

# THE POWER OF SHARING

*Exploring the Digital Sharing Economy  
at the Base of the Pyramid*

Authored by:



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*Exploring the Digital Sharing Economy at the Base of the Pyramid*

This research was authored by NESsT with collaboration and financial support from IDRC. The research was conceived at an IDRC-convened workshop in December 2011 in Montevideo, Uruguay, to discuss the opportunities and challenges for the digital sharing economy at the base of the pyramid. The objective of the workshop was to develop a research agenda maximizing the potential benefits of the digital sharing economy for the base of the pyramid while mitigating some of its limitations.

## ABOUT NESsT

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IDRC encourages and supports researchers and innovators in those countries to find practical, long-term solutions to the social, economic, and environmental problems their societies face. The organization's goal is to find ways to reduce poverty, improve health, support innovation, and safeguard the environment.

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## Executive Summary

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A new generation of digital collaborative innovations is emerging in developing countries. In this report, we consider many innovations that pertain to the Digital Sharing Economy, including:

- Emerging crowdfunding platforms such as Catarse and Idea.me in Latin America, or Ketto in India, are supporting hundreds of social and environmental projects with small contributions from thousands of supporters.
- Wikipedia's exponential expansion in Sub-Saharan Africa and Asia through partnerships with local telecoms to reduce to zero the cost of mobile access to the world's largest encyclopedia.
- Market-based organizations such as MobileWorks and Samasource are using principles of collaboration and crowdsourcing to train and provide work for those in low-income communities.
- A collaborative online platform called Mission 4636 enabled thousands of volunteers worldwide to translate hundreds of incoming messages from victims of the large earthquake in Haiti in 2010, facilitating the international relief effort and helping to save hundreds of lives.

### What is the Digital Sharing Economy?

We define the Digital Sharing Economy as innovations that leverage digital solutions, such as the Internet or mobile phones, to engage communities. Communities lead the development of these innovations when they are co-creators in their design and implementation, facilitated by digital tools.

### The Effects of the Digital Sharing Economy

While digital solutions serving the poor have existed for well over a decade, the community element is fairly new. This report shows that the Digital Sharing Economy is starting to reach groups that were previously excluded from the global economy and starting to have an impact in their lives. These Digital Sharing Economy innovations are increasingly possible thanks to growing access to global open platforms, the Internet and mobile phones in poor communities. In some cases, these innovations are disrupting established market-based business models.

This research analyzes digital, community-led innovations in developing countries, identifying characteristics that can be particularly important for development. These innovations have been finding ways to offer products and services for free or at prices more affordable than traditional options, while also finding ways toward economic sustainability and

rapid expansion. They are creating new ways to take into account the specificities of particular communities while ensuring that the solutions can be quickly modified and replicated. They are increasingly taking advantage of cheaper computational capacity and global connectivity, while rapidly adapting to engage with those that have less digital literacy. And more importantly, they may have started to promote a type of economic development that is more connected with traditional social values and environmental concerns of local communities.






However, the emergence of these new digital community-led innovations is not happening without challenges. There are still concerns in relation to the efficiency, reliability and sustainability of many initiatives. They face substantial financial constraints as they are poorly understood and lack institutional support. They also struggle with a number of regulatory obstacles that may jeopardize their long-term development.

### Research Goals

This research aims to stimulate a debate around the nature of the Digital Sharing Economy, and its potential impact on the quality of life for the world's poor, exploring how we can harness its potential contribution to a more sustainable pathway for development in emerging economies.



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# Introduction

In the developed world, the “digital sharing economy” is a rapidly expanding force involving a critical mass of new enterprises leveraging the power of Internet collaboration to deliver goods and services in entirely new ways. At the time of this writing:

1. Wikipedia has nearly 30M wiki pages created by 18M users in 285 languages.<sup>1</sup>
2. Airbnb, a business that allows users to rent out available rooms, apartments, or homes, has had 4M travelers staying at 900,000 listings in 192 countries.<sup>2</sup>
3. Automobile-sharing company ZipCar, with 760,000 users and over 10,000 vehicles, was recently acquired by Avis Budget for \$500M.<sup>3</sup>
4. Some 536 crowdfunding platforms (estimated December 2012) operate in nearly 40 countries, representing \$2.8BN directed towards collaboratively funded projects and new businesses.<sup>4</sup>
5. Gartner, Inc., a leading information technology research firm, estimates that the peer-to-peer financial lending market will reach \$5 billion by 2013.<sup>5</sup>

As people share their time, tangible goods, money and ideas, these new digital sharing economy enterprises are proliferating. They are disrupting well-established business models and are driving a revolution in sharing by efficiently matching those who have assets or talents to share with those who need them.

Barriers that were once considered impossible to overcome are now evaporating, creating a peer-to-peer digital economy never seen before. The digital sharing economy provides an opportunity to produce and market products and services in new ways, moving the paradigm from a traditional market-based model to one where cooperation is the norm.<sup>5</sup> The digital sharing economy promises to have an impact on many areas where markets have not been able to deliver, including science and education, modernizing government, and reducing the overall carbon footprint.

But how important are these developments for those who live in poverty? The digital sharing economy is enabling people in the developed world to think differently about consumption, ownership and the type of development they want in their societies. The question is whether these changes will be triggered in developing countries as well.

In order to explore this issue, this research examines the role of the digital sharing economy at the “Base of the Pyramid” (BOP), a diverse group of roughly 4 billion people (57% of the world’s population) who earn less than US\$5 a day in local economic purchasing power.<sup>6</sup> Individuals in poverty vary in what they do and where they live. In Latin America, three-fourths of the BOP live in cities, whereas in Asia two-thirds live in rural areas.

The vast majority of those at the BOP are employed in the informal economy, meaning they perform work that is outside of the formal structures, protection and taxation of governments.<sup>7</sup> Due to having such low income, this group often pays a higher percentage of its income to meet basic needs for food and for credit. Often, the poor live in rural areas where critical infrastructure and institutions are lacking; or, due to a lack of formal credit history or collateral, the poor are often denied financial services.<sup>8</sup>



## BARRIERS TO THE GROWTH OF THE DIGITAL SHARING ECONOMY AT THE BASE OF THE PYRAMID

### SMARTPHONE PENETRATION

Global smartphone penetration is roughly 40%. The penetration is less in developing countries, but growth rates are high and increasing while smartphone prices are declining. Smartphones offer GPS location-enabling services like ridesharing.

### DIGITALIZATION GAP

There are still areas where there are weak cellular signals, combined with low but growing access to mobile broadband and home broadband connections. Home broadband is often prohibitively expensive, and few have access to personal computers.

### LAST MILE DISTRIBUTION

Non-existent supply chains and distribution channels, bad roads, and lack of financial access (no banks) results in remote communities being isolated from essential services and products.

### LITERACY/LOCAL LANGUAGE

In some emerging market countries, literacy rates are low, sometimes requiring alternative methods of communication (e.g., interactive voice response). Many languages spoken by different cultures at the BOP can present a barrier to the spread of digital sharing economy technologies.

### ENTRENCHED SOLUTIONS, MONOPOLIES, LACK OF INNOVATION

Embracing new business models of sharing, openness and transparency can face resistance as some companies are reluctant to cannibalize their core businesses. Many companies also may not know how to enter BOP markets, especially in rural and low-income communities. Companies in these industries will adapt or be displaced.

<sup>1</sup> <http://en.wikipedia.org/wiki/Wikipedia:About>

<sup>2</sup> <https://www.airbnb.com/annual/>

<sup>3</sup> <http://ir.zipcar.com/releasedetail.cfm?ReleaseID=730993>

<sup>4</sup> <http://www.crowdfunding.nl/wp-content/uploads/2012/05/92834651-Massolution-abridged-Crowd-Funding-Industry-Report1.pdf>

<sup>5</sup> Exploring the Digital Sharing Economy at the Bottom of the Pyramid, workshop hosted by IDRC, December 2011, Montevideo, Uruguay.

<sup>6</sup> See, for example, The Globe: Segmenting the Base of the Pyramid, by V. Kasturi Rangan, Michael Chu, and Djordjija Petkoski, Harvard Business Review, June 2011.

<sup>7</sup> As an example, according to the ILO Department of Statistics, many low GDP per capita countries have high rates of informal employment (India has the highest percent at 83.6).

<sup>8</sup> <http://www.iadb.org/idbamerica/index.cfm?thisid=4113>



In this report, we define the digital sharing economy as those innovations leveraging digital solutions such as the Internet or mobile phones to collaboratively engage communities.

### Defining the Digital Sharing Economy

People have always shared their goods with neighbors, given to local causes, and provided advice to acquaintances. As our digital lives become more intertwined with our physical lives, many of these practices are migrating over to digital platforms. Exploring a wide number of cases for this research, the authors observed that these innovations have as a core value a strong sense of community, and they now address, through digital collaboration, issues such as responses to disasters, health and sanitation, or education, to name a few. Even when economic transactions and profit objectives exist, the idea of (and values associated with) “digital community” tends to be the unifying dimension that brings this emerging digital sharing economy together.

The community elements associated with the digital sharing economy tend to fall outside of the traditional definition and measurement of the economy. After all, we do not contribute to GDP when we share a tool with a friend, or collaborate for the benefits of the commons. However, as some of these community elements move online and grow in scale, they are becoming more formal, are facilitating large-volume transactions, and are beginning to have direct impact on the traditional economy. Examples include the difficulty traditional encyclopedia publishers find in competing against free and volunteer-based Wikipedia, or how Airbnb has caused a wave of disruption diverting accommodation revenues to local communities. This research shows that a growing number of innovations (including for-profit and nonprofit ventures) are building sustainable business models to drive grassroots community initiatives to digital platforms. Therefore, this new phenomenon needs to be understood in terms of an economy that includes the collaborative production and consumption of goods and services.

This report identifies three main ways in which community participation is facilitated by digital innovations: sharing, collaboration, and commons-based approaches.

