/en-us/node);
2. Case Western Reserve University's *B·A·W·B Innovation Bank* (<http://worldbenefit.cwru.edu/Innovation/>);
3. CGAP's *Case Studies* (www.cgap.org/portal/site/CGAP/menuitem.6179769bed45640167808010591010a0/);
4. CGAP's *Microfinance Gateway* (<http://microfinancegateway.org/>);
5. FinMark Trust's *Innovation Series* (www.finmarktrust.org.za/innovation/innovation.html);
6. Harvard University's *HBS Cases* (http://harvardbusinessonline.hbsp.harvard.edu/b02/en/cases/cases_home.jhtml);
7. Poverty Action Lab's *Innovations for Poverty Action* Publications (www.poverty-action.org/ourwork/publications.php);
8. MIT's *Innovations Journal* (www.mitpressjournals.org/loi/itgg?cookieSet=1);
9. Planet Finance (<http://www.planetfinance.org/>);

⁷ What this excludes, therefore, are markets for goods and services that may not be strongly associated with development, such as various commercial products (e.g. soap, face cream, etc.) even as it is noted that access to markets for these products might in certain cases help improve welfare and expand choices for the poor.

10. UNCDF's *Microfinance Matters*
(http://www.uncdf.org/english/microfinance/pubs/newsletter/pages/jan_2005/index.php);
11. WBCSD's *Case Studies*
(www.wbcd.org/templates/TemplateWBCSD5/layout.asp?type=p&MenuId=ODY&doOpen=1&ClickMenu=RightMenu);
12. Women's World Banking's *Innovation Briefs*
(<http://womensworldbanking.org/id,21/do,series/cid,11/>);
13. World Bank's *Development Marketplace* initiative
(<http://web.worldbank.org/WBSITE/EXTERNAL/OPPORTUNITIES/GRANTS/DEVMARKETPLACE/0,,menuPK:180652~pagePK:180657~piPK:180651~theSitePK:205098,00.html>); and,
14. WRI's *What Works* Case Studies (www.digitaldividend.org/case/case.htm).

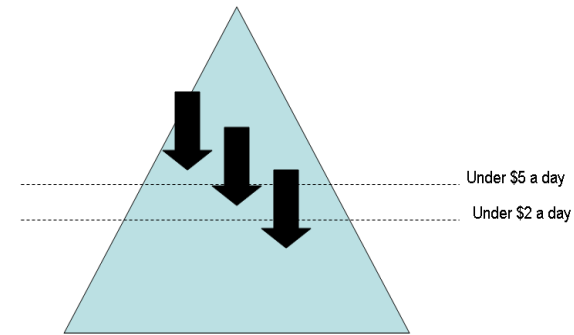
Drawing on the initiatives profiled, as well as the available (mostly sector specific) literature, this paper then tries to identify some of the innovations underpinning business strategies geared towards increasing the poor's access to markets. An attempt is made to construct a possible typology of these innovations. While many of the innovations discussed in this paper are not new, the point of this exercise is to take stock of the interesting—possibly even cross-cutting—strategies that seem to work well in helping to make markets more inclusive for the poor. Including even these “older” innovations enables a fuller picture of this space.

Box 1. Main Criteria for Initiatives Profiled

Is the initiative reaching the poor?

Various initiatives by private actors could try to make markets more inclusive for low-income people in general, but the question remains whether they actually reach the poor, as for instance, indicated by the widely used cut-off of people living on less than \$2 a day.

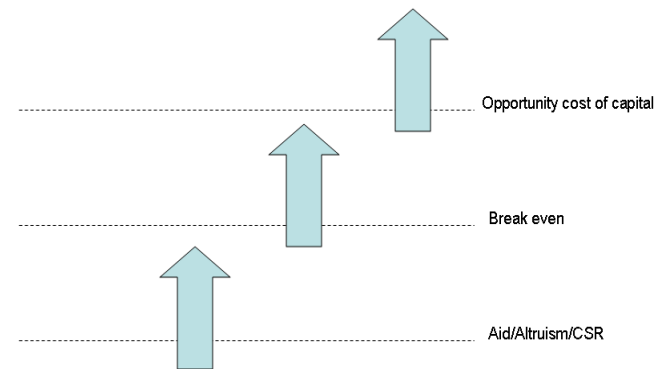
Figure 1



Is the initiative geared towards achieving financial viability?

Initiatives by private actors—including business and civil society—could come in myriad forms, implying different financing modalities. They could also be in different stages, so they could become financially viable even as they do not meet this criterion presently. Hence, these initiatives could probably be placed along a spectrum of financing modalities. Perhaps on the one end are those motivated by altruism and thus don't seek to break even nor post a positive financial return; while on the other end are those that seek to post competitive rates of return perhaps based on the investors' opportunity cost of capital. In the middle are those initiatives that merely break even, or might offer investors slightly lower rates of return compared to other potential investments.

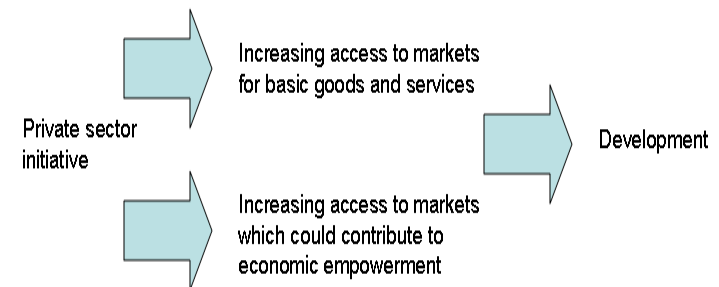
Figure 2



Is the initiative associated with a strong human development impact?

Initiatives by private actors could make markets more inclusive for the poor in at least two ways. First, these could increase the poor's access to markets for basic goods and services, including education, food, healthcare, housing, water and sanitation. Second, these initiatives could also help increase the poor's access to markets that could contribute to their economic empowerment, including, for example, markets for financial services as well as markets for things that the poor produce (agricultural markets) or where the poor could participate in as input providers (labor markets).

Figure 3



II. Towards a Typology of Innovations

The initiatives that have been selected for analysis in this paper are listed in annex table 1 and profiles for twenty of the initiatives are contained in the annex to this paper. These initiatives help illustrate different possible levels at which markets could be made more inclusive for the poor, including examples at the global level (e.g. global markets for insurance and reinsurance and pharmaceuticals) and at the national level (e.g. national markets for ICTs, financial services and housing). These initiatives also help demonstrate how innovations are being deployed in different sectors, including agricultural production, health, housing, financial services (including credit, savings, insurance and money transfer services), ICTs and water.

This section first elaborates on some of the barriers to market inclusiveness that the initiatives discussed in this paper had to overcome. This is followed by a discussion of the innovations typology.

Barriers Preventing Markets from being Inclusive

A close examination of each initiative reveals that they entail the use of innovations in order to overcome barriers (sometimes multiple barriers simultaneously) to greater market inclusiveness. In particular, the innovations to be discussed in this section seem to address three main types of barriers, relating to a) the characteristics of the different stakeholders and their environment; b) market failures; and c) government failures (see table 2).⁸ These categories are not necessarily mutually exclusive, and some of these barriers are clearly related. For instance, low and irregular income flows, a common characteristic for most poor people that prevents them from undertaking lumpy consumption or investments, is a binding constraint only to the extent that credit markets are missing or inaccessible. In addition, in areas such as education, healthcare and credit which are rife with various forms of market failures, public sector intervention in some cases has compounded these challenges with government failures. A careful elaboration of each of these main categories of barriers could help to highlight these different connections.

⁸ Similarly, Devarajan and Kanbur (2006) developed a framework for scaling up innovative initiatives for poverty reduction based on a concept of three types of constraints: market failures, government failures and civil society failures.

Characteristics of different stakeholders and their environment

Markets thrive (or malfunction) due to the actions of various stakeholders, spanning many individual consumers and producers (including business), as well as certain types of non-market actors such as civil society and government. The characteristics of these stakeholders could serve as constraints to making markets more inclusive for the poor.

A first set of stakeholders is the poor themselves. About 74 percent of the world's poor live in rural areas.⁹ Because of difficult geography and their geographically dispersed locations, the rural poor are often more costly to reach by both public and private actors. Unsurprisingly, studies show that the rural poor tend to have less access to public infrastructure and certain types of social services, when compared to urban residents and/or the urban poor.¹⁰ As producers, the poor may also be shut-out (or participate at a significant disadvantage) in labor and product markets because of their lack of proximity to major domestic markets or transportation hubs for both domestic and export markets.¹¹ In addition, the poor often have low literacy and might be unfamiliar with certain goods and services, such as new technologies or financial services, which in turn might deter them from using these products. Responding to the broader challenge of illiteracy through investments in education is critical, but it will not solve the immediate problem. In some cases, a more fundamental appreciation of the usage of certain products is missing, such as an understanding of the importance of taking out insurance which might need to be carefully developed (UNDP 2007).

The poor's low income, hence limited purchasing power, also makes it unlikely that they are able to send the normal price signals that business actors could then respond to. There is a challenge to find innovative ways to make the pricing of goods and services more affordable for the poor, and this is a process of discovery that may not necessarily be prompted by the normal market price signals. In addition, many of the poor have income flows that are irregular and often unpredictable, and they are also vulnerable to different types of shocks which add to their income volatility. These factors combined

⁹ More precisely, Chen, Ravallion and Sangraula (2007, pp.38-39) note that the share of the rural poor of total (global) poor is 73.8 percent based on the definition of people living on less than \$2.15 (1993 PPP) a day; and 75.8 percent based on the definition of people living on less than \$1.08 (1993 PPP) a day, drawing on their latest available estimate which is for 2002. While these authors find that there are marked differences in the "urbanization" or "ruralization" of poverty across regions, they also conclude from the available evidence that a majority of the world's poor will live in rural areas for many decades to come.

¹⁰ The World Bank's Rural Access Index (RAI) for 178 countries indicates that over one billion (31 percent) of the world's rural population (98 percent of them living in developing countries) do not have adequate access to transportation, i.e. where access is defined as being within 2 kilometers of an all weather road as an approximation (see www.worldbank.org/transport/transportresults/headline/rural-access.html). Also, 30 percent of the population living in rural areas in developing countries in 2004 lacked access to improved drinking water sources (as opposed to only 8 percent in urban areas). Furthermore, 67 percent of the rural population in those countries did not have access to an improved sanitation facility—compared with 27 percent of the urban population (UNICEF 2006, p.32).

¹¹ For instance, Gallup, Sachs and Mellinger (1998) find that geographic factors—like location and climate—strongly influence income levels and income growth through their effects on transport costs, disease burdens and agricultural productivity amongst others.

could serve to exclude the poor from consuming most goods and services that are designed, produced, marketed and sold with high- and middle-income consumers in mind (e.g. people with high and stable income flows). Innovations such as those that entail lower and more flexible pricing strategies could help overcome these types of barriers.

Business actors are another important set of stakeholders. Especially when they are not from the immediate environment of the poor communities, they could often face analogous forms of “illiteracy and unfamiliarity” in conducting business in low-income environments and in addressing the specific demands and needs of the poor. As already noted, part of the reason is that the poor—due to their obviously low income—are not able to send relatively strong demand signals to business actors, who may focus marketing and product development predominantly on middle and higher-income market segments of the population. Nevertheless, in the case of certain markets, this obstacle may be more perception- rather than reality-based, as it has been shown from anecdotal and empirical evidence that the poor in many countries could constitute a significant market for certain goods and services (Hammond and others 2007; Prahalad 2005). Hence, it is also critical to address these business sector knowledge gaps through a variety of means, which may include taking steps to expand awareness, undertaking changes in corporate mindset (i.e. that with the right business model, business in low-income markets could be profitable and development friendly) as well as providing more formalized education not just in the corporate setting, but also in academia, where many potential business actors are trained.¹²

Market failures

Market failures could also cause markets to malfunction—in many cases to the detriment of its inclusiveness for the poor. Imperfect competition, incomplete markets, imperfect information, unemployment and other macroeconomic disturbances, as well as challenges related to public goods and managing externalities are considered common forms of market failures. As indicated by the first fundamental theorem of welfare economics, there is a set of conditions wherein markets could function in a way that reaches Pareto optimum (i.e. No one could be made better off without making anyone else worse off). Many of these conditions, however, seem particularly inapplicable in a developing country environment, where, among other features, some markets which are required by the theorem, such as credit and insurance markets for example, are largely missing. Further linked to this first aspect, there is also imperfect information, and its effects are exacerbated by the lack of market-underpinning institutions such as those that establish

¹² Many prominent business schools in both industrialized and developing countries have begun to introduce and strengthen curricula on social entrepreneurship and corporate social responsibility (CSR) as well as undertake other programs which are all broadly linked towards addressing this particular type of knowledge gap. For examples, the interested reader may wish to refer to the William Davidson Institute at the University of Michigan (www.wdi.umich.edu/), the Base of the Pyramid Learning Lab at Cornell University (www.johnson.cornell.edu/sge/boplab.html), the Social Enterprise Initiative at Harvard University (www.hbs.edu/socialenterprise/), and the Center for Corporate Responsibility at the Asian Institute of Management in Manila (www.rvr.aim.edu.ph/).

the use of collateral.¹³ These types of market failures—missing credit (and insurance markets) and imperfect information—are often cited among the root causes for why the poor are unable to fully participate as producers and consumers in the market economy (Yunus 1999). Low and volatile income streams coupled with limited access to credit make it difficult for the poor to make lumpy purchases for consumption or investments. The academic literature suggests that the poor sometimes find ways to cope even under this difficult environment, but as summarized in box 2, their coping strategies have limits.

Some situations involving market failures could be a direct reflection of non-inclusive markets. For instance, incomplete markets for credit and insurance for the poor is a form of market failure and at the same time itself a reflection of non-inclusive markets. For the most part, markets for credit and insurance do exist in developing countries; but these are often not geared towards serving the poor, even as they are critically important for them. In the case of credit markets, under conditions of imperfect information and high transactions costs, it is entirely possible in some instances that credit might not be available even at any interest rate.¹⁴

A particular set of market failures has to do with challenges in managing externalities, and often linked to this, dealing with problems related to providing public goods.¹⁵ Often framed under the rubric of collective action challenges,¹⁶ these types of market failures could be critically linked to the notion of inclusiveness—markets (writ large) cannot ensure the provision of the public good, or the production (reduction) of the positive (negative) externality, and in some cases, the absence of either of these could result in conditions which make markets less inclusive for the poor. For instance, underprovision of certain public goods such as law and order or a sound and fair legal system (including specific activities such as land titling) might hinder private actors from reaching out to and serving the poor. To provide a concrete case, in many peri-urban and slum areas in the developing world, the ambiguity in policy and regulation serves as a

¹³ A more complete description of this challenge is summarized in box 2 later.

¹⁴ The reason for this is that interest rates serve the dual function of being the price for credit as well as an instrument for regulating the composition of the lender's portfolio. Increasing interest rates could, at some point, change the risk composition of the lender's portfolio of lending, and increase the probability of default. (Higher interest rates could attract riskier projects.) At that point, the return from higher interest rates could be counteracted by the expected losses from higher defaults. In this case, the lender might opt instead to keep the interest rate low enough in an effort to maintain a favorable risk composition of projects, while at the same time allocating loanable funds by means other than its price (interest rate). This constitutes a failure of the credit market to clear, and credit rationing to occur with no tendency for interest rates to rise (Hoff and Stiglitz 1990).

¹⁵ Besley and Ghatak (2006) distinguish between two types of public goods: market supporting and market augmenting public goods. This paper is concerned with market supporting public goods and the latter is used by Besley and Ghatak to refer to many state interventions that make it feasible for the poor to participate in markets.

¹⁶ Externalities refer to cases in which the action of one economic agent influences the utility or production function of another and for which no mechanism for compensation exists. Public goods are sometimes argued as a special case of externalities. For further elaboration, see for instance Cornes and Sandler (1996).

strong disincentive for electricity and water suppliers in the formal sector to make investments and extend coverage in these areas.¹⁷

Box 2. How do the poor manage and cope with risks in the absence of insurance markets?

In certain cases, non-market institutions could arise, such as when family, friends and neighbors help in times of need and in the absence of insurance markets. However, if non-market actors have no more information on the individual than the market insurer, then their intervention could be harmful and even crowd out the more efficient market insurance (Arnott and Stiglitz 1988;1991). In addition, most informal risk-coping arrangements and strategies that might work well on idiosyncratic risks (e.g. self-insurance or informal community risk-sharing) are limited in their effectiveness against risks that create contemporaneous community-wide losses. For instance, the buying and selling of livestock (e.g. bullocks) is typically used as a strategy in many parts of the developing world in order to manage household assets and smooth consumption. However, common negative shocks usually result in lower incomes, and at the same time, depress returns to assets (e.g. a drought lowers both household income as well as the fertility of livestock—and in some cases causes the death of livestock). Furthermore, when poor households also unload their livestock in the markets at the same time (which occurs if they are hit by the same shock), then the terms of trade could also work against them as asset prices could collapse (Dercon 2005).

Empirical evidence also highlights the limits of the poor's informal strategies to manage and cope with risk. Examining data on adult nutrition in Ethiopia, Dercon and Krishnan (2000) find evidence that poor households are often unable to accomplish complete risk sharing, and often women in the household bear the brunt of adverse shocks, as reflected by their poorer nutrition. Furthermore, examining micro-level data for farmers in six villages in India, Rosenzweig and Biswanger (1993) find that the agricultural investment behavior of farmers with high income variability suggests that uninsured weather risk leads to lower efficiency in production and lower average incomes. Their empirical results suggest a one standard deviation decrease in weather risk (measured by the standard deviation of the timing of the rainy season) would increase average profits by up to 35 percent (ibid p.75). In part due to their limited risk management strategies, and due to the entry constraints on other more diversified income opportunities, the poor often find no recourse but to engage in low-return low-risk activities (Dercon 2005).

In addition, risk sharing strategies could hit their natural limits when certain shocks—like financial crises and other economic shocks—affect everyone in the risk pool. Carter and Maluccio (2003), for example, examine South African household panel data and find that households face limits in their ability to insure against risks related to economic shocks, notably when others in their community simultaneously suffer large losses. Furthermore, McKenzie (2003) examines the Mexican crisis in 1995 and finds that many of the typical mechanisms households use to adapt to idiosyncratic shocks are largely ineffective against aggregate shocks like financial crises. For instance, increasing labor supply (more household members working)

¹⁷ Policy and regulatory uncertainties imply financial risk and therefore restrain private sector investment in urban infrastructure in India. In the sizable urban slums many of the poor endure a miserable quality of life, with inadequate access to basic services such as water and sanitation (Vyas 2006).

and labor hours (for household members who already have work) was not widely used because the shock itself reduced the growth in labor force participation.¹⁸

¹⁸ For a review of the theoretical and empirical studies linking risk, insurance and poverty, see Besley (1995), Dercon (2005), Fafchamps (1999) and Townsend (1995). In addition, Stiglitz (1988) provides a review of how economic organization could impact development, and how it might help explain some of the challenges faced by less developed countries.

Some types of market failures could also be inextricably intertwined: the literature on the economics of information, for example, has shown how imperfect information, often leading to principal-agent problems, could in part explain why credit and insurance markets are slow to develop, most especially in low-income environments (Stiglitz 1988;1989). Different types of barriers could also have a combined detrimental effect. The effects of imperfect information, for instance, could be exacerbated by other barriers such as difficult geography (so that it would be even more costly to obtain information and enforce contracts) and the lack of market-underpinning public goods, including a system of accepting collateral.

Government failures

Government failures refer to “[...] cases where, not as a result of individual errors of judgement or lack of expertise but for fundamental, structural or other reasons, government intervention cannot produce the results at which it is aimed (O’Dowd 1978, p.360).”¹⁹ In some cases when public intervention is applied to correct market failures, government failures can occur and even compound market failures and therefore serve as an additional constraint. Political economy problems and corruption are but some examples of government failures that often compound the challenges related to non-inclusive markets.

