

# Executive Summary



## The Broadband Effect

Enhancing Market-based Solutions  
for the Base of the Pyramid



Prepared by Hystra  
for Opportunities for the Majority at the Inter-American Development Bank

# Foreword

Broadband technology is a powerful tool. As shown in a study by the Inter-American Development Bank (IDB), an increase of broadband penetration by 10 per cent is associated with an average increase in GDP of 3.2 percent and in productivity of 2.6 percentage points. Private companies that have adopted the use of Internet technology in their businesses have an average increase in profitability of 10 percent, according to the McKinsey Global Institute. Even more compelling is the potential impact that broadband can have on the base of the pyramid (BOP), a segment of the population previously excluded from markets, and which lacks access to quality goods and services such as financial services, education, and health.

Broadband has facilitated the development of new business models that are more effective and efficient in terms of accessing, creating, and distributing goods and services to the BOP. A variety of private-sector-led broadband initiatives involving the BOP around the world have demonstrated profitability, while also providing social and economic returns along the value chain. The positive results are visible in highly innovative business models across sectors that use broadband to deliver solutions to the BOP. Without the use of such technology, these solutions in some cases would not be available to this segment of the population.

The IDB's Opportunities for the Majority (OMJ) and Broadband Initiative have come together to examine, at a global level, how companies that serve the BOP are deploying the use of broadband to improve the efficiency of their operations and better reach this market segment. This report sheds light on these broadband-enabled BOP business models, the ecosystem in which they operate the benefits and challenges of broadband adoption, and the role of public policy and regulation.

The business cases studies therein are sustainable models that directly target the BOP and are enhanced by the use of broadband- and Internet-enabled technologies. The case studies come from a variety of developing economies in different regions around the world, as well as from different sectors such as agriculture, health, education, and financial services.

Although these businesses have greatly benefited from the adoption of broadband, the report also looks at related challenges and limitation that have to be addressed. In most cases, the most pressing challenge is the investment required where broadband infrastructure is not available, and in those where such infrastructure exists, the costs for companies and BOP users to adopt the technology, which is known as "the last mile." To overcome these challenges, it is also important to develop a robust strategic regulatory framework and efficient public policies in partnership with private sector initiatives for the BOP.

The present study highlights both the benefits of broadband use by BOP businesses, as well as the main public policies and regulations that are needed to improve accessibility to the technology, therefore, promote its use among these types of firms. It also provides examples of how the private and public sectors have effectively collaborated to achieve this goal.

Broadband can greatly enhance market-based solutions for the BOP and improve lives among this population group. Some pioneers have taken the leap and seen how the use of broadband gives them a competitive edge, among other positive results. This report provides successful examples, and a comprehensive analysis of the benefits and challenges of broadband use by BOP firms. These models are still new, and there is still a great opportunity for other companies to continue to innovate, which would further develop the BOP business sector and ultimately benefit the lives of people at the BOP.



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Over the past decade, many organizations have leveraged newly available broadband to set up sustainable projects that better include the base of the pyramid (BOP) in economic value chains as clients, producers, or employees. As a result, the Inter-American Development Bank (IDB) decided to commission a study to analyze the impact of broadband across value chains on the BOP.

## Broadband-enabled Business Models by Sector and Geography

Drawing on Hystra's (2011) report on information and communication technology (ICT) for the BOP, the current study identified and analyzed 368 projects that provide financial, educational, agriculture, and health services to the BOP via ICT. Two-thirds of these projects use data connectivity and/or broadband, while the last third are only voice- and SMS-based. Key facts about those data-enabled projects include the following.

**Market mechanisms.** Only 39 percent rely on tested market-based mechanisms, i.e., receive revenues beyond grants and subsidies and have gone beyond the lab/pre-pilot stage. This

analysis has mainly focused on those as they have the most chances of being sustainable over the long term.

**Geography.** In terms of geography, Asia has the largest proportion of market-based projects (57 percent of the total of 72 projects). Africa ranks first in terms of the number of data connectivity and broadband projects (93), but 78 percent of them are grant-based, while Latin America lags considerably behind with only 30 projects.

**Sectors.** In terms of sectors, agriculture has the highest number of market-based projects (24 out of 53); while the financial services sector has the highest proportion of such projects (70 percent). This probably stems from the fact that in these two sectors, data- or broadband-enabled services can bring immediate economic benefits such as lower-cost money transfers or higher prices at which to sell one's products thanks to market information. One sector that seems to have recently benefited from developments in broadband is education, where the number of projects (47) has increased the most since 2011, although nearly two-thirds are still grant-based.