- **Sharing:** communities can use digital solutions to share assets, time, money, or even ideas. More and more, the things that we share online are not restricted to digital goods. This phenomenon has been well documented by Rachel Bostman and Roo Rogers, who detail the resurgence of a lifestyle of sharing, swapping, and lending that is growing to new heights as a result of online networks and marketplaces—defined as “collaborative consumption”.<sup>9</sup>
- **Collaboration:** communities can use digital solutions to collaborate more effectively. Interestingly, as Larry Lessig demonstrated, digital collaboration can enable a new generation of hybrid business models to take advantage of contributions from the community while creating profitable enterprises.<sup>10</sup> A number of case studies in this research, from hackathons to online collaborative platforms, highlight such successful approaches.
- **Commons-based approaches:** communities can leverage digital tools to manage resources for the benefit of the common good. Yochai Benkler coined the phrase “commons-based peer production,” to describe how a large group of individuals work together in a decentralized way to build something strictly for the creation and expansion of the digital commons (e.g., a new piece of software).<sup>11</sup> Digital innovations can preserve the commons in many areas beyond their digital forms, including mapping points of interests in low-income communities or preserving a cultural heritage by leveraging the Internet.

This report shows that many digital sharing economy innovations successfully leverage sharing, collaboration, and/or commons-based approaches to create social impact. And while digital solutions serving the poor have existed for well over a decade, this report shows that the digital community element is fairly new and growing rapidly.

### A New, Connected World

While in the past, the expansion of digital community-led innovations was hindered by limited access to ICTs, this is not necessarily the case any longer. According to the World Bank, 90% of the world’s population had access to a basic cellular signal by 2010.<sup>12</sup> The World Bank reports that the bandwidth of these networks is doubling roughly every 18 months and expanding into rural areas. Similar trends are seen in other aspects of digital development, including the availability of low-cost hardware technology. Initiatives such as One Laptop Per Child (OLPC),<sup>13</sup> India’s Aakash Tablet,<sup>14</sup> and Raspberry Pi<sup>15</sup> demonstrate that the trends predicted by Moore’s Law<sup>16</sup> have come to fruition. The boundaries for low-cost technologies are continually being broken with clear implications for the developing world.

At the same time, most of the technologies developed for low-income communities have not focused on them as platforms for collaboration and sharing. The role of ICTs has largely been limited to issues of access. More recently, this role has been expanded to reach consumers at the base of the pyramid, or to expand the provision of public services such as mobile-based agriculture information or distance education. This research demonstrates that solving social problems through digital community approaches is new and growing rapidly.

### About this research

This document aims to stimulate debate around the impacts, benefits, and potential risks the digital sharing economy is having—and will have—on low-income communities. While it is clear that the digital sharing economy has evolved rapidly in developed countries, the impacts of these new models on the world’s poorest is far less clear. The main purpose of this research is to explore the potential of the digital sharing economy to address these needs while contributing to a more sustainable pathway for development.



### BARRIERS TO THE GROWTH OF THE DIGITAL SHARING ECONOMY AT THE BASE OF THE PYRAMID (CONT’D)

#### FUNDING—ACCESS TO FINANCE

While some options like crowdfunding and impact investing have increased in recent years, there are challenges for digital sharing economy businesses or organizations to raise funds needed.

#### TECHNICAL LITERACY

In their survey of BOP women, *Striving and Surviving a Glimpse into Women’s lives at the BOP*, GSMA found that of the women who did not want to own a mobile phone, 22% cited that they would not know how to use it.

#### CULTURAL BARRIERS

The GSMA study also found that 74% of women who did not want a mobile phone said that it was because their husband did not allow it.

#### FRAGMENTATION

Because the digital sharing economy is still nascent in emerging markets, competing services have prevented the critical mass needed by networks or markets to reach scale. For example, a large number of text-messaging platforms have emerged to assist small-scale farmers to access market information, but no single solution seems to be reaching scale.

#### ELECTRONIC PAYMENT ACCESS

While the rapid growth of M-Pesa is well documented, electronic and mobile money solutions like PayPal are not yet widespread at the BOP.

#### GOVERNMENT REGULATION

The regulatory ecosystem is only slowly catching up with the nascent sharing economy; and not yet in the BOP; this creates uncertainty.

#### TRUST AND REPUTATION SYSTEMS

Less developed systems for establishing a reputation and trust at the BOP.

<sup>9</sup> <http://www.collaborativeconsumption.com/>

<sup>10</sup> <http://www.lessig.org/books/>

<sup>11</sup> <http://www.benkler.org>

<sup>12</sup> <http://www.worldbank.org/ict/ict4d2012>

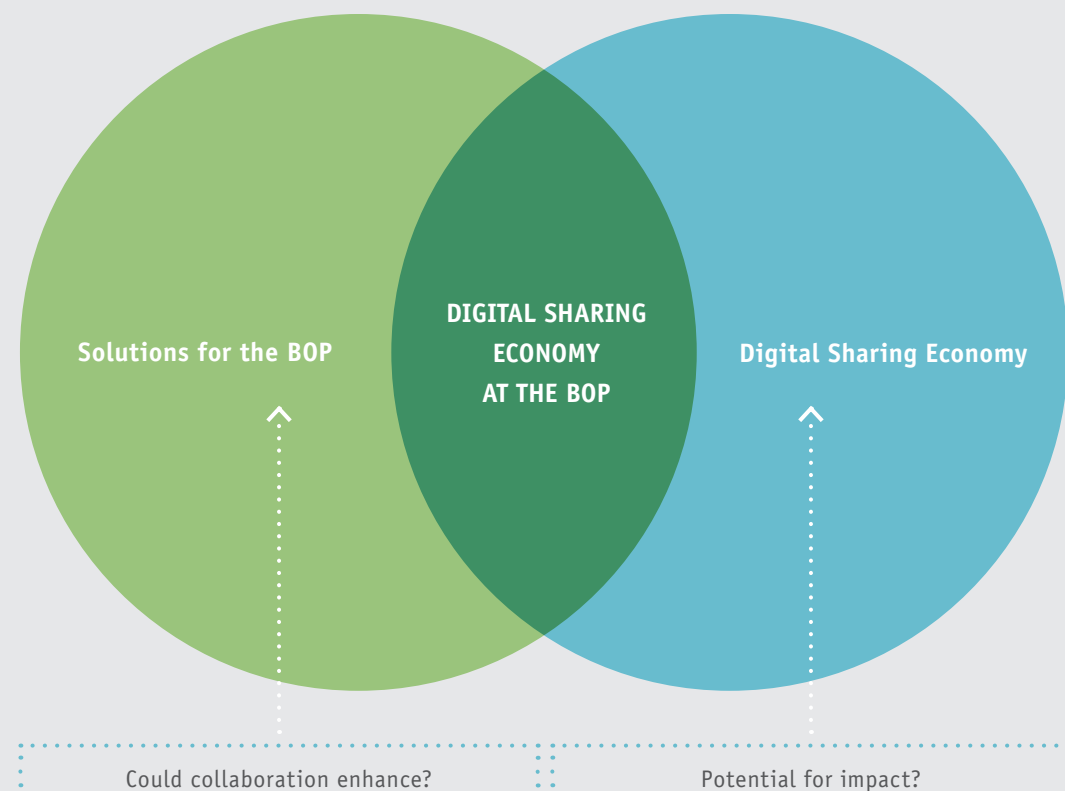
<sup>13</sup> An ambitious effort that has distributed over 2 million laptops worldwide, including 800,000+ in Peru and 500,000+ in Uruguay <http://laptop.org>

<sup>14</sup> This effort is aiming to get a sub \$50 tablet into the hands of students at Indian colleges and universities

<sup>15</sup> A \$35 dollar Linux based circuit board designed to help teach children about computer science. The computer, which can be plugged into existing monitors and keyboards, has sold over 1 million units to date.



**FIGURE 1**  
ORGANIZATIONS CONSIDERED FOR THE RESEARCH



Thus, the specific research questions include:

1. What digital community-led innovations are emerging among—or are likely to expand toward—low-income communities?
2. What are the characteristics of digital community-led innovations targeting the poor?
3. Do these innovations already have a social impact on the poor? What is the potential positive impact? What are the risks inherent with these innovations?
4. Are there good practices when designing for this specific group? How can interested parties like governments, businesses and development institutions foster the growth of a digital sharing economy that empowers poor communities—in other words, a more inclusive economy?

To answer these research questions, the report is divided in four sections. Section 1 presents eight themes that emerged from the research where successful digital sharing economy innovations are having an impact. Section 2 presents a framework for identifying BOP needs and assesses whether current digital sharing economy innovations are meeting those needs. Section 3 explores the factors that make digital sharing economy innovations successful and the commonalities of their business models. Section 4 presents conclusions from the research and recommendations for fostering an enabling environment for more digital sharing economy innovations to emerge.

This report argues that a digital sharing economy is not only possible in low-income communities, but that in some areas it already exists. However, as with other developments in emerging markets, like the rapid increase of mobile technology leapfrogging the need for land line telephone infrastructure, it is highly unlikely that these innovations will emerge exactly like those in the developed world. The needs of communities are different, as are the dynamics and complexities of the environment. Thus, during the research process, we found numerous cases where digital community-led innovations have great potential

and even success in meeting some of the priorities of the poorest communities in the developing world.

#### Methodology

To better understand the digital sharing economy at the BOP, we used a multi-faceted research approach that included qualitative, primary and secondary research. More than 20 expert interviews were conducted with thought leaders involved in the digital sharing economy. These interviews included academics, authors, businesses, incubators/accelerators, government officials, journalists, NGOs, and venture capital investors.<sup>17</sup> The interviews sought to identify potential candidates for case studies as well as themes and patterns including barriers, success factors, and potential future impacts of the digital sharing economy.