In the case of credit markets, governments have often intervened by providing state-directed or subsidized credit to key sectors deemed important for economic strategy or in the interest of enhancing equity. Subsidies are often used to keep interest rates for poor borrowers low. However, this public intervention has its pitfalls as government subsidies can compound income distribution problems (i.e. a big part of the credit ends up in the hand of typically well-off and politically influential farmers) and can ultimately make the poor worse-off than before the intervention as the subsidized interest rates crowds out the informal credit lenders from which the poor usually obtain their credit (Armendariz de Aghion and Morduch 2005).

Corruption is another example for government failure. In the specific case of land registration, governments could fail to fully meet this function due to obsolete systems, which are often rife with opportunities for abuse. In Karnataka, India, asymmetric power relationships between farmers and bureaucrats, and imperfect monitoring made the system vulnerable to accountants charging bribes. This ultimately punished the poorest that were unable to pay the bribes (Bhatnagar and Chawla 2006). Characteristics like high illiteracy rates amongst the poor farmers and unfamiliarity with the system compounded the burden. Public sector innovations like computerization of land records in the state of Karnataka ultimately made government records more transparent and open to the public

¹⁹ The contemporary literature on government failures postdates the market failure paradigm; nevertheless economists and political philosophers have long acknowledged that government intervention was less than perfect and could have very high costs. For a detailed overview of the more recent theories of government failure, see Wallis and Dollery (1999).

which led to a substantial decrease in corruption and bribes and helped to empower small farmers.²⁰

Overcoming Barriers with Innovations

Drawing on the initiatives profiled as well as those reflected in the available literature (e.g. Aravind Eye Care System, BancoSol and Grameen Bank), table 1 presents a preliminary typology of some of the successful business strategies, and the innovations that embody these strategies which could help make markets more inclusive for the poor. Columns 1 and 2 attempt to contrast some of the features of more traditional versus innovative business strategies geared to reach the poor. Column 3 lists down examples of specific innovations falling under the latter strategies. Innovations refer to both radical and incremental changes to products (including goods and services) and processes (e.g. production, marketing, etc.), in order to help overcome some of the obstacles described above that hinder the poor from more actively participating in markets.²¹

For ease of exposition, three categories of strategies are introduced (i.e. production, distribution and marketing strategies; retail and pricing strategies; and cross-cutting business strategies) even as other possible categorizations are clearly possible and perhaps also useful. The different strategies reflected in this typology are also not meant to imply that they are mutually exclusive in practice. For example CEMEX's *Patrimonio Hoy* program applies multiple strategies simultaneously, because it includes features such as a flexible payment scheme, complete product packaging (by including training along with access to building materials and financing), tapping "soft" community networks (townspeople are hired to help market the program) as well as contracting innovations (three families typically join together for each arrangement) (Segel and Meghji 2005). Furthermore, almost all of the entries involve some kind of partnership in one way or another. This suggests that various business strategies could be used in tandem, in order to overcome, simultaneously, multiple obstacles that tend to marginalize the poor in many markets. Table 2 helps to clarify this further by illustrating how specific innovation examples help overcome certain types of barriers to market inclusiveness.

²⁰ For more information on the Bhoomi Initiative in Karnataka, see Bhatnagar and Chawla (2006).

²¹ This definition also draws on the differentiation between "inventions" and "innovations" proposed by Schumpeter (1934). He noted that an invention is an idea that might be used in production, while an innovation is the process of turning an invention into an actual product. In this paper, the term innovation is associated mainly with the features of the good or service as well as the method of providing (i.e. producing, marketing, selling, etc.) that good or service.

Table 1. Typology of Business Strategies and Innovations

Traditional business strategies	Business strategies that could improve market inclusivity	Specific Innovation Examples
<i>Production, distribution and marketing strategies</i>		
Applying skill- and technology-intensive strategies	Deskilling ^a	<ul style="list-style-type: none"> • Simplifying or standardizing procedures once handled by specialists (e.g. Aravind Eye Care System).
Stand-alone finance	Supply chain financing ^b	<ul style="list-style-type: none"> • Linking credit delivery to other products and services along the supply chain through trade finance (e.g. Pride Africa's DrumNet).
Using "brick and mortar" strategies	Leveraging "soft networks"	<ul style="list-style-type: none"> • Leveraging ICT networks (e.g. VOXIVA's Alerta platform, WIZZIT's m-banking, Globe Telecom's G-Cash, Smart Communications' over-the-air payment system, KACE's market information system). • Leveraging community networks (e.g. Grameen Village Phone ladies in Bangladesh and Uganda; WIZZ Kids in South Africa).
<i>Retail and pricing strategies</i>		
Individual consumption	Joint consumption	<ul style="list-style-type: none"> • Internet kiosks (e.g. ITC's e-Choupal).
Fixed payment	Flexible payment	<ul style="list-style-type: none"> • Pay-as-you-go (e.g. Smart Communications' pre-paid cards for mobile phones; Microsoft FlexGo). • Purchasing through savings (e.g. CEMEX's <i>Patrimonio Hoy</i> program).
Fixed pricing	Tiered pricing	<ul style="list-style-type: none"> • Differential pricing based on capacity to pay (e.g. Aravind Eye Care System, Bushnet's Ten By Ten network, Sanofi-Aventis' cheap malaria pill).
<i>Cross-cutting business strategies</i>		
	Contracting innovations	<ul style="list-style-type: none"> • Commitment mechanisms in the contract such as restrictions on access until a target date (e.g. Equity Bank's <i>Jijenge</i> savings account). • Group lending (e.g. Grameen Bank and BancoSol during their start up stages). • Index-based insurance (e.g. BASIX's index-based weather insurance)
	Dynamic incentives	<ul style="list-style-type: none"> • In microfinance, achieved by threatening exclusion of defaulting borrowers or giving borrowers in good standing access to larger loans (e.g. Grameen Bank).
	Partnering	<ul style="list-style-type: none"> • Public-private partnerships (e.g. Clinton Foundation's HIV/Aids Initiative, South Africa's four major banks' (Absa, First National Bank, Nedbank, Standard Bank) and the government owned Postbank's <i>Mzansi</i> Account). • Private partnerships (e.g. BASIX and ICICI Lombard's weather index insurance project, ICICI Bank's Cash Agent Model).
	Real options strategy ^c	<ul style="list-style-type: none"> • Using flexible business strategies with feedback mechanisms allowing rapid scaling up or down of experimental product lines (e.g. KickStart).
	Total product solutions ^a	<ul style="list-style-type: none"> • Designing "complete" products to better fit the environment of low-income markets (e.g. Motorola's Motofone F3, Prodem FFP's Smart ATMs, ICICI Bank's low-cost ATMs, credit packages that include entrepreneurship training or microinsurance, Procter & Gamble's PuR Purifier of Water).

^a See also Koch and Caradonna (2006).

^b See also World Bank (2005).

^c See also Simanis and Hart (2006).

Source: Authors' own elaboration.

Table 2. Overcoming Barriers through Market-Oriented Innovations

Barrier	Low-income market strategy	Production, distribution and marketing strategies			Retail and pricing strategies		Cross-cutting business strategies			
		Deskilling	Leveraging "soft networks"	➔	Flexible payment	➔	Contracting innovations	Dynamic incentives	Partnering	Total product solutions
Characteristics of different stakeholders and their environment										
The poor: •Low and irregular income streams •Etc.	•Aravind Eye Care System (cataract surgery)	•WIZZIT (m-banking) •KACE (market information system) •WIZZIT (WIZZ Kids)		•Smart Communications (pre-paid cards) •CEMEX (Patrimonio Hoy)				•Clinton Foundation's HIV/AIDS Initiative (public-private partnership)	•Prodem FFP (Smart ATMs) •Morofone (Motofone F3) •CICI Bank (low-cost ATM)	
The business actors: •Knowledge gaps of the low-income market •Etc.		•WIZZIT (WIZZ Kids) •Grameen Phone (Grameen Village Phone ladies)								
Market failures										
•Incomplete markets and imperfect information •Etc.						•BASIX (index-based weather insurance) •MFIs (joint lending products)	•MFIs (access to higher loan amounts for good borrowers; threat of exclusion for bad borrowers)			
•Collective action challenges (e.g. public goods, externalities) •Etc.								•Clinton Foundation's HIV/AIDS Initiative (public-private partnership)		
Government failures										
•Political economy problems and corruption •Etc.						•MFIs (joint lending products)				
	↓									

Production, distribution and marketing strategies

The ways private actors produce, distribute and market goods and services could be re-tooled using innovations that involve more simplified and less skill intensive approaches as well as by leveraging ICTs and community networks in conjunction with high-volume low-margin strategies to serve the poor.

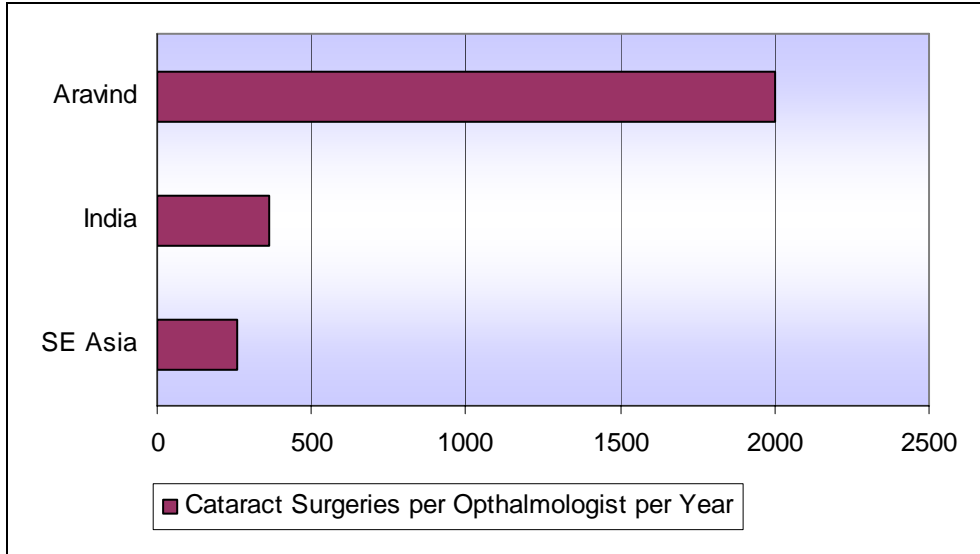
A) Deskilling

Instead of applying “skill- and technology-intensive strategies”, “deskilling” has been used to cut down on costs, increase productivity and improve financial viability. This strategy has featured in some of the “high-volume low-margin” business strategies geared towards reaching the poor. Through deskilling, a procedure once handled by specialists is simplified or standardized, thus enabling a private actor to supply more of the good or service at a lower average cost. Hence, this particular innovation is useful to help adjust to the low and irregular income streams of the poor. One possible example for a deskilling innovation is Aravind Eye Care System in India.²² It reduced average costs for eye surgeries by using ophthalmic paramedical staff to do all the preparatory and postoperative work on each patient, allowing ophthalmologists to perform an increased number of surgeries per day. Aravind’s ophthalmic surgeons work on two operation tables alternately. A team of paramedics and junior doctors prepare the surgery (they wash the eye, put the suture, give the injection etc.). The surgeon conducts the surgery and moves on to the next table. Thanks to the efficient division of labor, surgeons perform 10-minute operations (i.e. the industry standard is 30 minutes) (Shah and Murty 2004, p.33).

As illustrated by figure 4, Aravind’s ophthalmic surgeons are over five times more productive than general ophthalmic surgeons in India and even eight times more productive than ophthalmic surgeons in Southeast Asia. Today, Aravind is the single largest provider of eye surgeries in the world with plans for further expansion.

²² For more information on Aravind Eye Care System, see www.aravind.org and Koch and Caradonna (2006).

Figure 4. Comparison of Illustrative Surgeon Productivity



Source: Shah and Murty 2004 (p.33).

B) Leveraging soft networks

Leveraging “soft networks” appeared as a lower-cost alternative to more traditional “brick and mortar” strategies typically used in middle- to higher-income markets.²³ In a number of business models, these have served to help dramatically lower the costs of the final product, thus helping to address the twin constraints of low and irregular income. These soft networks seemed to appear in two contexts: ICT networks; and community (or social) networks.

Leveraging ICTs. VOXIVA, an international for profit organization, leveraged existing telephone lines and internet servers in order to create a shared information platform, called Alerta, in Peru. Alerta allows health officials and practitioners in Peru to share up-to-the-minute information on health issues, thus allowing them to respond faster to health emergencies and better serve many remote rural communities (comprised for the most part by the poor) (Pahalad 2005). This innovation therefore allows the public sector to provide better and more cost-effective health monitoring services to remote rural communities, notably where geography used to be a binding constraint to access.

Other examples for leveraging ICT networks include recent innovations by Globe Telecom and Smart Communications, the two largest telecommunications companies in the Philippines. Globe Telecom offers a service which allows customers to send and receive money via a mobile phone. The service is called G-Cash and facilitates money remittance, and many other transactions with just a text message or SMS. Through this

²³ It must be noted that even in markets for middle- and higher-income people, numerous examples of leveraging soft networks, notably ICT networks, could be found, including those in the area of E-commerce.

innovation, the cost for money transfer decreases substantially and access to transfer services for remittances is extended to geographically remote areas.²⁴ On the other hand, Smart Communications introduced an over-the-air payment system for mobile phones which has many advantages compared to traditional payment systems. It allows a retailer to load a customer's airtime electronically and therefore helps minimize physical product distribution costs. Also, product distribution becomes faster, more efficient and more secure and enables consumers to reload and purchase airtime even in remote rural areas (Anderson and Billou 2006). Leveraging ICT networks offers a range of possibilities to improve access to money transfer services. Table 3 provides a brief description of a selection of mobile and card-based technologies for remittance transfers and payments.

In addition to enhancing access to money transfer services, leveraging ICTs could also help enhance access to banking services. Mobile phone banking (or m-banking) is now being offered in a number of countries; and WIZZIT Bank in South Africa is one example. Table 4 shows how an account offered by WIZZIT costs less than the lowest cost full-service bank accounts offered by the Big 4 (i.e. South Africa's four major banks Absa, First National Bank, Nedbank and Standard Bank), and *Mzansi* accounts. WIZZIT charges about \$70 per year. Ivatury and Pickens (2006, p.4) note that this amount is about 2 percent of the estimated average personal income per annum for customers surveyed. Referring to FinMark Trust estimates (Porteous 2004) Ivatury and Pickens point out that 2 percent of personal annual income is the most low-income people can afford to spend on banking services. However, only the account offered by m-banking provider WIZZIT falls below this threshold whereas traditional accounts offered by the Big 4 and *Mzansi* accounts surpass the threshold. Even compared to other m-banking providers in South Africa, WIZZIT offers competitive prices.²⁵

In another example from Kenya the private sector firm Kenya Agricultural Commodity Exchange Limited (KACE) developed an innovative market information system (MIS) which harnesses the power of modern ICTs to empower smallholder farmers to negotiate more efficiently and participate more successfully in markets (Mukhebi 2004). The MIS enables farmers to access market information (e.g. via mobile phone and internet) and advertise their stocks for sale or their demands for farm inputs, such as fertilizers and seeds, using KACE's website's sell and bids function.

Leveraging Community Networks. Marketing strategies built on leveraging community networks could also be considered as examples of leveraging soft networks. These types of innovations could not only help lower the costs of marketing products; they could also tap the comparative advantage on information that community members might have on fellow-community members. This is particularly useful to help overcome some of the knowledge-gap related constraints faced by business actors that are largely external to the low-income market environment. For example, instead of using mass media advertising, such as TV commercials, South Africa's mobile banking provider WIZZIT markets its services through more than 2,000 "WIZZ Kids", who are typically

²⁴ See http://cwhonors.org/case_studies/GlobeTelecom.pdf (accessed March 14, 2007).

²⁵ See Porteous (2007) for an evaluation of WIZZIT's potential to increase access to financial services for the unbanked in South Africa.

young individuals from the lower income population who know the target market well (Ivatury and Pickens 2006, p.3). Educating potential customers about WIZZIT, the WIZZ Kids earn a commission for each new customer.²⁶

An important additional aspect in leveraging community networks lies in the opportunity to integrate the poor on the supply side—that is, not only serving them better, but also offering them employment (as with the WIZZ Kids) as well as possible business opportunities. As an example of the latter, GrameenPhone, for instance, provides women entrepreneurs in rural villages in Bangladesh with the opportunity to earn a living from retail access to phone services in the villages where they live. It was launched in 1997 and it has been reported that by 2004, 75,000 “phone ladies”, each generating average additional income of some \$1,000 per year, were providing phone service access to about half of the country’s rural population.²⁷

Table 3. Mobile and Card-Based Technologies for Remittance Transfers and Payment

<p>Celpay</p> <p>Description: SIM-based mobile phone payment system</p> <p>Countries: Zambia, Democratic Republic of Congo</p> <p>Webpage: www.celpay.com</p>	<p>A Celpay SIM card provides the Celpay menu. Funds are deposited in a Celpay account, using the cell phone to transfer from a bank account or, if the user is unbanked, depositing cash at a partner bank. Purchases can be made via SMS by entering the amount to be paid into the phone and authenticating the transaction with a PIN. The service provider instantly transfers the money to the merchant’s Celpay-enabled account. Merchants pay a commission of 3.4 percent of the total transaction amount.</p>
<p>G-Cash</p> <p>Description: Mobile phone-based money transfer service provided by Globe Telecom (GTel)</p> <p>Countries: Philippines, in partnership with Bahrain, Hong Kong, Italy, Singapore, Taiwan, and U.K.</p> <p>Webpage: www.myglobe.com.ph/gcash/about.asp</p>	<p>GTel mobile phone subscribers register via text message. Funds can then be deposited and cashed at G-Cash affiliates and GTel offices throughout the network. Funds transfers (from sender to recipient and from G-Cash account to payout in cash) are communicated via text message. A 1 percent processing fee is charged both to deposit and to receive funds (i.e. 2 percent total for a remittance transfer).</p>

²⁶ Other examples of tapping community networks could be found in the microfinance area, where the literature suggests that group-based lending activities, under certain conditions, could help improve repayment rates as well as lower some of the costs of the microfinance institutions. Hence, this example which is also indicated in the separate entry on “contracting innovations” suggests that these innovation categories are not mutually exclusive as noted in the introduction to this section.

²⁷ Figures are from Simanis and Hart (2006, p.45).

<p>SMART Money</p> <p>Description: Mobile phone-based SMS money transfer service and linked debit card</p> <p>Countries: Philippines and 17 partner countries—in the future, users will be able to pay off micro loans through a linkage with the Rural Bankers’ Association of the Philippines</p> <p>Webpage: www.smart.com.ph/smart</p>	<p>SMART Money is provided by SMART, a mobile phone company in the Philippines, in partnership with MasterCard. The service enables users to transfer money from a bank account to a SMART Money account. Subscribers can then use a SMART Money card like a debit card to pay for goods and services at a network of retail stores and restaurants, or to make withdrawals from ATMs. The service also allows users to transfer cash from one SMART Money card to another via SMS. For remittances, workers outside the Philippines can deposit funds at any of the phone company’s remittance partners in 17 countries. A 1 percent processing fee is charged.</p>
<p>No Borders</p> <p>Description: Stored value card</p> <p>Countries: Currently pilot testing in Ecuador, El Salvador, and Mexico; planned expansion to Asia, Caribbean, East Africa, and South/Central America; signed alliance agreement with Banco Solidario to link payout locations in Bolivia, Ecuador, and Peru</p> <p>Webpage: www.no-borders.com</p>	<p>Funds from SVA (closed system) cards can be transferred in real time to bank-issued debit (open system) cards, which can be used for ATM withdrawals, signature-based purchases, and card-not-present transactions. Also allows for direct deposit of payroll checks and for bill payment without a bank account.</p>
<p>NTT-DoCoMo i-Mode FeliCa</p> <p>Description: Cell phones with embedded multi-application smart chips</p> <p>Countries: Service initiated by DoCoMo in Japan in summer 2004</p> <p>Webpage: www.nttdocomo.co.jp/english/service/imode/make/content/felica/</p>	<p>Phones are loaded with cash deposits at terminals. The phones can be used as pre-paid electronic cash, credit cards, travel tickets, access control cards, authorizations to access corporate networks, or entry cards such as for club memberships or loyalty programs. Selected information—the remaining electronic cash balance, for example, or transaction records—can be displayed offline on the cell phone. Transactions are completed at POS terminals that deduct the amount of a purchase or read other information from the embedded chip.</p>

Source: UK DFID and USAID 2005 (p.2).