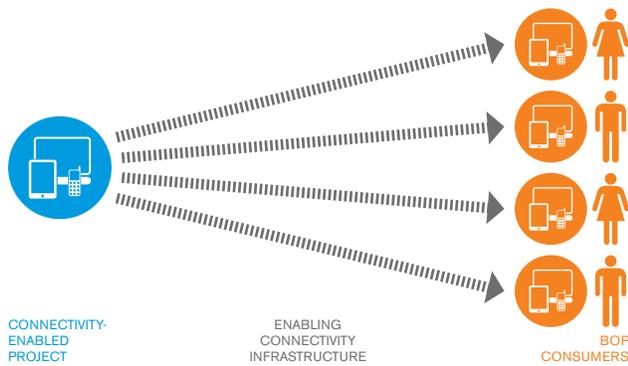


Enova (local agent model)

# Three Market-based, Broadband-enabled Business Models

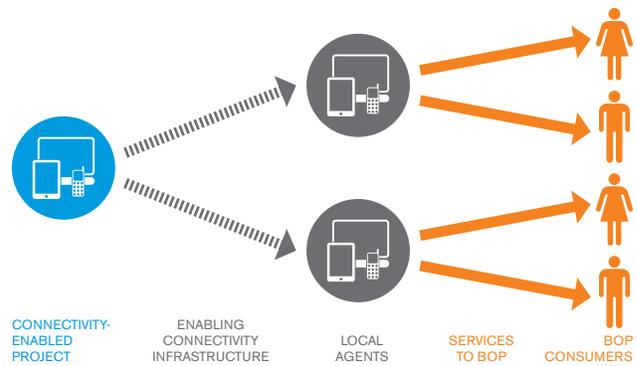
The projects analyzed in this report were categorized according to the way in which they use data connectivity and broadband.

## 1. Direct-to-consumer



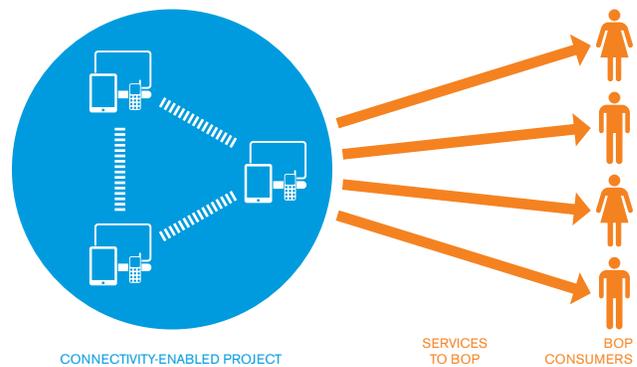
**Direct-to-consumer** projects provide broadband- or data-enabled services directly on BOP consumers' devices. Over half of the projects reviewed in this category (50 of 97) are not market-based; rather, they are often launched by governments or NGOs to provide information to the BOP. Among the market-based projects, most offer a main service that is SMS- or voice-based and designed to operate on the most simple devices and reach the largest number of people possible, along with a premium service that requires more complex devices and better connectivity.

## 2. Local Agent

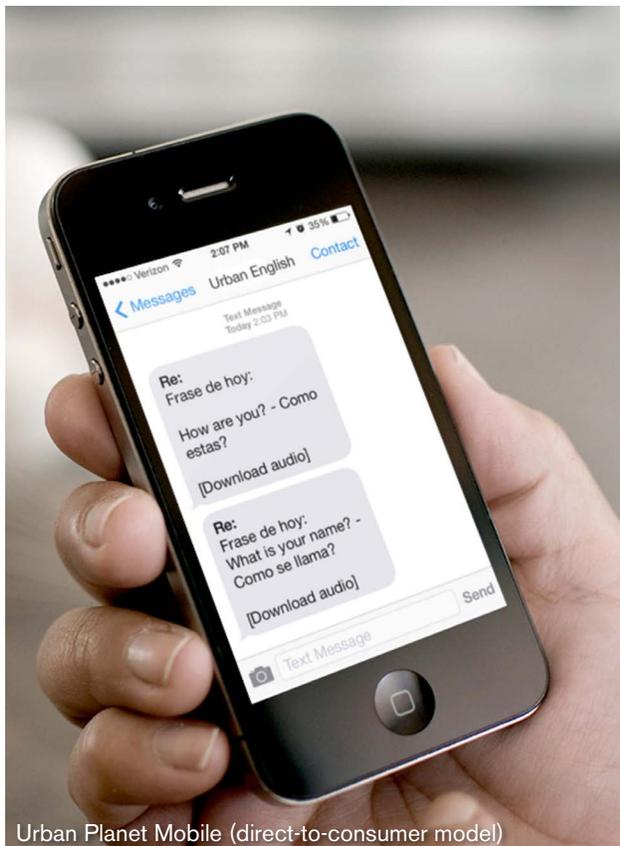


**Local agent** projects offer broadband- or data-enabled services to BOP consumers through local agents who overcome the issues of (digital) illiteracy and device affordability for end-users. Using a shared technology point also allows for increased investment in the technology, and hence projects in this category tend to use devices with more functionalities and higher-speed broadband than direct-to-consumer projects. This model has the highest proportion of market-based projects (30 of 48, i.e., over 60 percent).