Through the course of the research the authors maintained a comprehensive database of digital community-led innovations (including businesses, NGOs and projects) in both the developing and developed world. This database documented over 150 innovations, many of which are referred to in the research. The purpose of the database was to help map out potential implications of the digital sharing economy on poor communities, and to develop a classification of the types of innovations. It also helped to identify potential candidates for further analysis through in-depth case studies.

From the desk research and expert interviews, eight digital sharing economy innovations were selected for detailed case studies (excerpts of the case studies appear throughout and as a supplement to this document). The case studies were selected based on three criteria:

- The degree of sharing or collaboration involved.
- The ability to create both social value (i.e., impact) and economic value (i.e., financial sustainability) at the BOP.
- Specific lessons that could not be drawn from other cases.

The information from the research was synthesized to form a framework on the potential impact of the digital sharing economy for the BOP.

<sup>16</sup> Moore's law is an observation in which the number of transistors on a chip will double approximately every two years. What this means for the context of this research is that: "advances in process technology and reductions in cost make computing devices accessible to an ever-increasing number of people worldwide, empowering innovations across the computing continuum—from the smallest hand held devices to the largest cloud-based servers."

<sup>17</sup> A complete list of interviews appears in the acknowledgments.

# Collaborative Models Benefiting Low-Income Communities

As stated above, the purpose of this research is to explore the digital sharing economy at the base of the pyramid and understand what collaborative digital solutions are emerging to serve low-income communities, including their social impacts, what makes them work, and how to support these types of initiatives.

After reviewing many different collaborative digital organizations, businesses, and start-ups from around the world, the research team organized and categorized the organizations from the database based on general impact themes. For each theme we describe different cases within and how innovations in collaboration, sharing and the commons are occurring.

To begin, below are the themes found among the organizations examined in the research; these are by no sense an exhaustive compilation of all existing themes, but the categories provide a starting point for observing and discussing the growth of sharing and collaboration in emerging markets. Each theme is analyzed with supporting examples in the rest of this section. The themes are:

1. Crowdfunding for social good and peer-to-peer lending
2. Creating better employment opportunities at the BOP
3. Creating community-led technological innovations
4. Disaster relief
5. Asset sharing
6. Building stewardship over natural resources
7. Civic engagement
8. Exchanging knowledge, education & professional development







THEME AREA #1

## Crowdfunding for Social Good



**THEME**

Crowdfunding for social good and peer-to-peer lending

**DESCRIPTION**

Web platforms enabling a large number of users to fund or invest in projects or businesses.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

Catarse, Energy in Common, Fondeadora, Global Giving, Impulso, Idea.me, ImpactCrowd, Kangu.org, Ketto.org, Kiva.org, Kopernik, Kubo Financiero, Milaap, RangDe, Samahope, The Seed Africa, Sunfunder, Watsi, Wishberry.in

Recently, many have started to look at another potential source of financing for initiatives at the BOP. The nascent crowdfunding industry has grown from zero to \$2.8BN in just a few short years. Kanyi Maqubela of Collaborative Fund, a venture capital firm whose investment thesis is “backing the shared future,” believes that crowdfunding could have a very significant impact for the BOP because of the way that it disrupts the typical power structures involved in capital markets, thereby democratizing the flow of capital. Put simply, loans or investment are important tools for business and job growth, but many would-be entrepreneurs are denied funding due to a lack of credit history or other factors.

Crowdfunding has presented a new option that can fund businesses or community projects without requiring a credit history. In addition, crowdfunding can be a way for entrepreneurs to test the demand that exists in the marketplace for a product or service and get valuable feedback from early adopters. As one can see in the timeline of crowdfunding in emerging markets (see chart on page 18) the industry took off with the launch of Kickstarter and Kiva in the US, followed by different iterations popping up in different countries addressing different themes. Like many other online industries, crowdfunding has begun with a successful market leader, Kickstarter, which funded over \$274M in projects in 2012. Following the market leader are many different verticals (specific niche crowdfunding sites) addressing many different impact areas including health, energy and education.

For example, with Kangu.org in Uganda one can crowdfund a safe birth. With The Seed Africa, one can pay the school fees for a child. Maqubela openly expressed some concerns about crowdfunding and how fast the concept has gained popularity. He made the parallel to Groupon and other deal sites that replicated to the point where

there were 500 Groupon clone sites in China alone, only for enthusiasm in the concept to later wane as customers lost interest. He illustrated his concern for how, through US-based Kickstarter, many entrepreneurs have been delayed in delivering their products to market. What has been found with Kickstarter projects is that it is easy for makers to produce 500 units, and it is also easy to mass-produce 500,000 units, but there is a valley of death in between. Maqubela is cautiously very optimistic about the potential of crowdfunding at the BOP and thinks that, unlike Groupon, crowdfunding is fostering real tangible communities. Like Maqubela, many are enthusiastic about crowdfunding at the BOP, but challenges exist to reaching the BOP and having the right partners to reach different communities can be crucial to success.

There are currently 19 crowdfunding initiatives in Brazil, each of them servicing a niche or specific issue. Catarse, which focuses on art and cultural projects, is by far the largest and most successful crowdfunding platform in Brazil, having recently reached US \$3 million in funding and 150,000 users. Impulso, a crowdfunding platform for low-income microentrepreneurs, is a project of Aliança Empreendadora, an internationally recognized nonprofit organization in Brazil. Both platforms were developed by an organization called Engage ([www.engage.is](http://www.engage.is)) and the two organizations have worked closely with each other throughout their development. Catarse and Impulso, varied in size, scope and target populations, are driven by strong social determinants and seek to empower communities at the base of pyramid.

While Catarse focuses primarily on art and cultural crowdfunding campaigns, oftentimes the featured projects work with low-income populations. One of its most successful projects is ‘Pimp my Carroças’, an initiative spearheaded by Mundano, a Brazilian street artist, who sought to use art and community engagement to empower low-

income garbage collectors and recognize their positive environmental impact on the city of Rio de Janeiro. The project raised over \$32,000, almost double the original funding goal.

Another example of how crowdfunding has enabled an emerging market social entrepreneur to tap into a community of funders comes from crowdfunding site Indiegogo, where Khalida Brohi, a female entrepreneur from a small village in the Balochistan province of Pakistan, was able to raise \$10,060 for her organization, Sughar, that sells fashionable accessories made by 700 women in rural Pakistan.<sup>18</sup> Sughar works to engage the leaders of the communities in which it works in the traditional customs of embroidery as an alternative to honor killings. While Khalida ultimately fell short of her funding goal, with Indiegogo Flexible Funding campaigns Sughar was able to keep every dollar that was raised.

Crowdfunding emulates a universal non-digital process that has already existed where people collaboratively contribute to a group purchase. What is interesting to observe is how digital solutions can allow entrepreneurs in developing markets tap into larger communities of contributors. As the trend of connectivity in developing markets continues, and crowdfunding expands to mobile phones (see chart on the following page), it is not difficult to be optimistic for the promise of these scalable models to deliver capital to emerging market entrepreneurs serving poor communities.

<sup>18</sup> <http://www.indiegogo.com/projects/giving-women-wings-in-pakistan>

<sup>19</sup> World Bank Data from 2010  
<http://data.worldbank.org/indicator/SE.ADT.LITR.ZS/countries/KE?display=graph>



# The Evolution of Crowdfunding for the BOP

A charity fundraising web site that enables social entrepreneurs and nonprofits from anywhere in the world a chance to raise the money they need to improve their communities.<sup>1</sup>

An international crowdfunding platform for all industries. Some notable campaigns affecting the low-income communities include Sughar (previously mentioned) who raised over \$10,000 and over \$25,000 for access:energy a company empowering Kenyans to bring renewable electricity to their communities, creating skilled jobs and energy independence.<sup>2</sup>

Uses crowdfunding to encourage funding the use of innovative technologies for issues facing the developing world. The platform connects supporters and technology providers and seekers in an online marketplace. As of 2012, 89,000 have benefitted from the dissemination of 17,400 technologies through 57 successfully funded projects.

India for-profit microlending platform. Reaches BOP through lending partners. Recent raised \$1.1M in Series A investment.

Latin America's largest crowdfunding website. In 2012, Idea.me acquired Movere, Brazil's second largest crowdfunding site. Since last August, the Buenos Aires-based company has successfully funded over 500 projects.

Samahope enables backers to fund obstetric fistula, burn contractures and cleft lip and palate surgeries for individuals at the BOP and Watsi (2012) is a similar platform that enables anyone to contribute to life changing surgeries for those in need.

U.S and Mexico-based crowdfunding platform that successfully mobilized support for the U.S. JOBS Act, which changed securities laws to legalize crowdfunding activities. They recently launched the Social Enterprise Hub, which connects impact investors with social entrepreneurs.



A popular microcredit platform that allows users to lend money to social entrepreneurs through its partner microfinance institutions. It does not charge a transaction fee and instead relies solely on grants and donations. Since its founding, Kiva has helped 890,000 lenders provide over \$400 million in loans to entrepreneurs in 67 different countries, and boasts a repayment rate of 98.98% (Source: Kiva.org)

One of the largest crowdfunding platforms for creative projects. Projects are funded only if they reach their funding goals, and Kickstarter charges a 5% fee for projects that are successfully launched. To date, 3 million people have pledged over \$450 million to fund 35,000 projects. Kickstarter funds only US-based projects, but took the concept of crowdfunding to a mainstream audience.

Brazil's largest crowdfunding platform for creative projects. Catarse charges a 13% fee on projects that reach their funding goals. Since Catarse's founding, over 54,000 backers have donated US \$3 million to 447 projects including Pimp my Carroça (2012) which used art and community engagement to empower low-income garbage collectors in Sao Paulo that transitioned into a permanent project. It is one of best-known successfully crowdfunded projects in Brazil. Catarse has "channels" focused on social business and projects impacting low-income Brazilians.

An online crowdfunding platform for safe births for mothers at the base of the pyramid. Funders choose a mother to support and send a payment to a partner medical institution, and the money goes to pay for safe birth services, including prenatal/antenatal care, skilled attendance at delivery, emergency obstetrics, postnatal care, diagnostics, and supplies.