Table 4. Cost Comparison of WIZZIT with Alternative Banking Services

	Transactions WIZZIT Users Conduct	Same Transactions w/ Big 4 Full- Service Account	Same Transactions with Mzansi
	US\$	US\$	US\$
Bank fees per month	5	7	6
Airtime fees per month	0.3	0	0
Transport to bank per month	1	1	1
TOTAL MONTHLY COST	6	9	8
ANNUALIZED COST	70	103	94
Annual cost as % of annual income	2.1%	3.1%	2.8%

Source: Ivatury and Pickens 2006 (p.4).

C) Supply chain financing

Linking credit delivery to other products and services along the supply chain through trade finance can benefit all the economic actors involved in the supply chain. Smaller actors—for example smallholder farmers—are often unable to access much needed working capital as banks and microfinance organizations face high transaction costs and default rates when offering credits to smallholder farmers. If functioning well, the supply chain can overcome these disincentives and enable each participant to access credit either directly from a financial institution or indirectly from another participant in the supply chain who benefits from lower transaction costs. Linking supply chain financing to additional services like marketing services and input supply can further enhance the borrower’s ability to repay the loan (World Bank 2005). Thus, this particular strategy could help to address constraints related to missing credit markets (i.e. a critical market failure noted earlier).

In Kenya, the NGO Pride Africa implemented DrumNet, an emerging network of rural area farm business support centers delivering agricultural extension, credit, and marketing services to smallholder agricultural farmers. The two main components of DrumNet’s program are first, a cashless microcredit program that links commercial banks, smallholder farmers, and retail providers of farm inputs and second, market services offered through an integrated marketing and payment system with large-scale buyers, farmers, transporters, and field agents. DrumNet addresses both credit and market limitations by integrating the two services in order to increase farm productivity and the efficiency in the overall business chain. All elements of the supply chain, namely farmers, banks, inputs providers, and exporters are key participants in DrumNet’s program.

Retail and pricing strategies

There may be a number of ways to stretch the poor's purchasing power by adjusting retail and pricing strategies—notably through joint consumption, flexible payment schemes, and tiered pricing—to better fit a large consumer base with individually low and volatile income streams. A special case of joint consumption, group lending, could also help tackle principal agent problems related to imperfect information.

A) Joint consumption

Whereas traditional business strategies tend to focus on reaching single consumers, a number of business models geared to reach the poor involve the provision of goods and services to groups (or even entire communities). ITC's internet kiosks serve as an example of joint consumption. The "e-Choupals", as the internet kiosks are commonly called in India, serve both as a social gathering place for exchange of information and an e-commerce hub. The internet-ready computer, typically housed by one farmer, serves an average of 600 farmers in 10 surrounding villages within a radius of about five kilometers (Annamalai and Rao 2003, p.1). By spreading the costs of maintaining internet access in the village, farmers are better able to maintain access to market information, which in turn is expected to increase their bargaining power.

B) Flexible payments

The poor typically have low and variable income streams and are unable to undertake lumpy purchases. In the absence of access to credit, typically large up-front cost of many goods and services—including productivity enhancing investments like tractors or irrigation equipment for farmers—put them out of reach of the poor. Various flexible payment arrangements could help solve this cash flow problem. Examples for flexible payment innovations are microleasing and pay-as-you-go solutions (e.g. Smart Communications' affordably priced prepaid cards for mobile phones in the Philippines and also the Microsoft FlexGo prepaid scheme²⁸ for obtaining a computer which is currently being tested in Brazil). "Purchasing through savings" is another innovation which CEMEX uses in its Patrimonio Hoy program in Mexico. Through a well-planned savings program Patrimonio Hoy allows low-income families to obtain access to services, cement and other building materials on credit (Segel and Meghji 2005). Put differently

²⁸ Microsoft began testing the pay-as-you-go model for PC ownership in Brazil in 2005. Consumers pay a portion of the upfront cost to bring home a computer running Windows XP Home. They pay off the remaining balance by purchasing prepaid cards from local vendors that activate the machine for a defined amount of time. If time runs out on the PC, it enters a "reserve tank," or limited access state, until additional time is added. Once the computer is paid off, the metering technology is deactivated and the consumer owns the machine outright and could use it in an unlimited manner. For more information on Microsoft's FlexGo prepaid scheme, see www.microsoft.com/presspass/press/2006/may06/05-21EmergingMarketConsumersPR.msp.

(and perhaps more creatively) the flexible payment scheme allows them to “purchase their house in installments”.²⁹

C) Tiered pricing

Differential or “tiered” pricing is another strategy used to design retail and pricing strategies that better cater to low-income markets. So far, it seems to have proved successful for Aravind Eye Care System, which charges services based on ability to pay (with the poor paying nothing) (Shah and Murty 2004). Bushnet, a limited liability company in Uganda offering ICTs-related services follows a similar tiered pricing approach. For access to its High Speed Data Network *Ten By Ten* Bushnet charges those that can afford it (e.g., financial and commercial enterprises) \$200 per month but charges non-commercial institutions like schools, clinics and local community centers only \$50 per month (Bushnet 2004, p.3). Plans are also underway to use tiered pricing in Sanofi-Aventis’ initiative to sell the branded version of a new, easy-to-take pill to treat malaria, called Coarsucam, in poor countries. Sanofi announced that it will meet with pharmacists’ organizations in poor countries and give them incentives to sell Coarsucam at two different prices—at less than \$1 for low-income customers and \$3 to \$4 for those who can afford it (McNeil 2007).³⁰

Cross-cutting business strategies

Beyond production, distribution and marketing, as well as retail and pricing, a number of more general and cross-cutting business strategies also seem to work well to improve market inclusivity. These strategies include: spanning contracting innovations, dynamic incentives, partnering, real options strategy and total product solutions. These strategies help manage and minimize risks for actors serving low-income markets, they help adapt products to the poor consumer’s needs, behavior and context, and they contribute towards improving the financial viability of serving the poor.

A) Contracting innovations

Contracting innovations could come in different forms. One particularly well-studied example is that of group lending, which, for a time, was used as a strategy to quickly achieve scale economies by some microfinance institutions (MFIs) like Grameen Bank of Bangladesh and BancoSol of Bolivia. It also had the helpful by-product of increasing repayment rates among borrowers. Group lending implies that borrowers are responsible for each other, and it is this joint-liability of members that changes the behavior of borrowers, incentivizing them to screen out bad credit risks and effect peer-pressure to enforce payment. This therefore could help address some of the costly by-products of

²⁹ It must nevertheless be noted that offering more flexible payment terms does not necessarily make the product cheaper. It would be important to analyze the cost of the flexible payment scheme as a form of financing, in order to ascertain whether the implicit rate being offered is competitive.

³⁰ The literature on price discrimination is extensive, so this is one of the examples of older “innovations” that have been used to increase penetration into low-income markets.

imperfect information, including the costs of screening, monitoring and contract enforcement, thus making serving the poor a somewhat more financially viable proposition for the lender (box 3).

Box 3. Group Lending to Serve Low-income Markets

Theoretical and empirical advances in the literature on the economics of information have shed more light on some of the barriers that have hindered the development of credit and insurance markets. Focusing on credit (but just as easily applied to insurance), the literature suggests that the providers of credit encounter agency-related problems on several levels (Ghatak and Guinnane 1999; Hoff and Stiglitz 1990):

- **Screening.** *Ex ante*, the creditor might not be able to separate the good credit risks from the bad;
- **Monitoring.** During the contract, the creditor faces challenges related to incentives—she/he cannot ensure that borrowers are making the full effort to realize the project’s full returns; and,
- **Enforcement.** *Ex post*, the creditor might find it difficult to verify the exact magnitude of returns from the project.

Imperfect information implies transactions costs in screening, monitoring and enforcement of credit contracts. These are some of the costs that make providing financial services (e.g. credit and insurance) to the poor in many cases not financially viable. There are several potential avenues to respond to the challenges related to imperfect information.

- **Buy information.** On the part of the lender, buying information is one obvious approach. However, the high cost of acquiring information could result in prohibitively priced products, or equivalently, products that are not financially viable to sell to the poor. In many cases this results in little or no access by the poor, who, because of low and volatile income streams, also tend to need credit the most.
- **Direct credit.** Taking the existing institutional environment as a given, another option is for the state to direct credit to the poor. This could be done in a number of ways, including by offering subsidized credit, such as through government lending agencies. However, this has been difficult to sustain in many countries that have tried this strategy. Among the main reasons for this are that public sector actors also face many of the same information imperfections that market actors face; and add to this, there is also the possibility of government failure, such as those resulting from politicization of the allocation of credit. In some cases, such as in India, borrowers held the view that loans would actually be transformed into grants since politicians tended to vie for votes by promising to forgive debts if elected (Bell 1990). The experience of many countries with state-directed credit seems to indicate high default rates and ineffectiveness in reaching the poor. In many cases, wealthier borrowers tend to capture most of the benefits (Armendariz de Aghion and Morduch 2005; Bell 1990; Siamwalla and others 1990).
- **Facilitate the use of collateral.** Collateral might help mitigate some of the effects of imperfect information. For example, collateral could be used to minimize the effects of moral hazard (i.e. by using collateral as a way to help ensure that the loan is used in the best way as

well as repayment of the loan once the project is completed). However, the poor typically have very few assets, and what assets they do have they are usually unable to pledge as collateral. In the case of landholdings, for example, the poor often do not have formal titles for these, and some have since referred to these types of assets as “dead capital” (De Soto 2000). Hence, changing the institutional environment by titling land and other assets, rewriting bankruptcy codes, and reforming the legal system, offers another possible set of alternatives. However, these types of institution-building typically take time to bear fruit. And even in cases where the poor do have titling, inefficient judicial systems could nevertheless make foreclosing costly. Add to this the political constraints that might be present in some contexts to repossess the poor’s already meager assets. All these factors limit the effectiveness of these types of assets as collateral.

- ***Leverage innovations to lower costs and improve financial viability.*** A final alternative, which is not necessarily mutually exclusive with the last option described, is to try and overcome the most binding constraints and barriers in the existing environment by using product and process innovations. One such example is that of group lending, which could take a number of forms, but the most famous one perhaps is the Grameen- and Accion-style lending to self-selected groups of three to nine borrowers.³¹ Essentially, this particular innovation contributes to financial viability in at least two ways. First, borrowers will typically belong to the same community, and because community members know more about each other than an outsider like a financial institution, group lending enables the creditor to deal with imperfect information by tapping borrowers’ comparative advantage on information on their fellow borrowers, and transferring to them some of the screening (if groups are formed voluntarily) and monitoring costs.³² In addition, while a financial institution typically cannot apply financial or non-financial sanctions against poor people who default on a loan (and as argued earlier, one cannot expect state actors to do the same in many cases), group borrowers who might belong to the same village, or are neighbors, relatives or friends, may be able to impose effective non-financial sanctions on each other at low cost (Ghatak 2002; Ghatak and Guinnane 1999).

There is evidence to suggest that group lending strategies have a positive impact on the financial self sustainability of lending operations of MFIs. For instance, Cull, Demirguc-Kunt and Morduch (2007), examine a data set comprised of financial information on 124 microbanks in 49 countries, and they find that lenders that do not use group-based methods to overcome incentive problems experience weaker portfolio quality and lower profit rates when interest rates are raised substantially. In addition, social connections seems to be a key ingredient in the success of group lending.³³ Karlan (2007), for example, exploits the quasi-random group formation in FINCA, a

³¹ The Grameen model of group lending was developed by Muhammad Yunus in 1976 in Jobra, Bangladesh. It involves lending to groups of five individuals who are jointly liable for loans made to group members. First developed in 1984 in Bolivia by John Hatch, Village banking is an alternative modality of group lending, which involve large groups of 15 to 30 people who are given a single loan to manage and on-lend to members. It must be noted that the antecedents of group lending could be traced at least as far back as the 19th century, when German credit cooperatives (and some imitators in other European countries) operated in very similar ways. See Ghatak and Guinnane (1999) for a discussion of this latter point.

³² Even with this transfer, it has been shown, theoretically, that peer monitoring could still be welfare enhancing for the borrowers (Che 2002; Stiglitz 1990).

³³ Social connections seem to be a central theme in most explanations of how joint liability might work to help address problems such as adverse selection, moral hazard and contract enforcement. There are several theoretical models that illustrate how joint liability helps to address the problems associated with providing

microfinance institution in Peru, in order to examine whether groups that are more connected socially (as indicated by geographic proximity and cultural similarity) also tend to perform better in the form of higher repayment rates and savings.³⁴ Karlan finds that stronger social connections within groups are associated with higher repayment rates and savings. He also finds direct evidence of monitoring and enforcement, as reflected by group members' knowledge of each other's default status and deterioration of relationships (e.g. indicated by responses on friendship, trust, speaking outside meetings). This provides some evidence of how social connections may be critically connected with better loan monitoring and enforcement within groups, which in turn could be linked to better performance.

Group lending has since been applied by microfinance institutions across the world, and there is a wealth of anecdotal evidence suggesting how this contracting innovation could help create financially viable credit markets even in environments where some market failures—notably information imperfections—could be acute (see Armendariz de Aghion and Morduch 2005; Roodman and Qureshi 2006; Schreiner 2003). It is also interesting to note that, over time, some of the larger MFIs like Grameen Bank of Bangladesh and BancoSol of Bolivia that used to rely on group lending strategies, have since diminished the use of this tool. As they got to know their clients, and as many of the latter established good credit histories (solving part of the information related problems), and as they have had to evolve with the changing market environment (and in some cases respond to political and economic shocks), a number of MFIs have also evolved, in part reflected by a transition out of group lending into more individual lending based products.

Contracting innovations could also come in the form of commitment mechanisms embedded in a contract, in order to help make the product more useful for the poor. An example is the attachment of restrictions on access to savings until a target date, or until an amount is achieved, which is common in the microfinance sector, and helps the poor fight the temptation to draw on their savings prematurely.³⁵ This helps make the product more financially viable and also enhances its positive impact, notably by helping to increase poor households' savings. Equity Bank in Kenya, for instance, provides a personalized contractual savings product with an emergency loan facility attached called *Jijenge* savings account. Customers in the lower-income market segments define the length of the contract and the periodicity of the deposits. If taking out longer-term contracts customers are offered a premium rate but penalties are imposed for premature

credit to the poor: by helping solve moral hazard problems (Stiglitz 1990; Banerjee, Besley and Guinnane 1994); by helping to address limited contract enforcement by using social sanctions (Besley and Coate 1995); and by helping to mitigate adverse selection problems (Ghatak 1999).

³⁴ A typical econometric problem with trying to estimate the effects of social connections on group performance indicators (including repayment rates) has to do with selection and endogeneity. Those with stronger ties may self-select into groups, and they may tend to share some unobserved other characteristics which may also affect performance (as well as predisposition to form a group). One way around these issues is to leverage the quasi-random group formation arrangement in some MFIs (such as in FINCA-Peru) as this provides a natural experiment wherein some groups are endowed with stronger social connections than others.

³⁵ Based on survey data for a number of developing countries, Banerjee and Duflo (2007) note that the poor constantly face the temptation to use up any small amount they are able to save and therefore might be expected to have a high demand for savings, if only as another means to help smooth consumption when unexpected shocks affect their income.

withdrawals from the account. On demand all Jijenge savings account holders have guaranteed, immediate access to an emergency loan of 90 percent of the value of the amount in their Jijenge savings account (Wright 2005).

Recent studies using empirical methodologies based on randomized controlled trials provide some evidence on the effectiveness of commitment mechanisms. For instance, Ashraf, Karlan and Yin (2006a; 2007) use data on selected rural households in the Philippines and study the effect of a commitment product where savers commit to restrict access to savings accounts until a specific date or until they had reached a pre-committed balance. They find positive impacts on the empowerment of women in the households studied, particularly for those women who have below median decision-making power in the baseline. They also find that this leads to a shift towards female-oriented durable goods (e.g. sewing machines, electric irons, kitchen appliances, stoves, etc.) purchased in the household. These same authors, in a follow-up study (AKY 2006b) assess the effect of another technique to attract savings, door-to-door collection of savings, which do not only reduce transaction costs, but might also provide savers with a necessary commitment device. The authors find that among those who did take up this service, savings increased substantially.

BASIX's weather index insurance product might also serve as an example of a contracting innovation. Related problems of asymmetric information and moral hazard mark insurance markets in general. Traditional crop insurance products (in which insurers have paid claims based on actual losses of households, businesses and farmers) have often failed in many countries mainly due to the high costs associated with settling claims. However, index insurance contracts, like the ones offered by BASIX, are different from more traditional insurance contracts because they combine a number of useful features.

- First, traditional crop insurance programs typically require significant monitoring and farm-level inspection to confirm crop losses. Index insurance offered by BASIX requires relatively less administrative and operational costs (e.g. the costs that need to be borne by insurers if they are to overcome imperfect information) due to the simplicity of the product. Its payout is based on rainfall levels (i.e. it is triggered when rainfall levels exceed a certain amount pre-specified in the contract) and no longer on information specific to the farmer covered.
- In addition, traditional crop insurance programs often suffer from adverse selection (i.e. those who know *ex ante* that their risk is high are also most likely to seek insurance) and from moral hazard problems (i.e. *ex post*, after insurance is offered, the insured may change their behavior in ways that increase their risk). However, one of the chief benefits from weather index insurance is that moral hazard problems and instances of claims manipulation are minimized to the extent that farmers have no control over what triggers the insurance (i.e. as opposed to traditional insurance products whereby a farmer's effort and output is linked to what triggers the insurance).

- Adverse selection is also minimized to the extent that the contracts and indemnity payments are the same for all buyers per unit of insurance (Skees, Varangis, Larson and Siegel 2005). Table 5 summarizes the key differences between weather index insurance and traditional crop insurance, highlighting how the former implies simpler and less costly underwriting and administrative functions and is thus a “better fit” for the kind of high- volume low-margin business model required to serve the poor.³⁶

Table 5. Comparison of Indicative Expected Cost Levels Involved in Underwriting and Administration Functions of Traditional and Index Insurance

Function	Traditional	Index	Comment
Establishing insured yield	Key function: Insurers must establish farm or district level yield.	Not required: Use an index as an agreed basis for payout.	Individual farmer yield setting not feasible in small scale farming.
	Cost: High	Cost: Low	
Underwriting	Needs assessment of individual risk or localized district risk.	Not required, but insurers need to screen clients to check for insurable interest.	Product must be adapted to local weather situation to minimize basis risk.
	Cost: High	Cost: Low	
Policy Sales	Sales process requires high skills since it involves underwriting decisions.	Sales process also requires good product knowledge. No major underwriting decisions in sales process.	Education and extension remains important for any crop or index product.
	Cost: High	Cost: Medium	
Paperwork/IT	Generally complex.	Simplified certificates or coupons.	A key to cost reduction is effective IT in head office and districts
	Cost: High	Cost: Medium	
Field inspection	Check for crop emergence.	Not required.	The insurer should monitor crop growing

³⁶ Government interventions will likely be critical for infrequent, high-loss events; but a growing number of studies suggest that it might be possible to leave to the private insurance markets the development of insurance products for more frequent risk events, notably if the transactions costs for these insurance products could be minimized. Furthermore, it might also be possible to use new insurance instruments, such as weather index insurance, to try and complement mutual insurance arrangements among groups of farmers, thus enhancing the viability of these schemes even in the face of risks that affect the entire group. For an extended discussion of market-oriented risk management products (including commodity futures as well as parametric and weather index insurance) that could be used to cope with some types of shocks to the poor (i.e. notably those related to market risks like prices for outputs or inputs; and those related to natural disaster risks like those arising from hurricanes droughts and floods), see among others Skees, Varangis, Larson and Siegel (2005) and Morgan (2006).