## 3. Optimized Internal Processes



**Optimized internal processes** projects leverage broadband to re-engineer their business processes and provide better services at lower costs to the BOP, without necessarily putting the end-user in contact with technology. This category has few market-based projects (18 of 99, i.e., less than 20 percent), as many projects support data-gathering by frontline community workers – making NGO or government programs more efficient, rather than serving the BOP as clients. However, a few radically innovative approaches prove that data connectivity and broadband in particular can also improve businesses' efficiency, to the extent that these approaches can serve the BOP sustainably where traditional approaches are too costly.



Urban Planet Mobile (direct-to-consumer model)

## Key Success Factors of Each Model

### Shared Success Factors

The report draws lessons from in-depth analysis of eight case studies in health, education, financial services, and agriculture in Mexico, India, Kenya, and for one project, in over 30 countries. The case studies are representative of the market-based approaches in the three above-mentioned business models (direct-to-consumer, local agent and optimized internal process), which share some key success factors in terms of the design and delivery of a successful and affordable value proposition to their BOP clients.

**Pre-testing.** First, the models offer a tested, comprehensive, and fully reliable value proposition to their users. Before commercial launch, these businesses test all aspects of their service with end-users to ensure that the service is fully reliable from day one and to holistically answer their client's concerns.

**Use of technology.** Second, the models leverage technology to continuously improve services for end-users by standardizing processes, while constantly monitoring inputs and outputs and systematically acting on feedbacks.

**Adaptation to infrastructure.** Finally, the business models adapt the service to the available broadband infrastructure. Where high-speed broadband is available, these businesses upgrade their technologies and processes to take advantage of it. Yet many projects have to make do with data connectivity at low speed when broadband is not available or too expensive. Businesses that fundamentally need broadband but cannot access it either build their own infrastructure or get a third party to bear connectivity costs.



Bridge (optimized internal processes model)

### Model-specific Success Factors

In terms of marketing, distribution, and scalability, the business models have different key success factors.

**Direct-to-consumer.** Under the direct-to-consumer model, successful businesses get endorsements from well-known brands and leverage mass marketing (e.g., TV spots or large-scale SMS campaigns) to reach a sufficient number of prospective consumers at acceptable costs. For optimal distribution, they adapt their service to broadband devices with the highest penetration rate. As these are rarely smartphones, this limits the extent of their service (and hence the price they can charge for it). In order to scale sustainably, this in turn forces the businesses to create services that can be easily transferred to other areas (e.g., with the same language) and leverage large existing client bases (e.g., from existing network operators), regardless of the sector in which those clients work.

**Local agent.** Under the local agent model, successful businesses leverage their network of intermediary agents, often chosen via recommendations from within the communities, to establish customers' trust. In terms of distribution, such business models achieve success provided they build a dense enough network of trusted and performing agents, which requires building a highly attractive value proposition for the agents that ensures they earn attractive revenue. In order to sustainably scale their agent network, these businesses further need to find smart investment strategies to limit the technology costs per agent (e.g., by sharing costs with the agents themselves or with other organizations).

**Optimized Internal Processes.** Businesses using the optimized internal processes model often offer a service in a completely new way for end-users, thanks to data-connectivity and broadband (e.g., private schools with connected teachers, or tele-medicine in low-income neighborhoods that have rarely seen a computer before). In terms of marketing, these businesses need to create trust via proximity marketing, quality certifications, and top-notch after-sales service. As capital-intensive businesses, optimized internal processes projects need to invest frugally and rely on modular growth in order to scale sustainably.

## Socio-economic Benefits of Broadband for the BOP

The analysis of the three models and their success factors has also shown large potential socio-economic benefits of broadband for the BOP. As a powerful tool upgrading service access, quality, and cost-efficiency, broadband helps integrate the BOP into social and economic value chains as end-users or intermediaries because it:

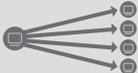
**Provides BOP end-users with better information and connection to the world.** By allowing large data transfers, broadband gives end-users access to key information and improved quality contents while enabling real-time interactivity with the digital community. Moreover, it allows for linking market players and aggregating supply and demand to optimize commercial transactions.