A crowdfunding platform in Swaziland that supports causes in developing countries. Its first project successfully raised funds to send a young girl from Swaziland to a boarding school to further her education.

Kenya's first SMS-based crowdfunding platform.

<sup>1</sup> <http://www.globalgiving.org/aboutus/media/backgrounder.html>  
<sup>2</sup> <http://www.indiegogo.com/projects/access-energy>



THEME AREA #2

# Creating better employment opportunities at the BOP



**THEME**

Creating better employment opportunities at the BOP

**DESCRIPTION**

Uses ICT collaboration to generate employment in the formal economy or the informal economy.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

LaborVoices, Jana, MobileWorks, Samasource

One of the defining aspects of the digital sharing economy is Rachel Botsman’s concept of latent or idling capacity. All sorts of businesses and platforms have been designed around leveraging many different underutilized tangible goods, from bikes to power tools, but there is also a great deal of excess capacity of human intelligence. Platforms like OpenIDEO, World Bank Hackathons and Creative Currency offer individuals (typically educated in universities) an opportunity to use their brainpower to improve communities. In low-income communities, however, there is a lot of unused talent and brainpower pent up for lack of better opportunity. In Kenya, for example, the country has a literacy rate of 87.4%,<sup>19</sup> yet an unemployment rate of 40%.<sup>20</sup>

One way in which this idle brain power has been put to use is through microwork platforms, which have grown quickly in recently years. They consist of work tasks divided into small pieces and distributed through digital tools to a large number of workers. Some microwork platforms, most notably Samasource, target particularly low-income and marginalized communities. Samasource is a nonprofit organization founded in 2008 by Leila Chirayath Janah. It provides data and content services to large enterprise clients, including Fortune 500 companies like Google, LinkedIn and eBay. These services include data entry, content moderation, business listing verification, transcriptions, and document digitalization. The projects are segmented into smaller and more manageable collaborative “microwork” tasks, and then distributed through SamaHub, Samasource’s proprietary web application, to 16 global delivery centers in South Asia, East Africa, and the Caribbean. Once the tasks are completed, Samasource’s professional services team reassembles the project and delivers the finished product to the clients. Samasource offers companies cost-efficient means to administer their data needs that would otherwise be costly to process internally.

<sup>19</sup> World Bank Data from 2010  
<http://data.worldbank.org/indicator/SE.ADT.LITR.ZS/countries/KE?display=graph>

<sup>20</sup> CIA world factbook data from 2008  
<https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>



Samasource students  
Source: [www.flickr.com/photos/samasourcepress](http://www.flickr.com/photos/samasourcepress)



Samasource’s unique microwork model differentiates it from traditional avenues of digital collaboration, in particular those of crowdsourcing. Unlike crowdsourcing platforms such as Amazon Mechanical Turk and Crowdflower, which have thousands of freelance workers on hand to complete tasks, Samasource’s model relies on a fully managed and trained workforce as well as quality-control integration.

This model helps Samasource deliver high-quality services to clients with an average of 95% accuracy, compared to 76% for crowdsourcing platforms.<sup>21</sup> Furthermore, because they are not trained to participate in traditional crowdsourcing platforms, people at the BOP do not benefit from them, whereas they do from Samasource’s employment practices. Samasource is able to hire people from the BOP that don’t have work experience, train them to perform basic digital tasks and offer them a living wage for their work. The focus is on hiring groups traditionally excluded from formal employment, specifically women, youth, and refugees.

Samasource’s strong social message is integrated into its standard operating procedure (which must be followed by all global delivery centers) for greater impact. After two to four weeks of training, the workers are able to handle and effectively process microtasks and eventually, they gain enough technical experience to fulfill requirements for formal employment.

Most workers work with Samasource for six months to a year and then continue on to formal employment with business processing outsourcing companies. To date, the company has paid more than \$2.5 million to over 3,100 agents through global delivery centers in nine countries. Pilot studies have shown that 75% of Samasource workers transition to formal employment or pursue higher educational opportunities, and the organization anticipates reaching its break even point in 2015.

“Long-term, Eagle (who’s also an MIT professor) wants to turn their platform into a mechanism that subscribers can use to start generating their own content, a la Craigslist or Wikipedia. ‘You don’t see community-generated content there,’ he says of the developing world, ‘because the mobile phone is how you access this content, and for every access you have to pay. At an income level of two dollars a day, that’s prohibitive.’”<sup>22</sup>

Similar and notable efforts to Samasource in emerging markets include Digital Divide Data (DDD), MobileWorks, and Jana. DDD is a more traditional business process outsourcing solution in Kenya, Laos, and Cambodia which has scaled to \$5 million in revenues through outsourcing partnerships with corporations and educational institutions. What makes DDD unique is while it not only provides job training and work experience for BOP individuals, it also provides successful employees with scholarship money, the opportunity to attend school while working, and job placement upon graduation.

MobileWorks is a firm based in Berkeley, California, that began with 10 employees working in a slum in Mumbai and now employs over 10,000 people in 60 different countries, primarily in Southern Asia.

MobileWorks focuses on what it calls virtual work, online projects like data collection and content moderation that can be completed by collaborative teams.

The business was a Y Combinator accelerated start-up and received venture capital investment from prolific Silicon Valley investor Marc Andreessen. MobileWorks had an initial focus on non-skilled BOP groups and worked with NGOs to source workers, but it evolved the model to target low-income workers that were skilled. The company is pursuing a B Corporation certification and uses IRIS impact indicators to track social impact with a primary focus on the wages employees are able to earn.

Jana, formerly TxtEagle, is a business that utilizes partnerships with 237 mobile operators in emerging markets to provide payment to basic feature phone mobile users for contributing to research or participating in social marketing. Users are paid in the form of airtime in exchange for participation in surveys for high-profile clients like CNN, Unilever, or Danone. Jana raised \$8.5 million in venture capital in 2011, and according to technology news blog TechCrunch, Jana founder Nathan Eagle sees great potential for digital collaboration in emerging market, low-income communities: “Long-term, Eagle (who’s also an MIT professor) wants to turn their platform into a mechanism that subscribers can use to start generating their own content, a la Craigslist or Wikipedia. ‘You don’t see community-generated content there,’ he says of the developing world, ‘because the mobile phone is how you access this content, and for every access you have to pay. At an income level of two dollars a day, that’s prohibitive.’”

There are also other employment-related solutions helping low-income communities with better working conditions. Thomas Rausch of Good World Solutions, an organization that uses mobile tools to provide

better working conditions and higher pay for those at the BOP, thinks that there will also be potential benefits in the transparency of global manufacturers (like apparel or electronics manufacturers). Peer-produced digital information on factory conditions could give employers more realistic, real-time data on the conditions on the ground.

Good World Solutions has two offerings that can help the lives of BOP workers—an online fair wage guide that serves as a marketplace for buyers and sellers of artisanal goods, and a labor link product that uses mobile phones to survey workers in their local language using interactive voice response. Another such company is LaborVoices, which initially set out to be a Yelp for global labor. The organization has since pivoted to work more with multinational corporate clients “to crowdsource supply chain intelligence,” working to provide corporations with a window into manufacturers and at the same time provide labor with information on the best employers.

Many of these examples that are generating and improving employment in emerging markets tend to be successful with a market-based approach and use varying degrees of crowdsourcing and digital collaboration to train and employ workers to perform tasks. There are last-mile hurdles to reaching the BOP and organizations that look to incorporate this aspect face greater business model challenges and often higher costs. In these cases, organizations typically partner with NGOs to execute some functions such as the recruitment or training of the BOP workers. Despite obstacles, digital collaboration and co-production has permitted millions of workers to come online from remote or atypical settings. This gives reason for optimism that low-income communities will, as Nathan Eagle says, begin to create more community-generated content.

<sup>21</sup>Information taken from Samasource website

<sup>22</sup>Source: <http://techcrunch.com/2011/04/12/tختهagle-raises-8-5-million/>



THEME AREA #3

## Creating community-led technological innovations



**THEME**

Creating community-led technological innovations

**DESCRIPTION**

Large groups of participants use ICT to achieve a common goal, or develop solutions using ICT for social impact.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

*CreativeCurrency* (occurred in the US), *Desarrollando América Latina*, *Developing the Carribean*, *OpenIDEO*, *Random Hacks of Kindness*, *Toilet Hackers*, *World Bank Health and Sanitation Hackathons*.

Innovations have traditionally been developed inside the modern intellectual property framework that grants exclusive rights to inventors to explore the market for a period of time. While that is widely recognized as a key incentive to technological progress and economic development, it has also predominantly been the domain of large corporations and universities, not accessible to individual innovators, inventors, entrepreneurs, designers, and engineers both in developed and—especially—developing countries.

In recent years, new digital collaborative methods to advance knowledge and innovation have emerged that provide new platforms to tap the creative potential of thousands of individuals. These digital community approaches are relevant to low-income communities, leveraging the cognitive surplus<sup>23</sup> of local talent as well as professionals in the developing world who are interested in collaborating to deliver social impact. This approach is beginning to become widespread as corporations, foundations, and local governments look to engage communities around innovation. Three interesting examples showing the potential for community-driven digital innovation in low-income communities come, respectively, from a for-profit company, a large global multi-lateral, and a public private partnership: *OpenIDEO*, *World Bank Hackathons* and *CreativeCurrency*.

*OpenIDEO* shows that community-led digital innovation for low-income communities is possible. *OpenIDEO* is a business unit within the major global design consultancy *IDEO* that is harnessing online collaboration to design products and services for social good. *OpenIDEO*'s mission is to provide a space for people all over the world, with varying levels of experience and expertise, to come together online to create projects for the public good. Since its launch, *OpenIDEO* has elicited collaboration from over 40,000 users in 178 countries.

<sup>23</sup> See Shirky, Clay Cognitive Surplus.