Function	Traditional	Index	Comment
	Cost: High	Cost: Low	conditions in all cases.
Loss adjustment	Needs inspection of crop damage and claim adjustment.	Not required: Payment according to measured index.	This category is one of the most important differences between traditional and index products.
	Cost: High	Cost: Low	
Claims payment	Settlement of claim.	Settlement of claim.	Once claim finalized, similar payment costs are incurred.
	Cost: Low	Cost: Low	

Source: William Dick as quoted by Manuamorn 2005 (pp.16-17).

B) Dynamic incentives

MFI's like Grameen Bank have turned to building into their lending strategies dynamic incentive features in order to encourage repayment, and minimize costs related to monitoring and enforcement. Some of these dynamic incentives include the threat of exclusion of defaulting borrowers and giving borrowers in good standing access to larger loans, both of which give borrowers strong reasons for paying their loans back and keeping good credit standing. Some scholars consider this—collateralizing the asset of future access to loans—as an additional innovation (i.e. the other is group lending) by MFI's (Schreiner 2003). However, it might be possible to think of dynamic incentives as a broad category of innovations that could be applicable not just to the poor, but to financial services consumers more generally. Thus, along with other innovations like joint lending, dynamic incentives also help to mitigate the effects of constraints related to information asymmetry (Armendariz de Aghion and Morduch 2005; Roodman and Qureshi 2006).

In some contexts, the ability to credibly apply dynamic incentives could be considered as one of the most important differences between the MFI approach and the earlier experience of state-directed credit. Many state-run banks often faced pressure to extend loans based on political exigencies and patronage politics, thus curtailing the steady supply of financing available. This could have resulted in an expectation that one would only be able to take out one loan in those institutions—which in turn curtails the incentives to repay.³⁷ By being able to threaten exclusion and being able to offer higher loan amounts to those who do pay, microlenders are able to apply repayment incentives that state-run banks may not have had (Armendariz de Aghion and Morduch 2005, p.122).

³⁷ Some of India's experiences with state directed credit reflect this. For a discussion, see Armendariz de Aghion and Morduch (2005).

C) Partnering

Partnerships come in myriad forms, but they all essentially help to address collective action challenges. In the present context, there are many partnership examples which address collective action challenges that are critically linked to enhanced market inclusiveness. Some are reflected in table 1. For instance, the public-private partnership of the Clinton Foundation HIV/AIDS Initiative, comprised of a number of developing countries and pharmaceutical companies and the Clinton Foundation, helped to achieve pricing agreements between the developing country partners and nine pharmaceutical companies to lower the prices of HIV diagnosis and two antiretrovirals (ARVs) (Clinton Foundation 2006). Essentially, a bulk purchasing agreement guarantees the companies a sale of a fixed amount of products at a fixed price, which helps lower the uncertainty in their sales revenues, resulting in gains which in part get passed on in the form of lower prices.³⁸

Another example of a partnership between actors from the private and the public spheres is the collaboration of South Africa's four major banks (Absa, First National Bank, Nedbank and Standard Bank) and the government owned Postbank to offer a basic card-based transactional and savings account called *Mzansi* Account, which could be very useful for many low-income South Africans. Although the account is marketed competitively by the banks, Mzansi is primarily a collaborative effort, in which the marketing costs to develop the brand and establish the standard were shared by the participating banks (Napier 2005). Clients enjoy the network of an expanded banking platform at relatively low cost, thus potentially contributing to the expansion of access to financial services in South Africa.

Partnerships among private sector actors could also help to jump-start certain missing markets, thus potentially enhancing market inclusiveness for the poor. For instance, in partnership with the insurance company ICICI Lombard, BASIX designed and developed weather index insurance for castor and groundnut farmers in India. It was the first time that an agricultural finance institution transferred the systemic risk of its crop lending portfolio to the international weather risk markets (World Bank 2005, p.39). The weather-link enabled BASIX to hedge its portfolio in areas where crop yields (and thus repayment rates) are highly correlated with rainfall.

A private sector partnership is also behind the "Cash Agent Model" introduced by ICICI Bank in order to offer remittance services to recipients in rural areas in India. ICICI Bank's Cash Agent Model was piloted via existing internet kiosks owned by local entrepreneurs. The kiosks were converted into cash agents and kiosk owners became distributors of remittances to the rural public (WWB 2004). Through this partnership, ICICI Bank could offer the pay-out of remittances in cash in rural India harnessing

³⁸ A recent report published by WHO, the Joint United Nations Programme on HIV/AIDS (UNAIDS) and UNICEF indicates that the fall in drug prices between 2004 and 2006 can partly be attributed to negotiations between the Clinton Foundation and major generic manufacturers (WHO, UNAIDS and UNICEF 2007, p.23).

existing infrastructure and social networks. This leads to lower production costs than would otherwise have been if the company had to set-up its own infrastructure; and it also taps an existing retail and marketing network that the target consumers are already familiar with.

D) Real options strategy

Applying flexible business strategies with feedback mechanisms which allow rapid scaling up or down of experimental product lines seems like an obvious strategy to take in most markets—but it might bear additional emphasis under especially challenging market conditions such as those in low-income markets. This strategy could also be critically linked to addressing in a timely fashion some of the knowledge gaps faced by business actors.

Perhaps one example that might help illustrate this strategy is that of KickStart, a nonprofit social enterprise in Kenya. Simanis and Hart (2006) note that the trial-and-error approach taken by KickStart reflects their strategy to produce durable, culturally-sensitive, mechanically operated technologies in a flexible organizational design that enables fast, cost-saving learning. While KickStart relies on donor funds to finance the initial market development for its new tools and equipment, it aims to abandon market subsidies, once sales reach a “tipping point” and leave in place a self-sustainable supply chain which will keep on providing the new technologies to poor entrepreneurs for years to come. Based on the history of the introduction of new products in Africa and elsewhere, the nonprofit estimates that a tipping point will be reached when sales of a new money-making technology for its clients reach 15 to 20 percent of the total market potential in a particular country (between 6 and 15 years after the introduction of a new KickStart technology). The exact period will depend on the technology, the country, and the amount of money spent on market development (Fisher 2006).

E) Total product solutions

A variety of products on offer in most markets might cater more to the high and middle income consumers’ needs and environment. Strategies to design “complete” products to better fit the environment of low-income markets and the characteristics and tastes of low-income consumers, could therefore also help enhance market inclusiveness, notably from a poor consumer’s vantagepoint. There are a variety of examples here, including those related to new technology designs, such as the Motofone F3 by Motorola, a cell phone that is designed to be affordable and accessible for illiterate people, and includes long lasting batteries and durable design.³⁹

In another example for a total product solution strategy, Prodem FFP, a privately held financial fund, deployed new technology-based products and systems in Bolivia in order to expand its markets and improve its service. Smart cards and digital fingerprint recognition technology are implemented in all Prodem FFP branch offices and so called

³⁹ For more information on Motorola’s Motofone F3, see www.motorola.com/motoinfo/product/details.jsp?globalObjectId=164.

“Smart ATMs”, as well as stand-alone, voice-driven Smart ATMs in local languages with color-coded screens (Hernandez and Mugica 2003). Furthermore, in collaboration with partners, ICICI Bank in India also developed a total product solution strategy: a user-friendly, low-cost village ATM for rural India that can use fingerprint scanning to identify savers (most of whom are illiterate) (WWB 2004). The machine is designed to withstand the difficult conditions—e.g. power outages—encountered in rural areas. Also, in partnership with the US Centers for Disease Control and Prevention (CDC), Procter & Gamble developed an affordable in-home water purification technology (PuR Purifier of Water) which produces high-quality drinking water from otherwise unsafe sources and is easy to use and distribute in rural areas where access to safe drinking water is often limited (WBCSD 2006).

Applying total product solution strategies could also be behind the packaging of different microfinance-related products, such as attaching insurance to access to credit. For instance, Grameen Koota,⁴⁰ a solidarity group MFI in India, requires borrowers to deposit 2 percent of their loan amount into an emergency fund, while FINCA-Uganda,⁴¹ a village banking MFI, offers credit-life insurance in partnership with the American Insurance Group at the cost of 1 percent of the loan amount. In both cases, the outstanding loan balance is written off in the event that the borrower dies, which results in better risk management for the client’s family, the client’s group, and ultimately, the MFI itself (Roodman and Qureshi 2006). Packaging microfinance products with entrepreneurship training could also help improve the financial viability of providing the service. For instance, Karlan and Valdivia (2007) use a randomized controlled trial methodology in their empirical analysis of the impact of adding business training to a Peruvian group lending program for female microentrepreneurs, and they find that training leads to increased business knowledge, practices and revenues, as well as improved client repayment and retention rates.

To summarize, the foregoing describes at least 11 distinct business strategies that seem to work well in increasing market inclusivity for the poor. These strategies help lower the costs of serving low-income markets and minimize certain risks, or try to tap the behavior of the target consumers or comparative advantages of potential partners in order to enhance the financial viability of the initiative. As noted earlier, the strategies are not mutually exclusive. Specific product, service or process innovations introduced by private actors (on their own and sometimes in partnership) tend to embody at least one strategy, though some have features that reflect multiple strategies. While hard empirical evidence on financial viability, human development impact and penetrating the poor population segment is still forthcoming in many of the examples discussed, it seems clear at least from the anecdotal evidence that these initiatives hold some promise in achieving these goals, and might merit further examination.

⁴⁰ For further information on Grameen Koota, see www.grameenkoota.org.

⁴¹ For further information on FINCA-Uganda, see http://villagebanking.org/work-afr_uga.htm.

III. Conclusion

This paper responds to the question: Can markets for goods and services that are important for development be made more inclusive for the poor in a financially viable way? Its specific contribution is twofold. First, based on a review of the academic literature and available anecdotal evidence on selected initiatives by different private actors, it provides an illustrative compilation of initiatives reflecting business strategies that seem to work well in enhancing market inclusivity for the poor. Even as much of the evidence is still preliminary and partial, these suggest that it might be possible to bring more of the poor into key markets (either as consumers or as producers), as well as achieve (or go in the direction of achieving) financial viability and a strong development impact. Second, drawing on this first attempt to survey this dynamic and still largely unexamined landscape, this paper presents a possible typology of some of the successful business strategies, and the innovations that embody these strategies. The typology is a first attempt to try and identify the specific approaches through which private actors might be able to address market failures, government failures and a number of constraining characteristics of the poor and business actors and thus grow more inclusive markets.

Some of the strategies discussed in this paper are clearly not “new”—Aravind, for example, has been around for about thirty years. Furthermore, tiered pricing strategies (or price discrimination) have been employed in a variety of contexts, and are now standard fare in most microeconomics textbooks. Group lending has been around as far back at least as 1976 (when Grameen Bank was started); and contracting innovations arrangements are also ubiquitous and quite possibly trace back even to some long-practiced historical antecedents. Nevertheless, there are also a number of more recent innovations—including those that leverage new technologies to offer and improve communications and financial services to the poor, as well as new microinsurance products that might help country farmers better manage weather- and crop-related risks. Including these newer and some “older” innovations in the analysis helps reveal the dynamic and innovative nature of different private actors—often in partnership with civil society and the public sector—in low-income markets. Two potential trends seem to emerge from the analysis in this paper:

1. For-profit business actors, notably those involved in providing access to ICTs and financial services, in some contexts and given certain conditions, are using innovations to realize commercial (core business) opportunities to serve more of the low-income population, and in some cases serving the poor by providing goods and services that enhance human development. A growing number of these business actors are Southern companies, including, for instance, Globe Telecom and Smart Communications in the Philippines and ICICI Bank and ITC in India.
2. Not for profit actors and NGOs (including numerous MFIs), are also turning to a variety of product and process innovations in order to attain greater financial

viability, notably financial self-sustainability, though in many cases not necessarily profitability. This seems to form part of their broader strategy towards more sustained breadth of outreach of providing services to the poor. This trend suggests the potential to serve more of the poor (and increase development impact) when using market-oriented strategies that imply greater financial self-sustainability. Examples on this front include BASIX, KickStart and innumerable MFIs that have deployed various innovations to serve low-income markets in a low cost and financially viable way.

Are all these initiatives going to be successful in achieving financial viability, or even perhaps achieve competitive rates of return? Is there a trade-off between financial viability and penetrating deeper into low-income markets? Will the positive development impact be significant and sustainable? Is the majority of the poor—for instance, those living on less than \$2 a day—going to be reached? And perhaps most important, are these strategies and innovations reflective of an emerging trend?

The answers to these questions are, for the most part, still largely based on inference rather than on conclusive empirical evidence. Recent studies, notably in the microfinance area, seem to provide initial evidence that some of these innovations are indeed making a difference, in terms of outreach to the poor, financial viability and development impact.⁴² The experiences of a few MFIs also suggest that there need not be a trade-off between financial viability and serving the poor.⁴³ However, from a broader, and cross-sectoral perspective, due to the initial stage at which many of the initiatives currently stand and given the so far limited development impact evaluations and financial assessments on most of these initiatives, it is still not possible to draw definitive conclusions on whether the core business and development cases have both been

⁴² For instance, recent studies using randomized controlled trials find evidence that group liability can significantly reduce moral hazard and improve repayment rates, that savings products with build-in commitment mechanisms could improve savings rates, and that packaging credit with entrepreneurship training not only improves business knowledge, practices and revenues, but also client repayment and retention rates (e.g. Ashraf, Karlan and Yin 2006a; 2006b; Karlan and Valdivia 2007; Giné and Karlan 2007). In addition, using data on a sample of MFIs collected by Mix Market, Gonzalez and Rosenberg (2006, p.6) find evidence to suggest that increasing an MFI's share of poor borrowers from 80 percent to 90 percent is associated with only a slight drop in operating self-sufficiency (i.e. income divided by cash costs with no adjustment to reflect subsidies the MFIs may receive) from 69.5 to 68 percent. And, as noted earlier, a study by Cull, Demirguc-Cunt and Morduch (2007) finds evidence that group lending seems to be associated with better portfolio quality for the MFIs these authors examined. However, even as these emerging patterns are promising, they are still very preliminary, and stronger empirical evidence connecting specific innovations with improved financial viability of serving the poor is still forthcoming.

⁴³ For instance, Grameen Bank's website indicates that "According to a recent internal survey, 64 per cent of Grameen [...] borrowers have crossed the poverty line. The remaining families are moving steadily towards the poverty line from below." In addition, it also claims that "Ever since Grameen Bank came into being, it has made profit every year except in 1983, 1991, and 1992. It has published its audited balance-sheet every year, audited by two internationally reputed audit firms of the country." (See www.grameen-info.org/bank/GBGlance.htm.) Schreiner (2003) devises a framework for analyzing the cost-effectiveness of an MFI, applies this to Grameen Bank using data for 1983-1997, and finds evidence to support the claim that Grameen could very easily achieve profitability, even correcting for various implicit and direct subsidies it receives.

achieved (or could be achieved), while at the same time penetrating deep enough to reach the poor.

Though there are a number of impressive success stories, the main findings in this paper are therefore still preliminary. Nevertheless, change seems to be underfoot—the direction and scope of how private actors and their innovations are reshaping the low-income market landscape is clearly a fertile area for continued research.⁴⁴

⁴⁴ One initiative aimed at exploring this area is the forthcoming UNDP-led multi-stakeholder initiative Growing Inclusive Markets. In the context of the initiative, amongst others, 50 in-depth case studies commissioned by UNDP's Private Sector Division will be made available on <http://businessmdgs.net>.

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Annex: Compilation of Selected Innovations

Each entry indicates the actor(s) involved, the name of the innovation and the country where it is applied. Each of the entries also seeks to provide three main types of information:

- Characterization of the context, which includes a discussion of some of the barriers that initially prevented markets from reaching the BOP, or barriers that hindered the BOP population from accessing goods and services in the market.
- Description of the innovation which enabled to circumvent or eliminate these barriers.
- Discussion of the business case (e.g. financial viability and, if possible, profitability) and the human development impact of the innovation.

The descriptions of the entries were excerpted from reports, websites, case studies, academic papers, books and newspaper articles. The main sources are indicated in each innovation entry. Due to the limited data and literature on some initiatives, their profiles herein may not necessarily reflect the most up-to-date information. The authors would be grateful for any suggestions and comments on the data and information presented.

Annex Table 1. Initiatives Profiled

(Actor / Innovation / Country)

1. Absa, First National Bank, Nedbank, Standard Bank and Postbank / Mzansi Account / South Africa.....	50
2. BASIX and ICICI Lombard General Insurance Company Ltd. / Weather Insurance for Agriculture / India.....	52
3. Bushnet / Ten By Ten / Uganda.....	54
4. CEMEX / Patrimonio Hoy / Mexico	56
5. Clinton Foundation's HIV/AIDS Initiative (CHAI) / Bulk Purchasing / International	58
6. Equity Bank/ Jijenge / Kenya	60
7. Globe Telecom / G-Cash / Philippines	62
8. GrameenPhone / Village Phone and EDGE / Bangladesh.....	64
9. ICICI Bank / Remittance Products for Rural Markets / India	66
10. ITC / E-Choupal / India	68
11. Kenya Agricultural Commodity Exchange Limited (KACE) / Market Information System (MIS) / Kenya	70
12. KickStart / Real Options Strategy / Kenya	72
13. Pride Africa / DrumNet / Kenya	74
14. Proctor & Gamble / PuR Purifier of Water / Developing Countries	76
15. PRODEM FFP / Smart Automatic Teller Machines (Smart ATMs) / Bolivia.....	78
16. Sanofi-Aventis / Cheaper Malaria Pill / Developing Countries.....	80
17. Smart Communications Inc / Over-the-Air Payment System and Pre-Paid Cards / Philippines	82
18. VOXIVA / Alerta Platform / Peru	84
19. WIZZIT Bank / M-Banking / South Africa	86
20. World Bank / Global Index Insurance Facility / International	88

Absa, First National Bank, Nedbank, Standard Bank and Postbank / Mzansi
Account / South Africa
(Actor / Innovation / Country)

The Context. In 2004, approximately 50 percent of South Africans had largely been excluded from the formal banking sector for various reasons ranging from low and irregular income to geographic distance from the financial institution to the conditions governing the available financial services it offers.⁴⁵

The Innovation. Under the South African Financial Sector Charter⁴⁶, signed in October 2003, banks and insurers committed to provide certain products and services to lower income people by 2008.⁴⁷ Essentially the targets have to do with physical access (e.g., people should not have to travel more than 20 kilometers to be able to access first order banking products), affordability and appropriateness. The banking industry's most visible achievement, driven by the Charter, has been the launch by the four major banks (Absa, First National Bank, Nedbank and Standard Bank) and the government owned Postbank of the entry level bank account, known as *Mzansi* in October 2004. Although features differ among the banks, *Mzansi* is a basic, standardized, debit card-based transactional and savings account. All that is required to open the account is a valid ID document. Transactions are limited to deposits, withdrawals and debit card payments—the account includes a debit card that can be used at retail outlets. No management fees are charged on *Mzansi* Accounts, and one free cash deposit per month is allowed. *Mzansi* customers are thus able to save without having their capital eroded by bank charges, with the only charge being for transactions made—and with ATM transactions costing the same regardless of which bank's ATM is used.