**Empowers BOP intermediaries, employees, and entrepreneurs.** By providing support for complex tasks, broadband allows for hiring and training lower-skilled BOP workers. In addition, it improves the quality of service that local agents can deliver and hence their competitiveness. For example, franchised entrepreneurs and small shop owners in both India and Mexico have been able to multiply their revenues by at least two thanks to the provision of broadband-enabled services.

**Makes inclusive businesses more efficient and hence allows them to better serve poorer customers.** Broadband facilitates the optimization of organizational processes and lowers costs through centralized process management. It further increases service quality through standardization and real-time monitoring. One case study showed that hospitals in India could reduce their costs by 75 percent – and hence provide their services at lower prices to their patients – thanks to increased efficiency from broadband.

**Drives macroeconomic trends delivering social and economic benefits to the BOP.** Companies that build their business on broadband often need large initial technology investments to get started, and consequently end up investing tens of millions of dollars in the local economy. Broadband also contributes to creating new employment opportunities, improves matching between job supply and demand on the BOP labor market, and can enhance access to social services and the quality of those services (e.g., education, health, financial services, agriculture) for the BOP. For example, in Kenya, students in private schools leveraging broadband have achieved 15-35 percent higher scores on national exams compared to students in neighboring public schools.

### Challenges and Key Success Factors of Each Model

Challenge	Key Success Factors		
<p><b>Value Proposition</b> Offering quality, reliable service at affordable cost with the available infrastructure</p>	<p><b>Pre-testing.</b> Offer a tested, comprehensive, and reliable value proposition to end-users.</p> <p><b>Use of technology.</b> Leverage technology to continuously improve the service.</p> <p><b>Adaptation to infrastructure.</b> Adapt the service to the available infrastructure.</p>		
<p>For the following challenges, key success factors vary by project model, as indicated.</p>	 <p>DIRECT-TO-CONSUMER</p>	 <p>LOCAL AGENT</p>	 <p>OPTIMIZED INTERNAL PROCESSES</p>
<p><b>Marketing</b> Creating trust in technology and service quality</p>	<p>Get endorsements from well-known brands and leverage mass marketing.</p>	<p>Establish trust among consumers via local agents and community endorsement.</p>	<p>Create trust via proximity marketing, quality certifications, and excellent after-sales service.</p>
<p><b>Distribution</b> Ensuring affordable access to device or point of service</p>	<p>Adapt the service to devices with highest penetration rate.</p>	<p>Build a dense network of agents by offering them an attractive value proposition.</p>	<p>Not applicable.</p>
<p><b>Scalability</b> Scaling up while paying back high upfront costs</p>	<p>Create replicable service offers and leverage existing client base to quickly reach scale.</p>	<p>Find smart ways to limit or share the investment costs per agent.</p>	<p>Invest frugally and rely on modular growth.</p>

## Lessons Learned for Policymakers: Promoting Broadband-enabled Businesses at the BOP

While broadband can benefit the BOP, innovative projects often struggle to reach scale due to an unsupportive environment. Policymakers could give a significant push to broadband-enabled projects with potential impact through interventions that:

**Facilitate access to broadband infrastructure for businesses that serve the BOP.** Key actions involve improving “last mile” connectivity (e.g., by encouraging private players’ investments or investing directly), and improving broadband affordability (e.g., by fostering competition between broadband providers, or by offering discounted rates – or requesting broadband providers to do so – on broadband access and use for inclusive businesses).

**Create an enabling environment for BOP businesses that leverage broadband.** This includes removing regulatory bottlenecks to innovative business practices with potential impact; reducing taxes and duties on services (and devices) initially considered “for the rich” but that become affordable for all thanks to broadband; and ensuring coherence of connectivity- and broadband-related public policies across ministries and agencies (e.g., by creating inter-ministerial committees to coordinate strategies and interventions).

**Provide direct support for the replication and scale-up of broadband-enabled businesses that serve the BOP.** This can be done by supporting the sharing of experiences and the dissemination of best practices in leveraging broadband in the provision of social services, or by leveraging government contracts to create business opportunities and catalyze technology investments from inclusive business models.

The research undertaken for this report has shed light on new approaches that leverage today’s connectivity to build tomorrow’s inclusive business models. Connectivity in general and broadband in particular bring new opportunities to the BOP, and are investments well worth considering for policymakers throughout the world and in particular in Latin America and the Caribbean.

More research is still needed to quantify the impact of broadband on poverty at both the macro and micro levels. Yet the authors of this report hope that it will inspire political and business leaders to create and support more broadband-enabled businesses to achieve better socio-economic inclusion at the BOP.



Barared (local agent model)



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