The success of *OpenIDEO* is attributed to its design-focused innovation process, which mimics the way *IDEO* teams work on projects. Design challenges are conceived by *IDEO* professionals in collaboration with a committed nonprofit organization or socially responsible corporation, which then becomes the challenge sponsor. The organization then formulates “The Big Question”—a question in the form of “how might we...?” The big challenge is then posed to participants.

During the development phase of the project, users are encouraged to share their thoughts, build upon other peoples’ contributions, and further refine their ideas. When the concepts move towards evaluation, they are assessed for business viability and technological feasibility by a panel of experts and the winning concept is selected. The challenge sponsor funds the project and then initiates the implementation process. The final phase, ‘Realization,’ is a way for project collaborators to track the progress on the ground and assess the project’s social impact.

*OpenIDEO*'s revenue model is to charge clients a flat fee for the 12-week challenge that ends up being more affordable than contracting the firm directly. Meanwhile, the winning designs that come out of the platform are licensed through a Creative Commons license that allows widespread use and adaptation of the co-invented solutions. To encourage community learning, concepts that are not selected are also shareable under a Creative Commons license, encouraging others to expand and develop these ideas.

The possibilities for applications for low-income communities are very real. In one project, *OpenIDEO* partnered with challenge sponsors *Unilever* and *Water Sanitation for the Urban Poor (WSUP)* to work on improving water sanitation in Ghana. *Unilever*'s participation came out of their ‘Sustainable Living’ program, an initiative that sought to provide solutions to sanitation needs. They realized that 80% of

Ghanaians don't have access to toilets, and their methods for waste disposal posed severe public health risks. After a two-month challenge period that generated 122 inspirations from *OpenIDEO* users, one of the concepts chosen was a local business that would rent out specially designed toilets and provide a cleaning service (thereby creating local jobs) to ensure proper hygiene. The concept even included a toilet prototype designed to be sealed at the top to reduce odor. *Unilever* was happily surprised to find that the winning concept included not just product designs, but also funding ideas and strategies on how to increase public awareness of the service. *Unilever* and *WSUP* launched a six-month pilot test and as of November 2012, 150 new customers had signed up for the product. It is expected that the service will reach 1,000 households in 2013 and 10,000 households in 2014.<sup>24</sup>

Through another partnership with the *Grameen Foundation*'s *Caldas* initiative in Colombia, *OpenIDEO* launched a challenge that sought ways to improve health in low-income communities. The challenge focused on the high rates of poverty and low access to basic health-care, which was attributed in part to the widening gap in inequality in the region. One of the winning concepts envisioned working with ‘Community Mothers’ and training them to serve as health knowledge workers, and the *Grameen* team is working on implementing these ideas on the ground. These are but a few examples of the potential for *OpenIDEO*'s online community-driven innovation to solve crucial global issues of health, poverty and inequality.

*World Bank* hackathons are events that have taken place in many emerging market countries including India, the Philippines, Indonesia, Uganda and Bangladesh to pair “young technologists with (international) development problems.” The hackathons began in October 2011 with an event focused around water. In 2012 the initiative expanded

<sup>24</sup> <http://www.openideo.com/open/how-can-we-improve-sanitation-and-better-manage-human-waste-in-low-income-urban-communities/realisation/300-clean-team-toilets-delivered-to-ghana/>



Where people design better, together **BETA**

**FEATURED CHALLENGE**

A COLLABORATION BETWEEN IDEO, UNILEVER & WSUP



### How can we improve sanitation and better manage human waste in low-income urban communities?

OpenIDEO has partnered with Unilever and WSUP (Water and Sanitation for the Urban Poor) to explore sanitation issues in Ghana. Together we're asking you, the OpenIDEO community, to help us come up with sustainable sanitation inspirations and concepts. We'll be focusing on low-income urban areas like Kumasi – the nation's second-largest city with a population of more than 1.5 million people.  
[Read The Challenge Brief](#)



Various Open IDEO projects  
Source: [www.openideo.org](http://www.openideo.org)

and broadened the focus to sanitation. Applications that come out of the hackathons typically address problems leveraging collaboration and open source principles. One such example is mapsh.it, a collaborative tool to map open defecation across India; another application addressing the same issue helps users find the nearest toilet.<sup>25</sup> Some of the finalist applications to be born out of the sanitation hackathons address critical issues like improving sanitation in schools, measuring girls' attendance in school (as a sign of the sanitation conditions for schools). More recently, in June of 2013, the World Bank has launched similar hackathon in Kathmandu, Nepal around the pervasive problem of violence against women.<sup>26</sup>

Another collaborative initiative addressing poverty in the developed world that is worth discussing is the CreativeCurrency initiative launched out of The Hub in San Francisco. This initiative was designed to include participation from the public sector, the private sector and the third sector on collaborative solutions to improve the conditions and services available to the homeless and others in the Mid-Market district of San Francisco. The event began with the development of a community brief by the local stakeholders.<sup>27</sup> The brief was essentially a statement of the needs of the community as described by local organizations, and these needs included housing and shelter, communication, and employment. The initiative then arranged a collaborative three-step process to prototype, develop and implement their solutions. Teams consisted of professionals from diverse backgrounds including design, web development, and business worked together on solutions for the local problems. Through the process teams were formed and each team was assigned several mentors from private sector companies like Airbnb, local organizations like a local church, and local foundations as well. Solutions that emerged from this process included an online peer-to-peer credit scoring solution, an Airbnb-esque solution

to utilize abandoned space for pop-up retail and other experiences, and an offering designed to provide access to showers in public space.

The above initiatives tend to follow a similar format whereby the organization seeking to address a certain social issue first forms partnerships with organizations from the private sector, NGOs and community organizations that are focused directly on the particular issue, and often other NGOs that aggregate coders or web developers interested in social change. The initiatives then organize events or hackathons where large groups of participants are guided through a process of brainstorming and team forming to develop concepts to address the problem. As a next step they pilot and test the hypotheses formed with their product or service in the communities to receive feedback. Often the teams are paired with mentors who can help them develop their value proposition, products and the community segments that they intend to reach.

Many of these programs are new approaches to creating community-led solutions and are still "building the plane as it is in flight," gradually improving on the programs with the next generations and the next challenges that they address. One issue identified by Jon Axtell, Co-Organizer of Creative Currency, was that some of the new enterprises lost steam about 18 months into the process. In future iterations he would allow for further investment and technical assistance to kick in at this crucial point. With OpenIDEO, the organization added the realization phase after finding that the design community wanted to understand the outcomes of the projects once a design challenge was complete. One thing is certain, these new forms of collaboration are leading to new, community-led digital innovations that, whether they are in the public domain or commercial, leverage existing knowledge and are building commons-based resources for communities.

<sup>25</sup> According to the WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation report in 2013, a little over 1 billion people (15% of the world's population) defecate openly, negatively affecting water supplies and spreading disease.

<sup>26</sup> The initiative was launched in the wake of the December 2012 gang rape that occurred in New Delhi attracting global attention to the fact that gender based violence is the leading cause of death for women ages 19 to 44.

<sup>27</sup> <http://creative-currency.org/community/community-brief/>



THEME AREA #4

# Responding to Emergencies



**THEME**

Disaster relief

**DESCRIPTION**

Efforts that utilize digital collaboration to prepare for or react to natural disasters.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

Airbnb Disaster Response, Frontline SMS, InSTEDD, Mission4636, Sahana Foundation, Tech-In Disaster, Ushahidi (CrowdMap)

On January 12, 2010 Haiti was hit by a large earthquake that devastated the country's fragile infrastructure, shutting down telephone lines and the electrical grid. Hundreds of thousands of people were affected and first responders were at a loss at how to target relief efforts and reach the most affected populations. In response, Mission 4636, a nonprofit organization, spearheaded a collaborative effort among the Haitian population, especially among the diaspora, aided by technology and humanitarian organizations. The effort was the first international relief effort that deployed crowdsourcing as one of its response strategies, and was the largest of its kind to date.

A factor complicating the relief effort was the language barrier between the people in need (Haitian Creole) and the international aid workers (English). By leveraging the tireless volunteer efforts of the Haitian diaspora through crowdsourcing, Mission 4636 became one of the most successful translation, information recovery and communication service efforts ever used in response to a natural disaster. The Mission 4636 project provides deep insight on the potential for digital collaborative information processing of time-sensitive tasks to help populations during a crisis.

The success of the Mission 4636 project in translating and transmitting messages is attributed to the role of the Haitian diaspora, who were able to volunteer through a crowdsourcing site to help their fellow citizens. The local knowledge that volunteers contributed to the project through collaboration was an invaluable part of the response efforts.

Another important aspect of the project was establishing a paid workforce to take over the tasks: volunteers were coping with mental stress and fatigue, and Haitians on the ground were eager to return their lives back to normal by securing work. Mission 4636 took their role as information collectors very seriously, and prioritized the security and privacy of the individuals it served.

Among the most important information that emerged from the crowd-sourced translation efforts included updates on the location of ad-hoc aid stations, reports of people needing immediate medical attention

“The old paradigm was one-to-many: foreign journalists and aid workers jet in, report on a calamity and dispense aid with whatever data they have. The new paradigm is many-to-many: victims supply on-the-ground.”

and the names of missing persons. The median turnaround time per message was less than 5 minutes. Over the course of five weeks, Mission 4636 processed 80,000 text messages, and it is believed that it was responsible for saving hundreds of lives. There have been many implementations of similar community-based platforms around the world. One of the best-known of such platforms is the Ushahidi Crowd-Map (an open source information collection, mapping and visualization tool for transparency and development). Ushahidi is a Kenyan-designed, online solution originally used to map the violence and corruption that occurred in the wake of the 2007 Kenyan election.