The Charter, with its call for the industry to address issues of access as a joint effort, set the context for a development in the market of far greater scale and impact than any one bank on its own would likely have achieved. Although the accounts are marketed competitively by the banks, whose pricing structures differ, *Mzansi* is above all a collaborative effort between the banks, in which the marketing costs to develop the brand and establish the standard were shared. The Charter, a voluntary agreement but negotiated under the pressure from the government, encouraged the banks to find a workable solution to the provision of a basic banking product.

⁴⁵ Estimates for unbanked adults in South Africa in 2004 were taken from FinMark Trust (2005, p.17).

⁴⁶ The signatories of the Financial Sector Charter are the private sector representatives of the financial services industry (for example, the Banking Council of South Africa, the Life Offices Association and the Association of Black Securities and Investment Professionals). For a copy of the Charter see www.banking.org.za.

⁴⁷ The following two paragraphs were excerpted from Napier (2005, p. 9) and www.southafrica.info/public_services/citizens/consumer_services/mzansi.htm (accessed June 1, 2007).

Business Case and the Development Impact. By mid-May 2005, more than a million Mzansi Accounts had been opened.⁴⁸ Aggregated data from participating banks show that in excess of 6,000 accounts had been opened daily. 91.3 percent of the Mzansi Accounts opened were held by clients who had previously not banked with their chosen Mzansi banking institution, suggesting that a real improvement in access to banking services has occurred. Data showed that the majority of account holders (62 percent) by mid-May 2005 were between 25 and 54 years old and that 53.5 percent of Mzansi Account holders were female. The racial breakdown showed account holders reflective of the country's population demographics and was consistent with banked/unbanked populations. The largest take-up came from black communities. According to the FinScope 2006 Survey⁴⁹ the percentage of people holding a Mzansi Account has risen from 2 percent in 2005 to 6 percent in 2006, a staggering growth of around 250 percent. It also revealed that actual claimed Mzansi Account holders are nearing the two million mark. This is significant growth in a short period, with Mzansi Account holders representing 12 percent of the entire banked market.⁵⁰

The collaboration between the banks allows Mzansi Account holders to make use of any of the participating banks' ATMs at no additional cost – effectively creating a network of over ten thousand ATMs across the country and extending the banking platform to the greater community.⁵¹ This is augmented by point of sale functionality available at retailers and the addition of the Postbank's vast Post Office network. This development largely shows that the account is achieving its aim of providing affordable and accessible banking to the previously unbanked population, which is consistent with Charter objectives. Building on the Mzansi Account initiative, in September 2005, South Africa's major four banks and the South African Post Office launched a second solution aimed at the poor: a low-cost money transfer service for sending money anywhere in South Africa. To avail this service, users do not need to have a bank account. The person sending the money pays the full transaction fee and the person receiving the money does not pay anything. The recipient can collect the full amount at any branch of a participating bank or the Post Office.

⁴⁸ The following paragraph was excerpted from Banking Association South Africa (2005) and FinMark Trust (2006a).

⁴⁹ See FinMark Trust (2006b).

⁵⁰ Claimed use of Mzansi invites comparison with the official figures, which are around 3.3 million. It is evident that the research is under-reading actual Mzansi use. This could be because many users of Mzansi do not actually realize the type of account they hold. For example, Postbank account holders were all switched to Mzansi accounts. New account holders are more likely to be aware that they have Mzansi accounts than are those who have been automatically converted to this account type.

⁵¹ The following paragraph was excerpted from Banking Council South Africa (2004), Banking Association South Africa (2005) and www.fnb.co.za/personal/transact/easybanking/mzansiMoney.html (accessed June 1, 2007).

BASIX and ICICI Lombard General Insurance Company Ltd. / Weather
Insurance for Agriculture / India⁵²
(Actor / Innovation / Country)

The Context. Rural lending, particularly to rain fed farmers, is generally considered very risky by banks because of the high systemic risk of loan default in the aftermath of droughts and other weather extremes. Banks may deny loans to rain fed farmers potentially affected by adverse weather. Livelihoods of smallholder farmers in developing countries—and the countries’ economies themselves—are severely affected by the risk of inadequate rainfall resulting in drought (and food insecurity), soil depletion, lack of credit, and limited access to agricultural inputs. Disaster microinsurance can help cover some of the risks. However, traditionally, insurers have paid claims based on actual losses to households, businesses and farmers. This requires extensive networks of claims adjusters who assess individual losses following an event. This is referred to often as indemnity-based insurance. This traditional type of crop insurance has often failed in many countries mainly due to the high costs associated with settling claims on a case-by-case basis. Natural disasters such as droughts easily bankrupt such programs.

The Innovation. Established in 1996, BASIX is a group of companies that perceives of itself as “a new generation livelihood promotion institution”.⁵³ BASIX promotes rural livelihoods in India through the “Livelihood Triad” that comprises livelihood financial services (credit, savings, and insurance), human resource and institutional development services, and agricultural and business development services. BASIX offers loans in conjunction with several insurance products including: a) a group term life insurance product under the “CreditPlus” Scheme, which provides a payment equivalent to 150 percent of loan principal to the surviving families of insured borrowers; b) a cattle insurance plan that provides death coverage of livestock with the animals insured for full market value; and c) a weather index insurance product that triggers automatic payments to farm borrowers in the event of rainfall deficits.

As regards the latter, it was first introduced in 2003 under a pilot program in Andhra Pradesh (AP), where BASIX offered to castor and groundnut farmers weather insurance contracts that will trigger prompt payouts when rainfall falls below the trigger level in each respective crop-specific rainfall index.⁵⁴ Different from more traditional insurance products, index insurance requires relatively less administrative and operational costs because the product is simpler—its payout is based on rainfall levels and no longer on information specific to the farmer covered. Also, weather-indexed insurance is expected to be more effective than traditional crop insurance, as it protects the farmer’s overall income rather than the yield of a specific crop. Whereas traditional crop insurance

⁵² Excerpted from World Bank (2005, pp.38-72) unless otherwise noted.

⁵³ BASIX comprises five companies: 1) Bhartiya Samruddhi Investments and Consulting Services, Ltd., a holding company, 2) Bhartiya Samruddhi Finance Ltd., a nonbank financial company, 3) Krishna Bhima Samruddhi Local Area Bank Ltd., a nonbank financial company, 4) Indian Grameen Services, a not-for-profit company, and 5) Sarvodaya Nano Finance Ltd., a nonbank financial company owned by women’s SHGs.

⁵⁴ The following paragraph was partly excerpted from IISD and TERI (2006, pp.64-65).

tends to fail to provide the right incentives to farmers (crops yields are insured irrespective of efforts), both moral hazard and claims manipulation are eliminated in objectively-measured weather-indexed contracts. More important, however, is the difference in the implementation of the two approaches: The way contracts are drawn up and losses are assessed in traditional crop insurance leads to high administrative costs and consequently long delays (of up to a year) in making claim settlements. This tends to benefit large and commercial farmers who can afford to wait, and defeats the purpose of insuring small and marginal farmers who remain indebted.⁵⁵ On the other hand, new weather-indexed insurance schemes are able to function effectively under a range of anticipated conditions due to the following two mechanisms: Quick payouts in private weather insurance contracts; triggering of payouts by independently monitored weather indices and not farm loss sampling.

Weather insurance is an innovation that allows BASIX to hedge its portfolio in areas where crop yields (and thus repayment rates) are highly correlated with rainfall. The product was designed and developed in partnership with ICICI Lombard, with technical assistance from the Commodity Risk Management Group (CRMG) of the World Bank. The deal marked the first time that an agricultural finance institution transferred the systemic risk of its crop lending portfolio to the international weather risk markets.

Business Case and the Development Impact. Within only three years, the small pilot has graduated into a large-scale weather insurance operation in which BASIX sold 7,685 policies to 6,703 customers in 36 locations in 6 states during the 2005 monsoon season.⁵⁶ Interactions with farmers indicate the potential for commercial expansion and highlight the necessary factors in bringing the right weather insurance products to farmers.⁵⁷

BASIX needs to sell a large number of insurance policies in order to recover capacity building costs the company invested in insurance services. The main components of the cost come from training Customer Services Agents (CSAs) and automating the insurance administration system. While BASIX used revenue surpluses from group life insurance to finance the experiment with weather insurance during 2003-04, ultimately the product needs to generate independent income to sustain itself, and contribute to the overall cost recovery and profitability of the insurance business. BASIX estimates that reaching at least 10 percent of the households in each village in which BASIX operates will be a good start.

⁵⁵ Subsidized premiums, coupled with massive relief transfers demanded by the states from the centre, failed to provide the right signals for risk mitigation to insured farmers. Despite experimenting with different schemes over three decades, public crop insurance policy in India seems to have failed in terms of coverage of farmers and financial sustainability.

⁵⁶ The following two paragraphs were excerpted from Manuamorn (2005, pp.1-9).

⁵⁷ At the suggestion of farmers new features were added to the product. Also, instead of crop-specific policies, BASIX now sells area-specific generic weather insurance products which suit all principal rain-fed crops within the same agro-climatic region.

Bushnet / Ten By Ten / Uganda⁵⁸

(Actor / Innovation / Country)

The Context. Although broadband is spreading in many developing countries, broadband access in these markets is often priced way in excess of the world average, worsened by extremely expensive access through leased lines.⁵⁹ Some providers in these countries engage in premium pricing of sought-after advanced services or passing off Integrated Services Digital Network (ISDN) as broadband. The most expensive pricing packages found in a recent International Telecommunication Union (ITU) analysis are in the Least Developed Countries (LDCs). In mid-2005, six out of the top ten most expensive countries for broadband access worldwide were in Africa. This is an important issue, since the cost of access to ICTs in LDCs is a critical factor in determining access and usage. Highly priced ICT tend to weaken these countries' potential to spur economic growth.

The Innovation. In 2002, the limited liability company Bushnet started the High Speed Data Network *Ten By Ten* that provides affordable wireless communication and information access across Uganda. Bushnet's belief that Internet Protocol (IP) should become almost a free commodity for poor people has led to the idea of selling Ten By Ten using a tiered pricing model. Ten By Ten provides services for those who can afford them (i.e. financial and commercial enterprises) in order to subsidize educational, health, and agricultural content for those who can't—by definition, everyone in remote and rural areas of Africa. For example, the bank's use of a secure network in a remote area (at a cost of \$200 per month) will subsidize the cost of the local school's access (at \$50 per month) to high-grade educational content. To ensure the quality of its services, Bushnet is using a combination of leading brand products and technologies—e.g. Cisco, Ericsson, Extreme, Karlnet, Krone, Lucent, Redline, Wyse.

Business Case and the Development Impact. Ten By Ten in Uganda started well enough thanks in part to USAID's funding of the Academy for Educational Development's (AED) project for web-based learning at Primary Teacher Colleges (PTCs) at 10 remote sites in Uganda, thereby providing the wherewithal for the installation of Bushnet's rural wireless backbone. Bushnet's challenge has been to attract sufficient users in sight of mast-mounted Access Points (APs) on the Ten By Ten backbone. Although Ten By Ten initially operated at a loss, the network achieved commercial break-even within eighteen months of delivering educational and health content into remote areas, thereby demonstrating that the model is sustainable. Ten By Ten is currently supporting a range of users, including donor-funded teaching colleges, government organizations, and commercial enterprises, large and small. It has shown that the product offering is popular and, contrary to public expectation, there is a demand for

⁵⁸ Excerpted from Bushnet (2004, pp.1-4) unless otherwise noted.

⁵⁹ The following paragraph was excerpted from ITU (2006, p.3).

high speed IP in rural areas. Just as the take-up of GSM usage in rural areas has been spectacular, so too has been the response to broadband Internet.

For entities with remote branches—such as banks, micro-finance enterprises, NGOs, multi-national corporations, or Government Ministries Ten By Ten offers a totally secure, highly available network with high access speeds, low entry costs and low running costs. For schools, clinics, local community centers, or internet cafés in rural areas Ten By Ten’s added value lies in low cost, high quality content, with self-provisioning education-on-demand, access to medical information databases, high speed Internet, and community-based “edutainment”. For instance, Ten By Ten’s services can help to improve the education of young children (with Ten By Ten teachers have access to web-based, self-provisioning, relevant syllabus, for teachers and pupils alike) and it can facilitate the distribution of life saving drugs and accelerate medical diagnosis (Ten By Ten enables wireless barcode scanning of drugs at distribution centers, records captured and transmitted in real-time back to central health data repositories and video telemetry providing international advice and treatment).

The key to the Ten By Ten concept is to make it affordable. Users’ connection equipment is already below \$500, and ways will be found to lease this equipment, particularly to micro-users. Economies of scale are equally important, and cheaper IP will ensure that user costs are kept to a minimum, as Bushnet becomes a true Application Service Provider. For instance, access to educational content and public access telephony will be virtually free, while access to internet or financial information will be charged at different tariffs. In May 2004 there were 30 installed Access Points in rural areas on the Ten By Ten network, covering 20,000 sq kms, able to connect thousands of users. The cost of these Access Points, at \$6,000 per installed site, is all that can delay the speed of rollout.

CEMEX / Patrimonio Hoy / Mexico²⁸
(Actor / Innovation / Country)

The Context. Despite the prevalence of self-built homes, the self-construction process in Mexico is slow and inefficient, for various reasons. First, the purchasing and construction process is often delayed because few low-income individuals possess the capital to purchase all the materials for room construction at one time. In addition, low-income individuals often are not able to save or access credit to make these purchases. Finally, because of erratic and severe inflation in Mexico, it is difficult for individual families to purchase materials on a consistent basis due to pricing fluctuations; hence materials tend to be purchased at irregular intervals and in varying amounts from local outlets. Compounding these challenges, poor families often do not have the expert knowledge to properly construct houses, thereby slowing the construction process and leading to lower quality homes.

The Innovation. In December 1999, CEMEX, a leading global building solutions company based in Mexico, launched *Patrimonio Hoy* (PH), a program which allows low-income families to obtain access to services, cement and other building materials on credit through a planned savings program. Through PH, CEMEX helps organize its customers into groups of three families and requires each family to contribute a guaranteed frozen price of approximately \$13 per week for seven cycles of ten weeks. Within each ten week cycle, CEMEX provides access to ten weeks of building materials and services after only two weeks of payment. The families collectively pay off their debt during the remaining eight weeks of the cycle through weekly payments. Within each weekly payment, \$11.50 is the direct payment for materials and \$1.50 is the fee for participating in the program. As an added benefit, CEMEX provides families with architectural consulting services, warehousing services, and additional building materials during the entire process.

CEMEX also hires local promoters to generate sales and monitor the program within their assigned areas. These individuals are typically townspeople, such as teachers and church fundraisers, who are trusted within their communities and have a well-established personal network. Promoters conduct house visits and interview potential customers in order to evaluate creditworthiness. Their reputation and network allow them to effectively create new business, arrange families in groups, and manage client relationships.

As of 2005, PH has a Mexican sales force of over 1,000 promoters in 62 offices and 29 cities. The program has served over 100,000 families since its inception in 1999 and has loaned out construction materials valued at \$42 million – enough to build 650,000 square meters of rooms. Its customers have been able to decrease room construction time from five years to just over one year, while decreasing costs of construction by approximately 20 percent. CEMEX plans to expand the program to

²⁸ Excerpted from Segel and Meghji (2005, pp.1-3).

1,000,000 customers by 2010 and hopes to eventually reach a large proportion of the 16 million self-built homes in Mexico.

Business Case and the Development Impact. Segel and Meghji (2005, pp. 1-3) report that PH seems to have created economic and social value for its key stakeholders. It has resulted in increased sales for CEMEX and, despite the additional costs of serving this customer segment, seems to be a profitable business venture. Similarly, PH has created significant economic value for its local distributors who have experienced higher sales and healthy profits through the program. It has also created jobs for thousands of door-to-door promoters, 98 percent of whom are women. Employment in PH provides these women with relatively high income earning potential, personal agency and independence, and elevated social status within their communities. Low-income customers of PH have also benefited from the program, notably by improving the quality (structural integrity) and size of their homes.

Clinton Foundation's HIV/AIDS Initiative (CHAI) / Bulk Purchasing /
International²⁹
(Actor / Innovation / Country)

The Context. Prices of HIV diagnosis and antiretrovirals are high and therefore not accessible to many. The people that most suffer from this are people in developing countries where most of the people infected with the virus live. Testing and expanding HIV treatment are among the biggest challenges in dealing with this disease. In Africa, in particular, the price of second line treatment is 10 times more expensive than first line. In middle income countries it is four to five times more expensive than that.

The Innovation. In January 2006, Former U.S. President Bill Clinton announced that the Clinton Foundation's HIV/AIDS Initiative (CHAI) negotiated bulk purchasing agreements to help lower the prices of HIV diagnosis and two antiretrovirals (ARVs). This bulk purchasing deal helped reduce the price of medicines and vaccines through economies of scale, increasing the bargaining power of the buyer, and reducing market asymmetries by sharing information between disparate purchasers. The agreements are with nine pharmaceutical companies and it will result in lower prices of HIV rapid tests and antiretrovirals *efavirenz* and *abacavir* by 30 to 50 percent for the 50 nations that are in the foundation's countries procurement consortium.³⁰ That includes the overwhelming majority of people who are HIV positive in the world.

Business Case and the Development Impact. The HIV rapid tests enable people to test for the disease even in remote rural areas, as the tests are easy to use: they only take a drop of blood and give results in 20 minutes while the patient is with the counselor or healthcare worker. The price of HIV rapid tests will be lowered to the range of 49 to 65 cents per test. Four companies will supply at these prices. Chembio Diagnostic Systems, (Qualpro Diagnostics), Shanghai Kehua, and Orgenics, a subsidiary of Inverness Medical Innovations. Two tests are needed to confirm an HIV positive diagnosis. Compared to the current price of rapid test of 80 cents to \$1.44 the use of the tests available through the bulk purchasing agreement will reduce the price of HIV diagnosis by roughly 50 percent in Africa. The savings will be even higher in middle income countries. One of the consortium's partners, Brazil, is already planning on using these deals to buy four million tests at a savings of \$10 million or 80 percent. Making diagnostics cheaper will allow extending testing services to more people more rapidly.

As regards the price of second line antiretrovirals, significant price reductions were achieved for two drugs. Efavirenz sold under the agreement for \$240 per patient per year as compared with the published price of \$367 and a range available today of between \$328 and \$480. That's a reduction of more than 30 percent from market rates. Abacavir will be available for \$447, a reduction of about 40 percent. (Its current list price

²⁹ Excerpted from Clinton Foundation (2006).

³⁰ For a list of members of the foundation's procurement consortium, see www.clintonfoundation.org/seewherewework.htm.

is about \$705.) The active pharmaceutical ingredients for these drugs, which drive the cost of the final product, will be sold by one of the foundation's long-standing partners Matrix Laboratories. Efavirenz will then be sold to the market by Cipla, Ranbaxy, Aspen Pharmacare, as well as a new partner to the foundation—Strides Arcolab. Strides will also now supply first line medicines under the agreement and Cipla will be the supplier of abacavir.