The tool was also utilized in the Mission 4636 effort and similar efforts including the Chilean earthquake of 2010. The New York Times summarizes the potential for community-based problem solving in emergency situations, “Ushahidi suggests a new paradigm in humanitarian work. The old paradigm was one-to-many: foreign journalists and aid workers jet in, report on a calamity and dispense aid with whatever data they have. The new paradigm is many-to-many-to-many: victims supply on-the-ground data; a self-organizing mob of global volunteers translates text messages and helps to orchestrate relief; journalists and aid workers use the data to target the response.”

These digital solutions are not without challenges. While they bring the possibility of widespread participation from anyone with a mobile phone, quantitative research performed on Ushahidi CrowdMap<sup>28</sup> found

that of 12,000 CrowdMaps analyzed, only 585 (~5%) achieved the critical mass of 21+ users. Of this category, the average number of users was 814. While this long-tail distribution of participation is common for collaboration tools, Ushahidi is now actively working to help users understand how to generate online maps, support the ongoing management of the maps and promote them to potential participants.

A few other notable executions of digital collaborative efforts to prepare and respond to emergencies include Tech-In Disaster, InSTEDD, and Airbnb Disaster (see Box 1). Tech-In Disaster in Nigeria was an event in 2012 designed to bring together stakeholders to collaboratively design and create web and mobile apps that can prevent, prepare, relieve, and respond to the effects of disasters in the country. InSTEDD has a similar premise; the organization is designed to use open source technology tools to help partners enhance digital collaboration and improve information flow to better deliver critical services to vulnerable populations. An example of InSTEDD's collaborative work in action can be seen with UNICEF where the organization piloted a program with 111 youth in low-income favelas to generate online maps of disaster prone areas in their communities.

**BOX 1  
AIRBNB DISASTER**

In New York, following Hurricane Sandy, one Airbnb user offered her apartment for free to Airbnb community members. To date, 350+ people have offered their homes at no charge through to the Airbnb community. Now Airbnb has plans to support and expand these efforts, facilitating these interactions by reaching out to hosts in affected areas. The business claims that with Airbnb Disaster, “Emergency accommodations can be anywhere Airbnb exists.” Might similar solutions emerge in developing countries to allow poor people the opportunity to benefit from home sharing during emergencies? What will be the Airbnb for natural disasters, displacing refugee camps?

<sup>28</sup> <http://www.ictworks.org/2012/08/29/crowdlobe-dead-ushahidi-reality-behind-12795-crowdmaps/>



THEME AREA #5

Sharing assets



THEME

Asset sharing

DESCRIPTION

ICT enables an asset to be shared by multiple users.

SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS

Airbnb, Aventones, Bike Rio, Ecobici, EnCamellos, Favela Experience, Hangzhou Bike Public Bicycle, Riding0,

Bikes, cars and homes have become the most widely associated items to share across the digital sharing economy. Many of these are beginning to take off in emerging markets as well as in developed countries. It still remains to be seen to what degree these initiatives will benefit low-income communities, but there is reason for optimism.

One example comes from the Chinese city of Hangzhou, home to the largest bicycle-sharing system in the world. With over 60,000 bicycles at 2,400 stations, bicycles are available every 300 feet for residents, who can access the bikes for free for the first hour, then pay a very small hourly fee for each hour thereafter to use the service.

The bike-sharing system, managed by the Hangzhou Bicycle Company, functions as a component of the expansive public transportation network in the city, bringing residents from bus and subway stops to their final destinations. The Hangzhou Bicycle Company hopes to expand the system to 175,000 bicycles by 2020.

Examples of these digitally-enabled sharing systems are numerous as bike, car, or ride-sharing platforms continue to grow. Bike-sharing provides substantial value to the poor in urban areas where, in some instances, a bike can be cheaper than public transportation (or free). *Hangzhou Public Bicycle* in China, *Ecobici* in Mexico, *Bici Q* in Ecuador, *Bike Rio* in Brazil are all examples of systems that have emerged in developing countries and cities with high concentrations of low-income individuals.

In addition, many of the business models from developed countries have already been adapted in developing countries. For instance, just in the sphere of car and bike-sharing, we could identify the following cases:

- *Vayamos Juntos (Argentina)*: a free ride-sharing service where drivers and passengers register online and create profiles to connect with those with similar travel routes.
- *riding0 (India)*: a paid carpooling/ride-sharing platform that costs the same as public transportation, is phone-based, and uses a prepaid credit system to avoid awkward transactions with cash.
- *Zazcar (Brazil)*: launched in 2009, Zazcar allows users to share cars by the hour. Rates start at about US \$11.40/hour or \$92.75/day and include gas, insurance, maintenance and reserved parking.
- *Zoom (India)*: a Harvard Innovation Lab startup that is breaking ground as the first online car-sharing program in India. The team is developing partnerships with automobile companies, residential realtors, corporations and college campuses.

Sharing is already prevalent in low-income communities. Unlike the developed world where there is a perceived loss of connection to community, sharing in emerging markets tends to be part of the culture and something that happens naturally out of necessity. Many of these platforms in emerging markets will grow out of more practical reasons like reduced congestion, convenience, and cost savings or increased incomes to the users.

In the developed world, car-sharing has been the “gateway experience” to lure people into the sharing economy. This may not be the case in emerging markets. Marcus Dantus of mobile technology business accelerator Wayra pointed out that peer-to-peer car-sharing start-ups like Getaround or RelayRides would have more difficulty due to trust and security concerns in Mexico.<sup>29</sup> Other solutions are starting to gain traction, like Ecobici, a bike-sharing offering in Mexico City, which allows users with a credit card to use a bike for free for up to 45 minutes.

Some entrepreneurs are attempting to create businesses that benefit the low-income communities through leveraging existing platforms. One example is entrepreneur Eliot Rosenberg who entered the Dell Social Innovation challenge with his startup Favela Experience.<sup>30</sup> Rosenberg has begun to bring favela properties on to Airbnb to facilitate tour and homestay experiences. Rosenberg currently manages 9 favela listings and hopes to scale to 100 properties and 30 tour activities by the World Cup in 2014.

These types of solutions also have an indirect impact on low-income communities. While for some systems, payment options may preclude BOP participation, pollution and traffic are major problems in major cities in Latin America, China<sup>31</sup> and around the world. These issues lead to a drain on productivity and are a cause for serious health concern for all citizens. According to NASA, transportation is currently the largest driver of climate change<sup>32</sup> and it is well documented that the poor will be disproportionately affected by the effects of climate change.<sup>33</sup>

As the middle class arises in China and India, as well as other emerging markets, bringing a burgeoning appetite for goods, there is the valid concern that the planet does not have the resources required to sustain such growth. Neal Gorenflo, the creator of the online magazine Shareable, thinks that the sharing economy increases access to goods for people, but not at the expense of an increase in extraction; thus, economic growth is possible without consuming more natural resources (basically leveraging Botsman’s idea of “latent capacity”).<sup>34</sup> With each shared vehicle replacing the need for up to 13 cars,<sup>35</sup> sharing is a technological advancement that enables economies around the world to become more productive and efficient.

<sup>29</sup> One digital sharing start-up in Chile allows you to see the profile of your taxi driver, increasing security.

<sup>30</sup> <http://www.dellchallenge.org/projects/favela-experience>

<sup>31</sup> A month prior to this writing, the pollution index hit record heights in China

<sup>32</sup> <http://rendezvous.blogs.nytimes.com/2013/01/13/breathing-in-beijing-coping-with-chinas-smog/>

<sup>33</sup> <http://www.giss.nasa.gov/research/news/20100218a/>

<sup>34</sup> <http://edition.cnn.com/2008/BUSINESS/02/17/eco.class/>

<sup>35</sup> Gorenflo also pointed out that the sharing economy is not on the agenda for any large massive multilateral organizations (like the UN or the World Bank for example), but some cities have taken up sharing (see case) like San Francisco and Seoul (who declared its intention to become a sharing city).

<sup>36</sup> According to interview and correspondence with Gorenflo of Shareable.





THEME AREA #6

## Building stewardship over natural resources



**THEME**

Building stewardship over natural resources

**DESCRIPTION**

Digital collaborative efforts that enable the stewardship of natural resources.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

mFisheries, Majiripoti, Mapping for Rights, FrontlineSMS

As pointed out by Nobel Laureate Elinor Ostrom, many communities have often developed practices that are deeply connected to common pools of resources (e.g. forests, fisheries, oil fields or grazing lands). They have found ways to share access and use their environment within rules that protect the integrity of the community and limit the potential for exhaustion and depletion. Whether talking about the management of pasture in African communities or irrigation systems in villages of Nepal,<sup>37</sup> the governance of the commons is a key element of many low-income communities, and critical to their ultimate survival. There are many cases where communities have taken the responsibility and successfully managed common resources rather than relying on state-led or market-driven solutions.<sup>38</sup> So how will digital tools such as mobile phones, the Internet, and computers affect this process of “governing the commons” in low-income communities?

Our research identified several organizations that are attempting to use collaborative digital solutions to address environmental conservation. While this area is somewhat less developed than others, we will show that there is potential for digital solutions to bring community-led solutions to address issues like water conservation, wildlife conservation, and overfishing.

One start-up business trying to take advantage of the availability of a mobile network in Kenya to steward and conserve water is Synacor Consortium with its Majiripoti initiative. According to the Water Services Regulatory Board of Kenya, the country has a water production output of 346 billion liters. But, almost half of the country’s production (49%) is unaccounted for, lost somewhere along the way between production and consumption. It is estimated that the annual financial loss for water waste is Kshs 6.8 billion (US \$78 million). Meanwhile, USAID reports have found that 13 million Kenyans lack access to a safe water supply and 19 million lack access to sanitation.

Synacor is a company that offers a product to public water management systems that allows water service providers to meter the water use by their customers. With its nonprofit Majiripoti initiative, the

company will leverage both these relationships with water management systems and the widespread mobile phone use in Kenya to offer mobile services designed to solve issues like water leakage and improve stewardship. They recognized the potential of the 25.3 million existing mobile phone users in Kenya to help solve these problems and are seeking to harness that capacity to press for greater accountability. Thus, in partnership with the water provider, the organization is building a home-grown Kenyan solution to prevent water system leakage.