Equity Bank/ Jijenge / Kenya⁶⁰
(Actor / Innovation / Country)

The Context. Poor people want to save, and many of them do save. But they are constrained by the multiple demands on their low incomes and a lack of available deposit services. Often referred to as the “forgotten half” of microfinance, savings is a critical financial service for poor and excluded households. Poor people want secure, convenient deposit services that allow for small balances and transactions and offer easy access to their funds. However, many banks and others licensed to take deposits from the public have not entered into this market in a purposeful way. They see the costs of managing large numbers of small accounts and tiny transactions as prohibitive. The consequence of the scarce availability of appropriate savings services is that most poor people save in informal ways which are often linked to high risks.⁶¹

The Innovation. Created in 2002, the *Jijenge* savings account is Equity Bank’s first branded product that can be personalized by customers in the lower-income market segment. It is a contractual savings product with an emergency loan facility attached. The client defines the length of the contract and the periodicity of the deposits (weekly, fortnightly or monthly). A premium interest rate is offered to those who take out longer-term contracts but there are quite significant penalties for premature withdrawals from the account. All *Jijenge* savings account holders have guaranteed, immediate access to an emergency loan of 90 percent of the value of the amount in their *Jijenge* savings account on demand. No ledger, maintenance fees, monthly charges, cash deposit or cheque handling charges are required.⁶²

Business Case and the Development Impact. As a product of extensive market research and constant customer interaction, the *Jijenge* savings account is clearly satisfying customers with many *Jijenge* accountholders particularly pleased with: the disciplined saving; the freedom to set terms; the automatic access to loans; and the lack of operational charges. As well as providing a disciplined way to save, this product allows its clients to meet their “illiquidity” preference. Microsaving has a great potential for poverty alleviation as particularly the poorest require effective management of their scarce liquidity. Those poor people with safer, more formal options to save benefit both themselves and the larger economy.⁶³

The pilot-test of the product clearly identified the need for careful, intense marketing of this relatively complex product to the low-income market, in order to ensure that the potential clients understand the product’s benefits and features. The rollout of *Jijenge* coincided with the massive and explosive growth of Equity Bank and has

⁶⁰ Excerpted from Wright (2005, p.5) unless otherwise noted.

⁶¹ This paragraph was excerpted from Helms (2006, pp.24-25).

⁶² The last phrase was excerpted from www.equitybank.co.ke/personal_banking.php?subcat=38 (accessed June 1, 2007).

⁶³ This paragraph was partly excerpted from Wright (2003, p.31) and Helms (2006, p.25).

therefore not been as successful as the pilot-test had promised—since the customer service staff have had to focus more on basic savings account opening rather than the lengthy process of selling the *Jijenge* product. Despite this, Equity Bank management continue to see *Jijenge* as a key strategic product for the bank in the medium and long term. As of end of February 2005 there were 4,756 *Jijenge* account holders – with a total of \$512,226 (average \$107.70) deposited in their accounts. For Equity Bank, the *Jijenge* savings account offers a stable deposit base from which to lend as well as supplementary income from the emergency loans and premature withdrawal fees. In addition, the product is allowing Equity Bank to attract new clients into its banking halls. The first contractual savings product in the lower-income market segment, the *Jijenge* savings account is also a strong starting point for future cross-selling opportunities.

Globe Telecom / G-Cash / Philippines³¹ (Actor / Innovation / Country)

The Context. Remittance flows to some developing countries have become an important income source for the poor in those countries. Access to money transfer services for remittances might not be available (especially in rural areas) or these could come in bad quality (e.g. with significant delay or at high cost). Access to higher quality and lower cost money transfer services could enhance the benefits from these flows, especially for the poor, for whom any given amount of remittances might constitute a higher share of household income.

The Innovation. In October 2004, Globe Telecom in the Philippines began offering G-Cash, a service that allows the customer to send and receive money and facilitate money remittance, and many other transactions with just a text message or SMS, anytime, anywhere. G-Cash requires only a mobile phone and a one-time SMS-based registration, with a minimal charge of \$0.02 per G-Cash transaction. G-Cash provides a quick, safe, and easy way to send and receive cash values, making it especially relevant for the majority of Filipinos who do not have bank accounts or credit cards. To assure that the recipient receives the G-Cash transaction, both receiver and sender will get a confirmation text with unique transaction codes. The recipients can then use G-Cash to purchase goods, pay bills, or exchange G-Cash for cash in accredited outlets.

Low-cost money transfers benefit Overseas Foreign Workers (OFWs) and domestic remitters. As an example, remittances from the US to the Philippines may cost as low as \$6 (Cash-In fee) + 1 percent (withdrawal fee) of the amount sent while the leading remittance company would charge anywhere between 4 percent - 26 percent of the total amount sent.

Business Case and the Development Impact. Since its launch in 2004, G-Cash has been serving the previously unserved by dramatically expanding its access to the low-income economic class through micro-financing and remittances. In its first year, G-Cash has extended its menu of services from purchase payments, phone-to-phone transfer of cash values and domestic and international remittance to include a wider range of mobile commerce applications covering an ever-growing network of trusted partners with broader worldwide coverage and international remittance outlets in 15 countries. To date, there are more than 500 G-Cash partners and more than 3,000 outlets across different industries and segments. G-Cash also helps to increase the revenues of its merchant partners and expands their reach to a network of 12 million subscribers.

Furthermore, G-Cash extends the reach and opportunities for rural banks in the area of micro-financing. Recognizing the lack of micro-financing opportunities for the lower-income bracket, G-Cash has forged strategic alliances with grassroots institutions to pioneer micro-credit applications in the Philippines, with the recently concluded pilot

³¹ Excerpted from http://cwhonors.org/case_studies/GlobeTelecom.pdf (accessed March 14, 2007).

program of the Rural Bankers Association of the Philippines and the USAID-funded Micro-enterprise Access to Banking Services Program, and recent partnerships with National Confederation of Cooperatives, Inc. (NATCCO) and Philippine Federation of Credit Cooperatives (PFCCO), which expands the G-Cash ecosystem in the countryside. The service's micro-loan functionality enables these organizations to utilize G-Cash as a means of loan installments and payments, while providing additional livelihood programs for their member cooperatives.

GrameenPhone / Village Phone and EDGE / Bangladesh⁶⁴
(Actor / Innovation / Country)

The Context. Low-income individuals in India lack access to ICT due to such factors as fragmented distribution channels and lack of affordability for the low-income population. The absence of basic ICT tools such as telephones increases their social and economic isolation.

The Innovation. Launched in 1997 by Grameen Telecom (GTC) in cooperation with Grameen Bank, the Village Phone (VP) Program connects women borrowers of Grameen Bank to the GSM technology through the village phones. They become effectively mobile public call offices. This not only provides rural poor with new income-generating opportunities, but it also helps to enhance the social status of women from poor rural households. The VP works as an owner-operated pay phone. It allows the rural poor, who cannot afford to become a regular subscriber, to avail themselves of the service with loans from Grameen Bank. The loan usually is for BDT 12,000 and pays for a handset, the subscription and incidental expenses. The VP operator receives training from GTC about mode of operation, user charges and other aspects of operation.⁶⁵

In an effort to further enhance access to ICT, GrameenPhone has also recently introduced the EDGE (Enhanced Data Rates for Global Evolution) service, an advanced high-speed mobile internet and data service for the first time in Bangladesh. The EDGE will enable valued subscribers to enjoy advanced mobile services such as the downloading of video and music clips, full multi-media messaging (MMS), high-speed color internet access and e-mail on the move. It is being launched on a test basis for the time being in Dhaka and Chittagong and it will be launched commercially very soon. The EDGE coverage will also be gradually expanded around the country within this year.⁶⁶

Business Case and Development Impact. GrameenPhone is one of the largest private sector investments in the country with an accumulated investment of BDT 5200 crore up to December 2005.⁶⁷ GrameenPhone is also one the largest taxpayers in the country, having contributed nearly BDT 5000 crore in direct and indirect taxes to the Government Exchequer over the years. Of this amount, BDT 1670 crore was paid in 2005 alone. GP was also the first operator to introduce the pre-paid phone service in September

⁶⁴ Excerpted from Case Western Reserve University (2005) unless otherwise noted.

⁶⁵ GrameenPhone's Global System for Mobile or GSM technology is the most widely accepted digital system in the world, currently used by over 300 million people in 150 countries. GSM brings the most advanced developments in cellular technology at a reasonable cost by spurring severe competition among manufacturers and driving down the cost of equipment. Thus consumers get the best for the least.

⁶⁶ It is an advancement over the GPRS or General Packet Radio Service system and is a third generation mobile phone technology. It is up to 8 times faster than an ordinary GPRS network and, due to its increased network capacity and speed, customers can download contents (video clips, pictures) and communicate much faster.

⁶⁷ The following two paragraphs were partly excerpted from www.grameenphone.com/index.php?id=63 (accessed June 1, 2007).

1999. GrameenPhone has also experience impressive growth in its subscriber base: with 18,000 customers in 1997, growing to about 5.5 million customers by 2005.

The VP Program also provides a good income-earning opportunity to more than 200,000 mostly women VP operators living in rural areas. The VP Program has continued to grow at a robust pace over the years. As of August 2005, there are more than 165,000 VP subscribers. The average revenue per user (ARPU) of VP subscribers is double that of the average GP business user. The revenue growth has been significant over the years. Beginning with BDT 0.53 million in 1997, the figure has risen to BDT 1,114 million in 2002 and to BDT 2,070 million at the end of 2003. The VPs in operation now provide access to telecommunications facilities to more than 60 million people living in rural areas of Bangladesh.

ICICI Bank / Remittance Products for Rural Markets / India⁶⁸
(Actor / Innovation / Country)

The Context. The remittances business in India, estimated at about \$17.6 billion in May 2004, is mainly channeled through banks, which control about 70 percent of the market share. The market is growing at an annual rate of 15 percent. However, there is a large untapped rural market which lacks awareness of financial services as well as convenient access to remittance delivery services.

The Innovation. In February 2004, ICICI launched a pilot program in six villages in the southern state of Tamil Nadu (TN). TN was selected for the pilot due to its status as one of the largest receivers of remittances in India and because ICICI has a wide distribution network in the area. The objective of the pilot was to offer remittance services to rural clients who receive remittances as well as to provide them with financial literacy services. The vehicle for achieving this goal was introducing low-cost ATMs and rural kiosks, so clients could access their remittance funds through ATMs and in cash.

Since ICICI Bank has a strong branch distribution network in Tamil Nadu, a low-cost ATM network was deemed to be an ideal solution for the delivery of remittance funds. The development of this ATM was a joint venture with the Indian Institute of Technology, Madras, and had already been pilot tested.⁶⁹ The “Cash Agent Model” was piloted via existing internet kiosks that were present in local ICICI centers and owned by local entrepreneurs. These kiosks used internet connectivity through Wireless Local Loop (WLL) technology. In this pilot program, the kiosks were converted into cash agents and kiosk owners became distributors of remittance funds to the rural public. The kiosk owner maintains a working capital of approximately \$100. There are numerous checks and balances from ICICI Bank to eliminate any possibility of fraud; for example, daily reports are generated and reconciled with bank data on a regular basis. ICICI Bank also provided online chat systems to villagers so that they could inform remittance senders of ICICI Bank’s services.

During the first few weeks of the pilot, ICICI focused primarily on building awareness among the villagers. Sales personnel of ICICI Bank housed themselves in the kiosks and disseminated information on the free receipt of remittances. They distributed promotional material like leaflets and posters and took the opportunity to explain the various products and features of ICICI’s remittances program during regular interactions

⁶⁸ Excerpted from WWB (2004, pp.1-4).

⁶⁹ With the help of the Indian Institute of Technology in Chennai and others, ICICI Bank has developed a user-friendly, low-cost village ATM from home-made parts and programming. The estimated cost is about \$800, less than one-twentieth of the price of a regular ATM. The machine can survive the extreme weather conditions and power outages which are common features of rural areas. It can use fingerprint scanning to identify savers who are illiterate or who are reluctant to use a personal identification number (Bellman 2004).

with clients. In this phase of the pilot, ICICI Bank received remittances of approximately \$11,000.

In researching the use of remittance funds by clients, ICICI Bank discovered that the remittances were being utilized for monthly sustenance. As such, withdrawal of funds was highly likely. During this phase of the pilot, ICICI Bank began to influence withdrawal patterns and succeeded in altering the withdrawal frequency from once at the beginning of each month to several times in smaller amounts throughout the month, leaving more funds in the client's account for a longer period of time. Customers are now typically withdrawing the money in four installments instead of the conventional bullet withdrawal which was prevalent earlier.

Business Case and the Development Impact. ICICI is the first bank in India to have entered into the rural market with a targeted, innovative strategy that combines access with financial literacy. It saves the customer both time and money by eliminating the need to travel to the nearest town to collect the remittance. In addition, it offers the client a safe and reliable means for accessing and saving funds. ICICI Bank is planning to expand the pilot to several more areas. At present, 60 more locations in Tamil Nadu and 50 locations in Andhra Pradesh (a neighboring state) have been identified. The variety of products offered in each of these locations has been improved, and customers now have access to life insurance, general insurance, investments (mutual funds, bonds, IPOs etc.), and rural saving accounts. ICICI Bank considers remittances a segue to offering clients other asset-building products such as savings and insurance. Through remittances, clients can also access better credit products and lending methodologies can gradually move away from group lending to individual loans.

ITC / E-Choupal / India⁷⁰
(Actor / Innovation / Country)

The Context. Lack of market information leaves many Indian farmers vulnerable. Soybeans, for example, are typically sold by farmers with small holdings to traders, who act as purchasing agents for buyers at a local, government-mandated marketplace, called a *mandi*. Farmers have only an approximate idea of price trends and have to accept the price offered them at auctions on the day that they bring their grain to the *mandi*. As a result, traders are well positioned to exploit both farmers and buyers through practices that sustain system-wide inefficiencies.

The Innovation. ITC is one of India's leading private companies, with annual revenues of \$2 billion. Its International Business Division was created in 1990 as an agricultural trading company, and it now generates \$150 million in revenues annually. In June 2000 the company launched an initiative⁷¹ that places computers with internet access in rural farming villages—these e-Choupals serve as both a social gathering place for exchange of information (*choupal* means gathering place in Hindi) and an e-commerce hub. The computer, typically housed in the farmer's house, is linked to the internet via phone lines or, increasingly, by a VSAT connection, and serves an average of 600 farmers in 10 surrounding villages within about a five kilometer radius. Each e-Choupal costs between \$3,000 and \$6,000 to set up and about \$100 per year to maintain. Using the system costs farmers nothing, but the host farmer, called a *sanchalak*, incurs some operating costs and is obligated by a public oath to serve the entire community; the *sanchalak* benefits from increased prestige and a commission paid him for all e-Choupal transactions. The farmers can use the computer to access daily closing prices on local *mandis*, as well as to track global price trends or find information about new farming techniques—either directly or, because many farmers are illiterate, via the *sanchalak*.

They also use the e-Choupal to order seed, fertilizer, and other products such as consumer goods from ITC or its partners, at prices lower than those available from village traders; the *sanchalak* typically aggregates the village demand for these products and transmits the order to an ITC representative. At harvest time, ITC offers to buy the crop directly from any farmer at the previous day's closing price; the farmer then transports his crop to an ITC processing center, where the crop is weighed electronically and assessed for quality. The farmer is then paid for the crop and a transport fee. "Bonus points," which are exchangeable for products that ITC sells, are given for crops with quality above the norm. In this way, the e-Choupal system bypasses the government-mandated trading *mandis*.

Business Case and the Development Impact. Farmers benefit from more accurate weighing, faster processing time, and prompt payment, and from access to a wide range of information, including accurate market price knowledge, and market trends, which

⁷⁰ Excerpted from Annamalai and Rao (2003, pp.1-2).

⁷¹ See www.echoupal.com.

help them decide when, where, and at what price to sell. Farmers selling directly to ITC through an e-Choupal typically receive a higher price for their crops than they would receive through the *mandi* system, on average about 2.5 percent higher (about \$6 per ton). The total benefit to farmers includes lower prices for inputs and other goods, higher yields, and a sense of empowerment. The e-Choupal system has had a measurable impact on what farmers chose to do: in areas covered by e-Choupals, the percentage of farmers planting soy has increased dramatically, from 50 to 90 percent in some regions, while the volume of soy marketed through *mandis* has dropped as much as half. At the same time, ITC benefits from net procurement costs that are about 2.5 percent lower (it saves the commission fee and part of the transport costs it would otherwise pay to traders who serve as its buying agents at the *mandi*) and it has more direct control over the quality of what it buys. The system also provides direct access to the farmer and to information about conditions on the ground, improving planning and building relationships that increase its security of supply. The company reports that it recovers its equipment costs from an e-Choupal in the first year of operation and that the venture as a whole is profitable.

In mid-2003, e-Choupal services reached more than 1 million farmers in nearly 11,000 villages, and the system is expanding rapidly.⁷² ITC gains additional benefits from using this network as a distribution channel for its products (and those of its partners) and a source of innovation for new products. For example, farmers can buy seeds, fertilizer, and some consumer goods at the ITC processing center, when they bring in their grain. *Sanchalaks* often aggregate village demand for some products and place a single order, lowering ITC's logistic costs. The system is also a channel for soil testing services and for educational efforts to help farmers improve crop quality. ITC is also exploring partnering with banks to offer farmers access to credit, insurance, and other services that are not currently offered or are prohibitively expensive. Moreover, farmers are beginning to suggest—and in some cases, demand—that ITC supply new products or services or expand into additional crops, such as onions and potatoes. Thus farmers are becoming a source of product innovation for ITC.

⁷² According to ITC e-Choupal is currently covering 9 states and 38,000 villages in India with 6,500 e-Choupal installations. Today e-Choupal reaches 3.5 million farmers (www.itcportal.com/ruraldevp_philosophy/echoupal.htm, accessed June 1, 2007).

Kenya Agricultural Commodity Exchange Limited (KACE) / Market
Information System (MIS) / Kenya⁷³
(Actor / Innovation / Country)

The Context. The lack of market information represents a significant impediment to market access especially for poor smallholder farmers. For any one crop, the marketing chain consists of multiple middlemen, each taking a margin at every stage of the chain, and price variations in space and time are often large and erratic. The traditional approach to providing agricultural information is through public extension services, but in Africa extension services do not work effectively, and in many instances they have collapsed. The authors of a World Bank review of past extension projects in developing countries conclude that although public extension organizations are common in developing economies, they are often inadequately funded and their effectiveness is limited by many administrative and design deficiencies and challenges.⁷⁴ There is a demand for market information services in agricultural communities, presenting a commercial opportunity for the private sector to invest in the provision of these services.

The Innovation. Starting in 1997, the Kenya Agricultural Commodity Exchange Limited (KACE), a private sector firm⁷⁵, has developed a market information system (MIS)⁷⁶ for collecting, processing and disseminating relevant and timely market information especially targeted at smallholder farmers in Kenya. KACE collects, processes, updates and disseminates market information daily to farmers and other market intermediaries through the MIS. Market information includes prices of commodities in different markets, and commodity offers to sell and bids to buy, as well as short extension messages. Through the offers and bids function, farmers are able to advertise their stocks (offers) for sale or their demands (bids) for farm inputs such as fertilizers and improved seeds. KACE monitors the usage of the MIS, and receives feedback which it uses to continuously refine and improve the system.

As part of the MIS KACE has also developed a short message service (SMS) market information product branded as *SMS Sokoni* in partnership with a leading mobile phone service provider. A farmer anywhere in the country where the Safaricom mobile phone network exists can in easy steps access market information such as: a) commodity prices in different markets; b) who is buying or selling what commodity, at what prices, as well as where and when, and c) extension messages using their Safaricom mobile phones. The user receives and pays for the SMS messages to the Safaricom Ltd. SMS is

⁷³ Excerpted from Mukhebi (2004, pp.1-13).

⁷⁴ See Anderson and Feder (2004).

⁷⁵ See www.kacekenya.com/home/index.asp (accessed June 1, 2007).

⁷⁶ The MIS involves harnessing the power of modern ICTs to empower smallholder farmers to access markets more efficiently and profitably. The components of the KACE MIS are: rural based Market Information Points (MIPs), Market Information Centres (MICs), mobile phone Short Messaging Service (SMS), Interactive Voice Response (IVR) service, internet based Regional Commodity Trade and Information system (RECOTIS) and a Website (www.kacekenya.com).

easy to use, reliable, convenient and low-cost.⁷⁷ The information is updated every day and hence is most current and timely to the user. KACE is in the process of developing a similar service with the Kencell Communications Ltd., the second mobile phone service provider in the country. This enables further expanded access given that almost half of the rural mobile phone subscribers are on the Kencell network, while the other half are on the Safaricom network.