Majiripoti (which means “Water Report” in Swahili), encourages urban residents to become proactive consumers, or ‘prosumers,’ of public utilities. Majiripoti, which is still under development, seeks to bridge the gap in customer service between the public and local water service providers and encourage responsible consumption of natural resources. The public will be able to access a mobile application to report broken water pipes, sewage problems and illegal tampering of the water supply. Majiripoti is designed to allocate water resources more effectively, thereby assisting in water conservation efforts and preventing water contamination from damaged water sources.

Synacor’s model is interesting because rather than thinking about people as consumers, it explores their potential role as a “prosumers”, giving them the tools to provide stewardship over their environment. By trying to engage customers through digital tools in the process of caring for the environment, companies may be starting to promote the traditional definition of the “commons”—related to commonly available natural resources, and trying to devise ways to restore a sense of community and preservation.

Regarding conservation for wildlife, the organization FrontlineSMS began with the purpose of wildlife conservation in Kruger National Park in South Africa. The founder of FrontlineSMS, Ken Banks, was looking for a solution that could communicate via SMS with communities around the park and that did not rely on the Internet. Banks designed a way for the park to communicate with multiple communities and tribal elders to get their input on the location of the animals

and receive valuable feedback and opinions from the community about park management via basic mobile phones. Frontline SMS was then repurposed for many different types of NGOs and organizations addressing problems like crisis mapping and healthcare.

Another application used to address stewardship over natural resources through collaboration is mFisheries, developed by the Trinidad and Tobago segment of the Caribbean ICT Research Programme (CIRP). The mFisheries application is designed to prevent overfishing, promote more efficient use of natural resources, and help small-scale fishermen in Trinidad & Tobago. One feature of the application, “Got Fish Need Fish (GFNF),” allows fishermen to unload and share unwanted catch that may be valuable to others. Through its research, the organization found that many fishermen focus on their more lucrative catch while ignoring others.

They found one instance where up to 1000lbs of bonito were wasted due to a lack of storage – though this fish is of interest as bait for other fishermen. The GFNF feature allows the fisherman to share their unwanted catch and for other users to post their needs and prices they might be willing to pay. The application also encourages fishermen to expose potential threats to the environment, making it easy to send text messages and pictures to the Coast Guard and specific authorities. The app developers were surprised by the interest of the fishermen in this specific feature of the application, revealing the untapped potential of making better use of the community of fishermen as the stewards of the Caribbean waters.

Ostrom concluded that the key to common-pool natural resource preservation lies neither in a strictly state-led solution nor in a strictly private-sector-led solution. She observed communities where voluntary contributions and the norms of communities combined to permit responsible stewardship. As the Internet allows for larger, cross-border, cross-cultural communities, there is potential for larger scale conservation efforts, involving the private sector, that incorporate the interests of communities and ecological preservation.

<sup>37</sup> These are two case studies explored by Ostrom, who received the Nobel Prize in Economics for “showing how common resources —, can be,” <http://news.bbc.co.uk/2/hi/business/8302662.stm>

<sup>38</sup> 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*, Ostrom, Elinor, Cambridge University Press.



THEME AREA #7

# Civic engagement



**THEME**

Civic engagement

**DESCRIPTION**

Provide platforms for community to engage in government, business, or journalism.

**SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS**

Avaaz.org, Code for Kenya, CG Net Swara, Ipaidabrike (Guyana, India, Kenya, Zimbabwe) Meu Rio, Spatial Collective, Wikimapa

One of the most promising areas where digital collaboration clearly benefits the BOP is through civic engagement. Collaborative innovations in emerging markets are enabling traditionally marginalized people to participate in activities that benefit the larger community, while extending the influence of low-income communities.

Our research uncovered many examples of online collaborative initiatives around advocacy, activism, mapping, citizen journalism, and citizen science that involve or stand to benefit the BOP. Many of these organizations are also laying the groundwork for economic growth and development by offering an outlet for participation where previously none existed. Some of these solutions address fundamental enabling factors for economic development including democracy, the rule of law, transparent and accountable government, the promotion and protection of all human rights and fundamental freedoms, including gender equality.

One example from Brazil is an organization called Meu Rio, or “My Rio.” Meu Rio is a community engagement platform designed by Engage, a leading socially-driven collaborative technology solutions company in Brazil. The team at Engage wanted to provide citizens of Rio de Janeiro with a collaborative interface to exercise their political power and influence public policy.

Citizens can use this site as a community space to discuss ideas, mobilize stakeholders, and create social movements. Meu Rio offers citizens resources on how to start campaigns and become ‘agents of change’ within their communities. As an example of Meu Rio’s work, when the state government announced that it would demolish an old museum located on historical religious grounds to make way for a private parking structure, citizens used Meu Rio to start a campaign and take public officials to task on the issue. Engage hopes that Meu Rio will foster a

new political culture where local community members are empowered to build a better city for themselves.

Another example from Rio de Janeiro, is the organization Rede Jovem, which set out to create Wikimapa, an effort to employ collaborative, grassroots participation to map landmarks in the favelas of Rio de Janeiro—areas overlooked by widespread mapping tools like Google Maps. Not only has this allowed for communities to discover local businesses and events, it has instilled a source of pride in communities that was previously absent.

Rede Jovem developed Wikimapa to highlight small businesses in favelas and stimulate the local economy. The organization viewed maps as a powerful tool that could define communities’ social identity, and the fact that maps of slums were missing from popular sites like Google Maps furthered these communities’ social and technological isolation. Additionally, it wanted to show low-income youth from Brazil positive aspects of their neighborhoods in order to break down stereotypes of life in poor communities. Ultimately, Rede Jovem designed Wikimapa not just to collaboratively map low-income and slum areas, but also to integrate and include these on maps for the first time and foster the development of a strong local identity.

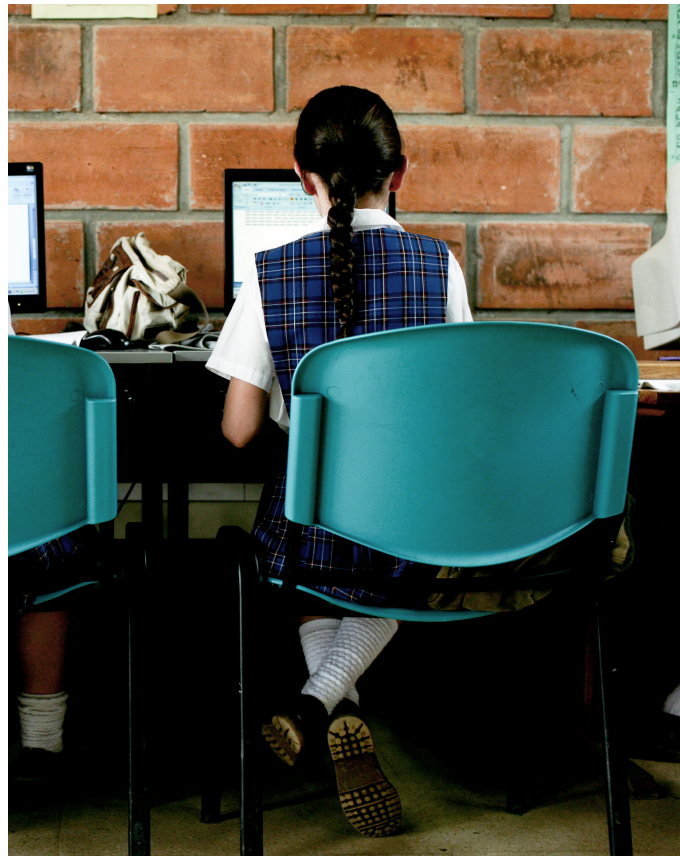
In India, Janaagraha, a nonprofit organization committed to improving the quality of life in Indian cities and towns, created Ipaidabrike.com as a way for citizens to come together and document experiences of corruption. The website invites people to report instances of bribery, detailing what the bribe was for, where it took place and how much was involved. In addition to serving as an anti-corruption tool, Ipaidabrike.com became a resource to discuss how to get around paying bribes. The success of the website was confirmed when Bhaskar Rao, transport commissioner in the state department of Karnataka, one of

the most cited departments on Ipaidabrike.com, invited the website’s creators to present their findings to his staff. To date, over 22,000 reports of bribes paid have been recorded in 493 cities across India. Similar programs are underway in Guyana, Kenya, and Zimbabwe that will use mobile devices to document corruption and vote-buying during elections, which will ultimately most benefit low-income communities. Janaagraha hopes that online anti-corruption tools like Ipaidabrike.com will eventually allow citizens to push for reforms.

Also in India is a compelling example of citizen journalism through the platform CGNet Swara. This organization offers anyone the opportunity “to report and listen to stories of local interest.” The platform is unique because it gives voice to ethnic and tribal minorities, collectively known as the Adivasi in India.

Swara accomplishes this by providing a number that people can dial to provide information on a news story orally in their language, or to listen to news stories from others. The news messages are moderated, vetted by journalists and distributed both over the phone and via the web site. Like many of the other collaborative platforms we studied in our research, NGOs play an active role in both reporting and getting the word out about the service to different communities.

CGNet Swara is unique because the reporters come often from rural India or from marginalized ethnic groups not represented in the mainstream media. Many of the calls pertain to grievances with government services and corporate or political corruption. Swara has a clear track record of amplifying the voice of these marginalized communities with many reports being picked up by mainstream news outlets like The Times of India, BBC, or the Hindu. Box 2 on page 36 illustrates the impact that these interactions can have on the lives of the BOP.



Images courtesy of Creative Commons  
Source: [www.flickr.com](http://www.flickr.com)

Digital sharing tools can enable governments to be more democratic and inclusive, permitting those at the BOP to have a voice. Governments can use collaborative tools to help citizens report on needs<sup>41</sup> and generate ideas for basic services. At the same time, sharing platforms are being used to keep governments in check for corruption and to build critical mass around addressing various social issues.<sup>42</sup> Not all of the BOP has access to the Internet, so continued efforts need to be made to recruit and allow for the voices of marginalized communities to be heard.