Business Case and the Development Impact. There is anecdotal evidence suggesting that the bargaining power of the smallholder farmer has been enhanced. For example, in Bungoma District in western Kenya, farmers who sold maize via the MIS achieved a higher average price of Ksh 1,219 per 90-kg bag (\$181 per MT) as compared to those who did not at Ksh 1,000 per bag (\$148 per MT) (22 percent more). In addition, during last year's maize harvesting season in the District, the average farm-gate price of maize at Ksh 1,000 was 150 percent higher compared to lows of Ksh 400 per bag (\$59 per MT) during previous harvest seasons. Furthermore, there is preliminary evidence from data collected in selected three markets that spatial arbitrage in the price of maize (a major staple crop in Kenya) between markets is narrowing over time. Although the exact contribution of KACE is hard to quantify at the present, planned monitoring and evaluation activities will enable such calculations of impact to be made in the future activities.

As a private sector firm KACE initiated the development of the MIS from its own share capital. The initiative has attracted funding support through various projects from a number of development partners.⁷⁸ However, the long-term sustainability of KACE MIS is based on generation of sufficient revenue from the services rendered. KACE has introduced modest fees and commissions on the volume of commodity trade conducted through MIPs to train farmers and other system users to pay for the services rendered. In addition, KACE has signed revenue sharing agreements with SMS and IVR service providers. It is planned that when the MIS services are fully developed, promoted and widely used by clientele, they will generate sufficient revenue to sustain themselves.

⁷⁷ Each SMS message received currently costs the user Ksh 7, paid to Safaricom Limited.

⁷⁸ These include the USAID Mission in Kenya, the ACDI/VOCA of the USA, the Technical Centre for Agricultural and Rural Cooperation (CTA), the Rockefeller Foundation, CAB International, the International Crops Research Institute for Semi Arid Tropics (ICRISAT), Kenya Business Development Services, and the Regional Land Management Unit (RELMA in ICRAF).

KickStart / Real Options Strategy / Kenya⁷⁹
(Actor / Innovation / Country)

The Context. Of the 1.1 billion people who live on less than \$1 per day worldwide, fully 70 percent are small-scale rural farmers who are trying to scrape out an existence on an acre or so of unproductive land. In sub-Saharan Africa over 80 percent of the poor are rural farmers.

The Innovation. KickStart is a nonprofit social enterprise that has for the past fifteen years employed design principles to address the poverty challenge in Kenya and Tanzania, effectively enhancing farmers' access to different technologies.⁸⁰ It does this by designing and marketing low-cost pumps and other capital equipment that have been used by thousands of farmers to establish highly profitable commercial enterprises. Much as microfinance loans make possible a wide variety of businesses, so, too, do KickStart technologies. By simply making KickStart technologies accessible to the poor through local market outlets, KickStart provides an enabling tool that expands the poor's opportunity set and, consequently, their ability to provide for their own needs. KickStart's best-selling tools are foot-powered irrigation pumps (widely known as MoneyMaker pumps) that enable poor farmers to switch from subsistence to commercial irrigated farming.⁸¹

Perhaps KickStart's main innovation is not in its products, but in its business strategy.⁸² It employs a flexible business strategy with feedback mechanisms which allow rapid scaling up or down of experimental product lines. This "real options strategy" underpins a trial-and-error approach in producing durable, culturally-sensitive, mechanically operated technologies within a highly flexible organizational design that facilitates rapid, low-cost learning. Thus KickStart is able to maintain a portfolio of products that include an oilseed press, the soil block press, the treadle pump, and the hay baler, among others. The organization continues to develop additional technologies, many of which leverage a common compression technology. The products share a suite of common characteristics: all are manually operated and require, at most, two people to function; they are ergonomically designed and easy to operate; and durability and ease of repair are made possible by designs that require few moving parts. By maintaining a portfolio of technologies, KickStart gains greater market knowledge through its multiple touch points with the market and increases the likelihood that a successful match will occur.

Business Case and the Development Impact. Between 1995 and 1999 KickStart's efforts were gaining traction in Kenya. The enterprise started to create significant impacts on poverty while at the same time working to continually refine both

⁷⁹ Excerpted from Fisher (2006, pp.9-30) unless otherwise noted.

⁸⁰ The following paragraph was partly excerpted from Simanis and Hart (2006, pp.43-44).

⁸¹ KickStart's Original MoneyMaker pump was introduced in Kenya in September 1996, see <http://kickstart.org/tech/pumps>.

⁸² The following paragraph was excerpted from Simanis and Hart (2006, pp.49-51).

KickStart's tools and model. In 2000 it started a program in Tanzania—a country even poorer than Kenya and one with a socialist and much less entrepreneurial history. With funds from British DFID, KickStart established an irrigation pump manufacturing, wholesale, and retail network in Tanzania, and to date has sold more than 14,000 pumps there. In 2005 KickStart raised funds from USAID to start a similar program in Mali in West Africa. Plans are underway to expand into as many as four new African countries, including Ghana, whose government has taken note of KickStart's impact on the GDP of Kenya and Tanzania. KickStart is also implementing a business-to-business model of sales to other NGOs to expand its impacts to the rest of the developing world.

KickStart's MoneyMaker pumps are used in a variety of income-generating activities—from expanding food crop production, to launching plant nursery business, to washing cars and even to providing and selling drinking water.⁸³ The foot-powered irrigation pumps enable poor farmers to switch from subsistence to commercial irrigated farming. With irrigation, entrepreneurial farmers can grow three or four crops of high-value crops per year, greatly increase their yields, and harvest the crops in the off-season, when the prices are highest. The average net farm income of farmers who use KickStart's pumps increases by a factor of ten—from \$110 to \$1,100 per year. Some 30 percent of the pumps are also lent out by their owners to even poorer family members or neighbors, who use them on their own small farms. The new incomes enable the users to afford better nutrition, education, health care and housing for their families, and for the first time to climb out of poverty and plan for their futures. More than 50,000 children are either in school for the first time or in improved schools as a result of KickStart's work. And over 5,000 pump buyers have used their new incomes to build new or improved houses. In addition, KickStart pumps enable families to improve their hygiene and sanitation. Because they make money by irrigating they can now afford to dig a well on their plots of land. Thus the pump gives them not only enough water for irrigation but also plenty of extra for increased home consumption and hygiene. However, for poor farmers the current initial \$120 investment for a pump, hose pipe, and seed is a relatively costly investment which the poorest under them are not able to afford. KickStart is aware of this. Through the initial high price KickStart tries to recover the initial technology development and market development costs. The company's aim is to be able to lower prices to reach less-well-off customers.

⁸³ Excerpted from Simanis and Hart (2006, p.44).

Pride Africa / DrumNet / Kenya⁸⁴

(Actor / Innovation / Country)

The Context. More than 90 percent of smallholder farmers in all but the arid regions of Kenya produce horticultural products. Despite high levels of production, 90 percent of horticulture is consumed domestically and less than 2 percent of smallholder farmers produce for export. The share of smallholder participation in exports has fallen from around 75 percent in the early 1990s to current levels of less than 50 percent. The minimal levels of horticulture exports and the declining export share by smallholder farmers reflect limited access to credit due to: High transaction costs and default rates for banks and microfinance organizations; Mixed results of exporter's out-grower credit schemes; Unreliability of self help groups (SHGs) and co-ops as credit providers; Reduced efficiency of agrovendors when required to sell on credit. This limited availability of credit, coupled with a shortage of information about exports' markets, are major hurdles for accessing export markets for horticultural products. The recent imposition of the European Good Agriculture Practices (EUROPGAP) requirements on food safety only poses additional quality challenges to Kenya's horticultural producers.

The Innovation. Led by Pride Africa, a U.S.-based NGO, DrumNet, which was started in October 2003, is an emerging network of rural area farm business support centers delivering agricultural extension, credit, and marketing services to smallholder horticultural farmers.⁸⁵ DrumNet's program has two main components: First, a cashless micro-credit program that links commercial banks, smallholder farmers, and retail providers of farm inputs and second, market services offered through an integrated marketing and payment system with large-scale buyers, farmers, transporters, and field agents.

Farmers participate in the cashless microcredit-program by opening a personal savings account with a local commercial bank and making the first cash contribution to the Transaction Insurance Fund (TIF), which serves as collateral for the initial line of credit. By contributing to the TIF, DrumNet members organized into co-guaranteed solidarity groups that can utilize their DrumNet transaction card to purchase inputs on credit with participating local suppliers. The suppliers, trained in basic DrumNet record keeping, submit receipts to DrumNet and are paid in 2-week cycles from a DrumNet credit account. Because DrumNet also markets the product, DrumNet deducts principal and interest payments from farmer net returns at harvest time and tracks credit history. It also enforces group guarantees, if required.

⁸⁴ Excerpted from World Bank (2005, pp.27-72) unless otherwise noted.

⁸⁵ In an evaluation conducted with DrumNet clients in the Kenyan Gichugu division farmers reported a median household income of Ksh 15,000 annually from the sale of crops. The median of total household income from all sources (including sale of crops) was Ksh 33,000 annually (Ashraf, Giné and Karlan 2005, pp.10-11).

Within the integrated marketing and payment system DrumNet negotiates export contracts on behalf of DrumNet producers that typically pay 10 – 15 percent higher than the prices offered by local traders, and provides centralized collection points. Once the produce is delivered to the exporter at collection points, the exporter pays DrumNet, which in turn will deduct any loan repayment, pre-specified TIF percentage, and credits the rest to the individual bank account of the farmer. Central to the smooth functioning of the DrumNet system is the application of technologies such as mobile phones and short message service (SMS), computers, and smart cards to maintain effective communication among all participants. DrumNet also provides training courses on quality and safety of produce and ensures through its cashless line of credit with selected input providers that farmers only use inputs certified by EUROPGAP, thus enhancing the marketability of their products.

Business Case and the Development Impact. DrumNet has had success in marketing high-value, export-quality horticultural products and seeks to expand its operations to two additional regions. Since commencement in October 2003, DrumNet has facilitated more than 7,700 marketing transactions on behalf of the now currently active 647 members and has generated more than Ksh 2.9 million (\$38,658). In total, this represents more than 75 metric tons of produce moved between smallholder farms and advantageous markets. During the past year, DrumNet has provided credit in the form of reimbursement to input providers for 485 individual farmers (Ksh 1.3 million or \$16,250). Repayment rates have been high and member contributions to the TIF accounts high (more than Ksh 400,000) thanks to the model's ability to collect repayments directly from the net proceeds of marketing transactions.

In terms of impact, evidence from a randomized control evaluation has shown that farmers strongly prefer DrumNet's linking of credit to marketing services over the provision of standalone market services. DrumNet also brings about an indirect but important benefit through the transfer of information to farmers. DrumNet staff distribute accurate pricing data and other materials, address concerns of farmers, and encourage the participation of farmers in their programs through their local offices and mobile phones communication. Despite the success of the approach, challenges remain for DrumNet. DrumNet has not yet covered its costs. By mid 2005, DrumNet's original office plans on serving more than 1,000 farmers, at which point the office will be covering its local costs.⁸⁶ To be profitable and sustainable in the long term, DrumNet must achieve economies of scale with regard to number of farmers, produce, and loans.

⁸⁶ In Kerugoya, DrumNet is carrying out its activities with financial assistance from the Canadian International Development Research Centre (IDRC). During the months of June, July, and August of 2004, the DrumNet office in Kerugoya had 500 transacting members and was able to generate revenues sufficient to match two-thirds of the costs associated with that business unit. Thus, the assumption that a DrumNet office, actively serving 1,000 farmers, could generate fee and commission income sufficient to cover local costs seems to be confirmed.

Proctor & Gamble / PuR Purifier of Water / Developing Countries⁸⁷

(Actor / Innovation / Country)

The Context. More than 1 billion people lack access to safe water, and an estimated 2 million children die each year because of diarrheal diseases resulting from a lack of safe water.⁸⁸ However, providing safe piped water to dispersed populations in rural areas of developing countries can be prohibitively expensive for governments, donors, and private utilities. Meanwhile, in urban areas, rapid population growth and migrations strain existing water and sanitary infrastructures and create enormous problems in planning and constructing new infrastructure. Where providers cannot guarantee water quality at the point of supply, or where it cannot be guaranteed at the point of use, because of contamination during collection, transport, and storage, consumers face significant health risks.

The Innovation. A complementary approach to providing piped-treated water is through treatment of drinking water directly in people's homes. To develop a new point-of-use (POU) technology that meets the needs and challenges of people without access to safe drinking water, the Procter & Gamble Health Sciences Institute worked in partnership with the US Centers for Disease Control and Prevention (CDC). P&G's PuR Purifier of Water, introduced in 2000, is a low cost and simple-to-use in-home water purification technology that visually clarifies the water and reduces pathogenic bacteria, viruses, and parasites to result in drinking water that meets World Health Organization guidelines.⁸⁹ The PuR product uses the same ingredients as those in municipal water systems, but is reverse engineered to effectively be a mini-water treatment plant in a sachet.⁹⁰ Convenient to store over long periods of time the small sachets can be kept for emergency use or consumers can buy many without it being cumbersome. One small sachet, costing about \$0.10 in the commercial model, will treat 10 liters of water (enough drinking water for an average family for two days). PuR can also be bought in bulk quantities for use such as emergency disasters or miniature treatment plants.

The water purification process involves simple implements that consumers have in their homes. The application requires five simple steps: Add 1 sachet to 10 liters of water and stir to begin process of separating the cleaned water from the murky masses; Stir water for 5 minutes until clear; Filter water through a cloth and dispose of separated floc in the latrine; Let clear water stand for 20 minutes to allow for complete disinfection; Store in a suitable container to prevent recontamination. This POU model, combined with

⁸⁷ Excerpted from WBCSD (2006, pp.1-5) unless otherwise noted.

⁸⁸ The following paragraph was partly excerpted from Mintz et al. (2001, p.1566).

⁸⁹ This phrase was excerpted from P&G Health Science Institute (www.pghsi.com/safewater/pdf/haiti_cleanwater_gbp.pdf, accessed June 1, 2007).

⁹⁰ A small sachet of powdered product visibly separates the cleaned water from the murky masses while providing residual chlorination. It uses ingredients used in municipal treatment plants including ferric sulphate to remove phosphate and calcium hypochlorite as a disinfectant, it provides superiority to chlorine alone in performance in turbid waters and reduction of organics including humic acid (a fertilizer) and DDT (an insecticide), as well as heavy metals and remains stable, providing potential for long-term consumer use as well as for providing emergency water.

safe storage, has the advantages of cost, ease of use, immediate availability and ease of distribution to reach rural areas.

Business Case and the Development Impact. The World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) have recognized that POU water treatment and safe storage at the household level can provide significant health benefits by reducing the incidence of diarrhea in developing countries. Laboratory evaluations in test waters demonstrate that P&G’s treatment system effectively reduces the levels of representative waterborne bacteria, viruses and parasitic pathogens from test waters. Two health intervention trials conducted by the CDC in rural Guatemala demonstrate that the combination system can significantly reduce the incidence of diarrhea. In addition to microbial contaminants, the treatment system increases water clearness and removes a variety of chemical contaminants such as arsenic, making it suitable for treating a wide variety of water sources in developing countries. Because the treatment makes water significantly clearer, the amount of microbes in the water is less than compared to disinfection alone in highly turbid waters, thus providing a strong visual signal to consumers that the treatment is effectively cleaning the water. Consumers describing their experience with PuR reported clearer water and find the process simple to use. They also find the pricing (\$US0.01 per liter of treated water) acceptable. It is clear, however, that educational efforts including product demonstrations are necessary to encourage a consumer habit change.

For disaster relief, the company provides PuR to international aid agencies at cost. To supply PuR on a sustainable basis P&G initially used a conventional commercial model, but this had limited success since there are heavy upfront investments needed for awareness raising and health education. P&G is now using a ”social market” model that involves partnering with NGOs such as Population Services International who have core competencies that P&G lacks in, local distribution, health education, etc. Since its introduction, PuR has provided 260 million liters of clean drinking water. Sustainable markets have been set up in Pakistan, Kenya, Uganda, Haiti and the Dominican Republic. It has been successfully used for disaster relief in many countries including Bangladesh, Zimbabwe, Sudan, Ethiopia, Iraq and in the tsunami ravaged region of South East Asia.

Because of the potential to dramatically improve the health of vulnerable populations this approach is receiving increased attention including the recent announcement of the collaboration of more than 20 organizations, including P&G, the International Council of Nurses (ICN) and the CDC, in the International Network to Promote Household Water Treatment and Safe Storage.

PRODEM FFP / Smart Automatic Teller Machines (Smart ATMs) /
Bolivia⁹¹
(Actor / Innovation / Country)

The Context. Today there are approximately 800,000 micro-enterprises in Bolivia, largely urban, and mostly in the informal economy. Despite their need for financial services, many of these entrepreneurs do not have access to financial services, largely because of their informal status. Even those microentrepreneurs who pay taxes regularly and are therefore part of the formal economy are reluctant to use traditional banking services because of rampant discrimination (and poor service) against micro-entrepreneurs, especially indigenous women. Instead, these businesspeople turn to *usurers*, informal moneylenders, who charge extremely high interest rates and use very aggressive collection methods, to meet their financing needs.

The Innovation. PRODEM Private Financial Fund (PRODEM FFP) is a regulated, privately held financial fund constituted in Bolivia in 1999, serving low-income communities and the entrepreneurs and micro- to medium-size enterprises that constitute Bolivia's informal economy, by offering a wide range of savings, credit, and money transfer services. Its 65-branch network is the largest in the country and spans both urban and, especially, rural areas. To expand its market and improve its services, PRODEM FFP has sought to deploy new technology-based products and systems. Finding that existing solutions are either costly or unworkable in its market, PRODEM FFP decided to build its own—focusing on molding a product to fit its customers' needs and lifestyles. The resulting solution employs smart cards and digital fingerprint recognition technology, now implemented in all PRODEM FFP branch offices and Smart ATMs, as well as stand-alone, voice-driven Smart ATMs in local languages with color-coded touch screens.⁹²

Combining smart cards with digital fingerprint recognition allows PRODEM FFP to offer secure access to Smart ATMs even in the most remote areas of Bolivia. The cost of the Smart ATM machines is kept low by keeping the system relatively simple, while still meeting the customers' most important need of having 24-hour access to their money.⁹³ The smart cards, in turn, can be used at any PRODEM FFP branch to withdraw or deposit funds, without filling out a deposit slip or withdrawal form—a significant advantage for customers who cannot read or write. Since digital images of customers' fingerprints are stored in PRODEM FFP's customer service system, customers can also “sign their name” by making ink impressions with their fingers. In effect, fingerprint

⁹¹ Excerpted from Hernandez and Mugica (2003, pp.1-6) unless otherwise noted.

⁹² According to CGAP, Prodem FFP introduced these ATMs in 2001, one year after deploying smart cards. See www.cgap.org/docs/IT_smart_card.html and www.cgap.org/docs/IT_atm.html (accessed June 1, 2007).

⁹³ The ability to deposit money is less urgent for customers so this feature was not designed into the current system. Depositing funds is a more complex process than disbursing withdrawals, since the system would need to accept bills in all denominations. By only providing withdrawal and account inquiry services, the system only needs to manage \$20 and BOB100 bills. Notwithstanding, PRODEM FFP and its technology partners have already started planning the next version of the Smart ATM that may include the ability to accept deposits.

recognition replaces a 4-digit PIN with the equivalent of a 300-digit PIN, creating a biometric identity. A PRODEM FFP smart card savings account has a \$7 (BOB 54) annual fee and no transaction fees. While the account can be in US dollars, *bolivianos*, or both, the annual fee is paid in dollars.

Business Case and the Development Impact. PRODEM FFP's Smart ATM design not only takes the customer's ethnicity into account and is easy for virtually all Bolivians to use, but it also broadens the company's market.⁹⁴ Pilot tests showed that the Smart ATMs attracted both rural customers, who cannot normally come to a branch during business hours, as well as more affluent urban customers. In addition, since the customer's account balance is stored in the smart card, it is not necessary for the Smart ATM to connect to the internet in order to complete a transaction, a feature of the system that is essential for ATMs to be useful in many parts of rural Bolivia that lack the technical infrastructure for a wide-reaching, online network. The Smart ATMs are also cost-effective; they are assembled in Bolivia with both proprietary technology and commercially available components and cost less than half the price of a traditional ATM with more limited functionality.

Access to credit and other financial services is critical to micro-enterprise formation, job creation, and increased incomes in the informal economy. The PRODEM FFP solution breaks a number of paradigms often associated with microfinance, demonstrating how these services can be provided efficiently even in poor, rural communities with inadequate telecommunications infrastructure. Moreover, the PRODEM FFP solution respects and empowers indigenous communities, overcoming the problem of illiteracy and serving customers in multiple languages. Finally, because the PRODEM FFP solution is low-cost and profitable, it is also potentially scalable and replicable in other developing regions. PRODEM FFP itself is exploring expansion to other Latin American markets, and its technology partner has been approached about licensing its technology in Africa and Asia.

Customers seem to like the perceived security, ease of access to their money, and status of having a smart card.⁹⁵ Today, Prodem has 52 ATMs, along with 40 point-of-sale (POS) devices at gas stations and supermarkets, where clients can use their smart cards to access funds 24 hours a day, seven days a week. Customers have found these user-friendly ATMs and POSs attractive, with nearly 50,000 smart card savings accounts by 2003 (out of a total of nearly 62,000 savers). An analysis of savings patterns revealed that the machines encouraged clients to save more often, whenever they have cash available, increasing deposits in regular savings accounts from \$102,000 in 2000 to \$19 million as of June 2005.

⁹⁴ PRODEM FFP provides products and services to economic segments B through D of the Bolivian population (those with annual household incomes between \$2,000 and \$25,000). While PRODEM FFP does serve the majority of Bolivia's low-income market, households with annual incomes of less than \$2,000 are largely served by nonprofit microfinance organizations (Bazoberry as quoted by Hernandez and Mugica 2003, p.4).

⁹⁵ The following paragraph was excerpted from Helms (2006, p.116).

Sanofi-Aventis / Cheaper Malaria Pill / Developing Countries⁹⁶
(Actor / Innovation / Country)

The Context. The vast majority of malaria deaths occur in Africa, south of the Sahara, where malaria also presents major obstacles to social and economic development. One of the greatest challenges facing Africa in the fight against malaria is drug resistance. Resistance to chloroquine, the cheapest and most widely used antimalarial, is common throughout Africa (particularly in southern and eastern parts of the continent). Resistance to sulfadoxine-pyrimethamine (SP), often seen as the first and least expensive alternative to chloroquine, is also increasing in east and southern Africa. As a result of these trends, many countries have to change their treatment policies and use drugs which are more expensive, including combinations of drugs, which it is hoped will slow the development of resistance. However, this increased cost is also posing challenges in terms of extending access to these better drugs.

The Innovation. In March 2007, Sanofi-Aventis introduced a new, cheap, easy-to-take pill to treat malaria. It is the first product of an innovative partnership between an international drug company (Sanofi-Aventis) and a medical charity (the Drugs for Neglected Diseases Initiative started by Médecins Sans Frontières). The medicine, called ASAQ, is a pill combining *artemisinin*, invented in China using sweet wormwood and hailed as a miracle malaria drug, with *amodiaquine*, an older drug that still works in many malarial areas. A treatment will cost less than \$1 for adults and less than 50 cents for children. Adults with malaria will take only two pills a day for three days, and the pill will come in three smaller once-a-day sizes for infants, toddlers and youngsters. In Africa, malaria kills 3,000 babies and children each day, but combination drugs like this are not available for children under 11 pounds, and they require taking a larger number of pills each day, as many as 24 for some adult versions.

Sanofi-Aventis, the world's fourth-largest drug company, based in Paris, will sell the pill at cost to international health agencies like the WHO, UNICEF and the Global Fund for AIDS, Tuberculosis and Malaria. Sanofi has also decided not to seek any patents so the pills can be freely copied by generic companies like those in India. The drugs themselves are too old to patent, but the one-pill formulation could have been. Sanofi will also produce a branded version, called Coarsucam, for the private market, to be sold at three or four times the public price. It will be sold only in Africa, Indonesia and the Philippines, and not in the United States or Europe. Sanofi-Aventis will also meet with pharmacists' organizations in poor countries and give them incentives to sell Coarsucam at two different prices—at less than \$1 to very poor customers and \$3 to \$4 to wealthier ones.

Business Case and the Development Impact. Sanofi-Aventis has already experimented with the idea in six African countries, including Mali, Kenya and Madagascar, when selling its previous version of the drug combination (separate pills of

⁹⁶ Excerpted from McNeil, Jr. (2007).

each drug in a blister pack). The company will package the cheaper Coarsucam differently and have its sales staff check to make sure that pharmacies are not selling the cheap product at the high price. Neither version, at either price is expected to bring Sanofi much profit. However, one reason for keeping the price low was to remove the incentive for counterfeiters to produce fakes, which is a serious problem in Asia and a growing one across Africa. Fake malaria drugs—most offered as artemisinin—may be involved in up to 200,000 deaths from malaria each year.

Smart Communications Inc / Over-the-Air Payment System and Pre-Paid
Cards / Philippines⁹⁷
(Actor / Innovation / Country)

The Context. Among the three main challenges to overcome in providing telecommunications (mobile phone) services to low-income populations are: a) dealing with fragmented distribution channels; b) ensuring affordability for the low-income population; and c) gaining acceptability of the product.

The Innovation. From the start, Smart Communications Inc. of the Philippines⁹⁸ sought to adapt its provision technology to cater to the needs and specific characteristics of the low-income market.⁹⁹ To help address the first challenge—dealing with fragmented distribution channels—as well as to overcome the complexity of distributing pre-paid cards, Smart developed an innovative over-the-air (OTA) payment system. Called *Smart Load*, the new technology, which was introduced in May 2003,¹⁰⁰ allows a retailer to load a customer's airtime electronically. This helped minimize physical product distribution costs by creating a demand response stocking system for pre-paid airtime. Product distribution became faster, more efficient, and more secure. Retailers were able to sell air time via short message service (SMS) which could be done without having a store and any time of the day; this also gave consumers the ability to reload and purchase airtime even in remote rural locations. Retailers did not have to obtain stock and sell pre-paid cards.

In order to address the second challenge—ensuring affordability for the low-income population—and develop propositions to reach the low end of the market, and particularly consumers in the D and E segments, Smart developed prepaid pricing plans that offered airtime in sachet-like packages, with prices that were broken down into much smaller denominations than had previously been available (as low as 30 Philippine pesos or about \$0.50).

In addressing the third challenge—gaining acceptability of the product—Smart worked to ensure that the start-up costs associated with becoming a retailer were minimal. A prospective merchant only needed a bank account, a GSM handset, a retailer SIM card, costing P100 (\$1.79), and an initial load balance of just P300 (about \$6.00). With such low capital requirements several hundred thousand retailers were attracted as Smart partners in a few months, allowing the company to build an extensive retail footprint. In turn, these retailers reached a broader market area since sales could take place electronically, eliminating any need for consumers to travel to a retailer. In some cases merchants extended their existing on-credit purchasing model already used for

⁹⁷ Excerpted from Anderson and Billou (2006, pp.1-3) unless otherwise noted.

⁹⁸ Smart is a wholly-owned subsidiary of the Philippine Long Distance Telephone, PLDT. Smart was incorporated in 1991 (Smith 2004, p.4).

⁹⁹ See Smith (2004, p.1).

¹⁰⁰ Ibid.

staples and sachets to Smart Load. End retailers received a 15 percent mark-up on sales, and many indicated that they could make as much or more revenue selling OTA minutes as they could from other consumer goods sales. Smart also worked closely to train its seven largest national dealers, who in turn trained sub-dealers and others in the distribution channel such as Sari-Sari storeowners, students and housewives who could also become resellers. Marketing the product was boosted by micro-entrepreneurs who marketed OTA reloads directly to friends, family and members of their local communities.

Business Case and the Development Impact. Smart's consumer research revealed that mobile phone access could help to make the lives of their consumers easier (and possibly even allow them to save money), by reducing the need for travel to adjacent villages or towns to search for work or to check market prices for their agricultural produce. For example, the cost of a text message to an employer in an adjacent village to check for work availability could be as little as one-tenth the cost of traveling to that village by public transport. Other consumers indicated a desire to be able to seek medical advice or call a doctor.¹⁰¹

In early 2005 Philippine Long Distance Telephone Company (PLDT), Smart's parent organization, revealed a net profit of PHP 28.04 billion (\$512 million) for the full year 2004, up from PHP 2.12 billion (\$38 million) the previous year. The record results beat market expectations, thanks in the main to explosive growth in revenues coming from Smart's new customers in the D & E segments. Mobile penetration reached 30 percent at the end of 2004, is expected to reach 40 percent by end 2005, and some industry observers now predict penetration rates of 70 percent or more by 2008.

¹⁰¹ The affordability of mobile handsets was not a barrier to acceptability, as Smart's research revealed that second hand handsets were becoming readily available at \$35 to \$40.

VOXIVA / Alerta Platform / Peru¹⁰²
(Actor / Innovation / Country)

The Context. Disease detection and communication can inhibit the spread of infectious diseases. According to the World Health Organization (WHO), reporting systems are the intelligence network that underpins disease control and prevention. However, without this framework in place, it is impossible to track where diseases are occurring, measure progress in disease control targets, or provide an early warning system for outbreaks and the emergence of new diseases. In the specific case of Peru, the fundamental challenge faced by its Ministry of Health was to monitor new cases of disease from more than 6,000 health clinics spread across the country and respond in time to stem new outbreaks.

The Innovation. Launched in 2001, VOXIVA first deployed its *Alerta Platform* technology in Peru to facilitate real-time disease surveillance by rural government health workers.¹⁰³ Alerta allows front-line health workers to submit disease reports in real time from any phone or internet-connected device. Users receive an account number, personal identification number (PIN) and a plastic card with simple instructions and codes for all the diseases they need to report. From a phone, they dial a toll-free number to access the system. From the web, they go to VOXIVA's web site. Authorized users log on and follow instructions on a wallet-sized card or a simple voice-prompted menu and enter digital information about cases of disease and disaster incidents. They can attach additional information in voice files. Each user also has a voice mail account, which can be accessed when he or she logs on. Thus, rural health professionals are able to send and receive voice messages, even if they do not own a telephone. Users are also able to receive health alerts, information about diseases, vaccination programs, training opportunities, natural disasters, and so on.

Health authorities can monitor incoming cases through a web interface. Individual disease reports arrive in real time with full case details. Authorities can also listen to voice files recorded by the remote health workers. Data are available immediately, and health officials can export data to various programs for analysis and presentation. The system is operational 24 hours a day, seven days a week. Information is entered into the VOXIVA system directly, making it accessible at all levels simultaneously.

Business Case and the Development Impact. By calling into VOXIVA's system and pushing buttons on the phone, rural health workers can report new cases of disease systematically and in real time. Health authorities can see the information immediately via the internet, analyze the data, and use the system's communication and messaging

¹⁰² Excerpted from Prahalad (2005, pp.361-379).

¹⁰³ VOXIVA's initial investment came from socially minded sources: Ben Cohen of Ben & Jerry's Ice Cream (\$250,000) and the Markle Foundation (\$500,000). The funding for VOXIVA's first deployment, the Alerta disease surveillance system in Peru, came from the World Bank's InfoDev program for innovative uses of technology in economic development.

tools to respond. By leveraging the world's 2.5 billion phones, as well as the internet, VOXIVA's solutions have a much wider reach than internet-only solutions.

VOXIVA's Alerta Platform also makes disease surveillance cheaper and more efficient. An evaluation of the pilot by San Marcos University in Peru found that, as compared with the traditional system, Alerta required a substantially lower allocation of resources, lower operating costs, and resulted in a threefold increase in reporting coverage. Overall, the Alerta system required 40 percent lower costs of operations than the traditional paper system. The study also concluded that the use of voice mail for communications was 7.8 times less expensive than written communication.

Paul Meyer, co-founder of VOXIVA, contemplated starting VOXIVA as a nonprofit organization but concluded that only by creating a powerful economic model that leverages VOXIVA's technology and infrastructure across many applications and customers could the company scale and realize the full potential of its founding vision. However, developing recurring revenue business models that generate revenue from local economies remains one of VOXIVA's challenges. Voxiva has benefited greatly from its ability to win large, externally funded contracts to enter countries. Without the grant from the World Bank to launch Alerta, for example, it would never have had the resources to enter Peru. However, to build a lasting scalable business, it must develop solutions like Citizen's Alert in Peru and its patient-monitoring applications in the United States that generate stable recurring revenues.¹⁰⁴

¹⁰⁴ For more information on these projects, see www.voxiva.com.

WIZZIT Bank / M-Banking / South Africa¹⁰⁵
(Actor / Innovation / Country)

The Context. Access to financial services could help economically empower the poor, yet a number of obstacles hinder their access. Requirements like fixed monthly fees and minimum balances for maintaining bank accounts often discourage people whose monthly income is uncertain and instable. Traveling to distant bank branches also requires time and money, is an additional drain on the scarce resources of the poor. Lack of knowledge about the advantages of financial services can also be a constraint.

The Innovation. Mobile banking (m-banking) offers a way to expand access to financial services. In 2006, mobile phone users in developing countries started to outnumber those in developed countries. As mobile phone usage expands, so may opportunities to bank the unbanked. With m-banking, low-income people no longer need to use scarce time and financial resources to travel to distant bank branches. And since m-banking transactions cost far less to process than transactions at an automated teller machine (ATM) or branch, banks can make a profit handling even small money transfers and payments. One example of m-banking is WIZZIT, which is a startup mobile banking provider that offers a transaction banking account accessible via mobile phone and debit card. Launched in December 2004, it operates as a division of the South African Bank of Athens. WIZZIT targets the 16 million people in South Africa (48 percent of adults) who are unbanked or who have difficulty accessing formal financial services.

WIZZIT is a “virtual bank” and has no branches of its own. Customers use their mobile phones to make person-to-person payments, transfer money, purchase prepaid electricity, and buy airtime for a prepaid mobile phone subscription. WIZZIT also gives customers a Maestro branded debit card with which they can make purchases and get cash back at retail outlets and withdraw money at any South African ATM. Customers can also make cash deposits at any Absa Bank or Postbank branch. According to WIZZIT, this gives its customers access to more branches than any other bank in South Africa.

To overcome the price barrier and therefore to appeal to lower income customers, WIZZIT does not have a minimum balance requirement and does not charge fixed monthly fees. It uses a pay-as-you-go pricing model, with charges ranging from \$0.13 to \$0.66 per transaction depending on the type of transaction. Customers are charged \$5.26 to sign up. WIZZIT accounts cost considerably less than the lowest cost full-service bank accounts available and Mzansi accounts.¹⁰⁶ The WIZZIT account costs about \$6 per month.

WIZZIT uses no mass media advertising, such as TV commercials, which helps cut down on its costs. Instead, it markets its services through more than 2,000 “WIZZ

¹⁰⁵ Excerpted from Ivatury and Pickens (2006, pp.1-9) unless otherwise noted.

¹⁰⁶ Mzansi accounts are entry-level transactional bank accounts designed by South Africa’s banking sector especially for low-income customers.

Kids,” who are typically young individuals drawn from the lower income population, which WIZZIT views as its core market. WIZZ Kids educate potential customers about WIZZIT and earn a commission for each new customer. For new users, signing up is as easy as keying one’s national identification number into the mobile phone. WIZZIT provides customer support via a call center that is available 15 hours per day in the 11 official languages spoken in South Africa.

Business Case and the Development Impact. Since its launch in December 2004, WIZZIT has acquired more than 50,000 customers. Customers surveyed use WIZZIT because it is “cheaper” (70 percent), “safe” (69 percent), “convenient” (68 percent), and “fast” (68 percent). A WIZZIT account is as much as one-third cheaper as an account at one of South Africa’s big retail banks for the same basket of services. However, only 6 percent of poor WIZZIT user households surveyed are considered “destitute”, even as 16 percent of all South African households (and 23 percent of nonuser households) are destitute. It is still too early to tell whether it will continue to appeal mainly to the more advantaged portion of the low-income segment or whether these “early adopters” will be replaced by a broader base of low-income customers.

Based on growth in customers and transactions it is expected that WIZZIT will break even in 2006.¹⁰⁷ Transaction volumes at the lower end of the market tend to build slowly as customers get used to the technology and banking in general; it is expected that with increased familiarity with the technology, monthly transaction usage would increase, thus improving the financial viability of the service.¹⁰⁸ WIZZIT also provides opportunity for cross-selling. Later iterations of the service will include paying water bills and even applying for loans. Plans are underway to expand into other countries in Africa, primarily by partnering with innovative existing banks and offering either WIZZIT branding and packaging or just the technology.

¹⁰⁷ The following paragraph was excerpted from Bartoszek (2006).

¹⁰⁸ In addition to transaction fees, WIZZIT earns commissions from third party billers and interest on customer deposits.

The Context. Economic growth prospects of developing countries are negatively impacted by external shocks. The lack of coherent and timely response to shocks coupled with indirect impacts on growth and investment compound the cost of direct physical damage. Uninsured enterprises also do not develop their full earnings potential because they engage in low-risk/low-return activities to minimize downside risks.

The Innovation. The Global Index Insurance Facility (GIIF) seeks to close the gap between developing countries demanding access to insurance products for better risk management, and global insurance (and reinsurance) markets. This Facility seeks to catalyze a commercial market for index-based insurance products in developing countries by “crowding in” the private sector. By pooling smaller insurance transactions its goal is to scale up risk transfer out of developing countries. The Facility would reinsure against indexable catastrophic risks such as commodity prices and weather fluctuations (e.g. precipitation). It may also cover cyclone tracks / hurricanes, earthquake indices (e.g. Richter scale) or any other related index that meet eligibility criteria (objective, measurable, transparent, sustainable, verifiable, etc.), where no reasonable commercial cover is available.

The GIIF will be a private sector joint stock company, operated on proper commercial lines with a clear objective to generate an operational return on equity commensurate with the risks. It will be managed by a small, dedicated team provided by the lead private sector sponsor – a leading, international reinsurance group experienced in the disaster and weather insurance market. The sponsor will be responsible for ensuring proper technology is in place to assure the technical and financial sustainability of the vehicle. The limited capital base of the vehicle is intended to encourage the risk taking of other international market players. The market development role of the GIIF may be transitory and aimed at jumpstarting local index-based insurance markets and promoting efficiency by lowering the risk margins in developing countries. At the local level the GIIF will promote capacity development of the financial sector. The Facility would (re)insure governments and properly registered banks and primary insurers in developing countries. Eligible governments would need to couple the risk transfer with a proper country-level risk management framework.

Business Case and Development Impact. This innovation is presently being developed; hence the discussion here focuses on potential outcomes. For instance, potential effective demand for GIIF intermediation is very difficult to assess due to the nascent nature of index-based insurance markets in developing countries. However, at least with regard to disaster risk products and weather risk products, it is estimated that total annual risk that could be transferred to the market ranges between \$0.2 billion and \$11.7 billion. A rough potential GIIF pipeline overview, based only on the projects led by

¹⁰⁹ Excerpted from World Bank (2006, pp.1-4).

the Commodity Risk Management Group (CRMG) Technical Assistance (TA) programs, suggests overall expected volumes of risk of \$136 million in 2006, \$214 million in 2007 and \$302 in 2008, translating into premium volumes of respectively \$12 million, \$19 million and \$24 million.

Following the start-up phase of the GIIF, it is expected that the market for developing country risks will be sufficiently developed and competitive, to offer risk management products to end-user countries and clients at a reasonable cost. This will allow for the buy-out of the public interest in the GIIF by the private lead sponsor and other private parties, such as institutional investors. The expected exit time for IFC (International Finance Corporation) is 7-10 years.