As mentioned above, these and other examples of civic engagement among low-income communities show great potential for improving living conditions. Equally great however is the challenge of financial sustainability for these organizations.

At this point the revenue model for many of these platforms remains unclear. I Paid a Bribe, for example has received contributions from the Omidyar Network, and representatives at Omidyar have expressed concern for the financial sustainability these types of models.<sup>43</sup> In this case, several different revenue models are being considered for generating income to sustain the organization, including advertising, microdonations, and repurposing the platform for paying clients.

<sup>39</sup> Cellphones as a Tool for Democracy: The Example of CGNet Swara, *Economic & Political Weekly*

<sup>40</sup> Mahatma Gandhi Rural Employment Guarantee Act

<sup>41</sup> One way Governments are moving to become more accountable to citizen's needs is through Open Government. Open Government is the encouragement of citizen collaboration, participation, and transparency-enhanced and facilitated by the internet. The Open Government Partnership (<http://www.opengovpartnership.org/>) has commitments from national governments in many countries including Armenia to Tanzania.

<sup>42</sup> One of the most successful platforms is Avaaz.org which has mobilized activists in 194 countries.

<sup>43</sup> <http://www.nytimes.com/2012/03/07/business/web-sites-shine-light-on-petty-bribery-worldwide.html>

## BOX 2 CITIZEN JOURNALISM AT THE BOP—CGNET SWARA

“One of the most heart-rending stories to appear on (CGNet)Swara was that of Pitbasu Bhoi from Ambikapur. On 8 January 2011, a citizen journalist posted an interview with Bhoi who was not paid his wages even after working 100 days under MGNREGA.<sup>39</sup> A week later, another citizen journalist ran into Bhoi and discovered that his son had died due to [health conditions left untreated because of his father's] non-payment of wages. After two leading national dailies, Times of India and The Hindu, picked up the story from Swara and followed up, Bhoi was paid his due wages on 20 January 2011. Bhoi is now a regular contributor to Swara, despite not owning a cellphone himself. (He calls from someone else's phones).”<sup>40</sup> In another case, the report of one woman enabled 1,000 laborers to collect wages overdue by the government for over 6 months.



THEME AREA #8

# Exchanging knowledge, education & professional development



THEME

Exchanging knowledge, education & professional development

DESCRIPTION

ICT enables the sharing of educational information to increase knowledge and professional skills.

SOME EXAMPLES FROM OR AVAILABLE IN EMERGING MARKETS

Code Academy, Descomplica, edX, Coursera, Khan Academy, Udacity, Wikipedia Zero, Zaya Education Micro Clouds

It is a universal human desire, including at the BOP, to attain education and better opportunities for our children. Accordingly, there are a plethora of efforts to take knowledge, education and training to the BOP and less developed countries. And while there is much excitement for the potential that digital solutions will change the face of learning, what actual value does collaboration and sharing bring to increase the knowledge, education, and skills of low-income communities? Are low-income communities contributing to this type of sharing? Below are some examples of openness and sharing where there are clear benefits to the BOP and opportunities in emerging markets.

The way people learn and incorporate knowledge is rapidly changing and will look radically different in the years to come. Some point to massive open online courses (MOOCs) as promising solution to take education to the developing world, evidenced by the IFC's recent investment of \$5 million to bring Coursera's brand of free education from prestigious universities to developing countries. Others are skeptical about the value of MOOCs and cite the drop-off in completion rates of courses and student exam failures.<sup>44</sup>

How these new innovations will ultimately benefit the BOP and low-income communities is yet to be seen. Some organizations, like the Open University of West Africa (OUWA) which operates out of the Hub in Accra, are attempting to blend the use of existing MOOC platforms like edX and Udacity with real life training and mentoring to educate business professionals who can tackle societal needs. OUWA claims to be the last mile distribution system for MOOCs in West Africa.

Another example of the expansion of the sharing economy at the BOP is provided by Wikipedia. Wikipedia Zero is one initiative leveraging mobile connectivity to bring knowledge to countries with the lowest GDP per capita, like the Democratic Republic of Congo or Niger. Wikimedia Foundation, the parent organization of Wikipedia, seeks

<sup>44</sup><http://www.openculture.com/2013/07/udacity-experiment-at-san-jose-state-suspended.html>



Source: www.wikimedia.org



Botswana, Cameroon, the Democratic Republic of Congo, India, Ivory Coast, Kenya, Malaysia, Montenegro, Niger, Saudi Arabia, Thailand, Tunisia and Uganda.

Based on preliminary findings, the Wikipedia Zero team has found a significant increase in readership from mobile users in developing countries. Mobile access to Wikipedia grew 40% year-over year in 2012, while non-English mobile usage increased 66%. Wikipedia Zero is estimated to provide free access to over half a billion mobile users in 12 countries around the world.

Through evaluations of pilot programs, Wikipedia Zero has seen 77% growth in page views for mobile operator Orange Niger (compared to 7% growth in page views for the rest of Niger), and 88% for Orange Kenya (compared to -7% for the rest of Kenya) over a four-month period between June 2012 and September 2012. For these two operators, their individual share of Wikipedia's page views has nearly doubled. In the same time period, Digi, a mobile operator in Malaysia reported 42% growth in unique visitors to Wikipedia. While no information is yet available on Wikipedia Zero user profiles, the technology, language features, and basic feature phone compatibility make the platform accessible to those at the base of the pyramid. With the proliferation of Wikipedia Zero partnerships around the world, Wikimedia hopes to make it easier for new and existing readers to access and contribute to the site.

Although Wikipedia Zero is in its early stages, Wikimedia has quantified some of the value mobile operators receive when offering Wikimedia Zero to their customers. It found that 28% of existing readers are more likely to buy services from an operator that provided Wikipedia Zero. In addition, operators gain positive marketing and the opportunity to offer a unique service to new and potential customers. In one instance, a group of South African high school students successfully lobbied their mobile service provider to add the service. Wikipedia Zero

to expand its services and improve its reach in the Global South, driven by its fundamental belief in the power of knowledge to help people out of poverty. Wikimedia has placed special emphasis on enabling consumers to access its sites through mobile technologies, and is working to break down the barriers that currently prevent many users from reading and contributing to Wikipedia on their mobile devices.

Wikipedia Zero, launched in April 2012, is a Wikimedia Foundation initiative that partners with mobile phone operators in developing countries to provide 'zero-rate,' or free access to Wikipedia's user-driven content through mobile devices. Wikimedia Zero hopes that by allowing greater access of Wikipedia, it can attract new readers and contributors to Wikipedia. Wikimedia Zero is currently operational in

is now modifying its marketing strategy to be focused around creating grassroots digital activist kits for mobile phone customers to organize similar campaigns around the free knowledge movement.

Another prominent case is the Khan Academy, where the founder, Salman Khan, began using YouTube videos to explain math concepts to his niece. The popularity of his early videos surged and, realizing the potential impact, Khan left his job at a hedge fund to create the Khan Academy. The organization has now blossomed to reach 6 million<sup>45</sup> students every month in every major language in the world.<sup>46</sup> Khan Academy has ambitious plans to continue internationalizing its site. Much of its previous success at reaching developing countries has come from the help of volunteers in translating content into 24 languages, including Urdu, Swahili and Chinese.<sup>47</sup> Most of the growth so far has been supported by donations, but the founder says he is looking for mechanisms to make the model sustainable. For instance, using the brand for third-party toys or books, licensing content to for-profit companies and certification could bring important revenue streams.

There are many large scale efforts to connect the BOP to technology and the Internet, like One Laptop Per Child (mentioned in the introduction) all of which face many barriers relating to distribution, literacy, technical literacy, and more.

One organization, ZAYA, is providing a micro-cloud solution that connects online educational resources from existing platforms like the Khan Academy to remote classrooms at the BOP, even where there are gaps in Internet connectivity. Like the Favela Experience model, which leverages the Airbnb platform to benefit low-income communities, some organizations may leverage the free education content and existing peer-to-peer learning tools and adapt them to deliver knowledge and training in a completely new way.

### BOX 3 SKILL SHARING—AN OPPORTUNITY FOR DIGITAL COLLABORATION AT THE BOP?

Skill-sharing is a peer-to-peer learning model that allows individuals to teach each other various formal and informal skills. The best-known site is U.S.-based Skillshare, which functions as an online marketplace for teachers and learners. Anyone with specialized skills can teach a class, and others pay a small amount, often \$20 to \$25, to attend, with Skillshare keeping 15% of the fees.

The website has an embedded reputation component, where students can leave feedback on the quality of the educator and the learning experience to inform other students' decisions in signing up for classes. There are other businesses that are utilizing online skill-sharing models in emerging markets, including Educabilia (which operates in 7 Latin American countries), Oja.la in Colombia, and Nos.vc in Brazil. Will digital peer-to-peer skill-sharing be adapted for low-income communities? Will there be a Skillshare for Soweto?

<sup>45</sup> <http://www.charlirose.com/view/interview/12798>

<sup>46</sup> <http://international.khanacademy.org/image/43969139372>

<sup>47</sup> <http://www.forbes.com/sites/michaelnoer/2012/11/02/one-man-one-computer-10-million-students-how-khan-academy-is-reinventing-education/>



## How are people sharing and collaborating in emerging markets?

Three hotbeds<sup>1</sup> or hubs for new sharing economy organizations are Brazil, Kenya/East Africa, and India.<sup>2</sup> These places have been developing strong entrepreneur ecosystems yet also have high concentrations of poverty. Below are some examples from these three countries.

### KEY

#### BIKESHARING

1. BikeRio, [www.mobilicidade.com.br](http://www.mobilicidade.com.br)
2. Namma Cycle, [www.nammacycle.in](http://www.nammacycle.in)
3. UN Habitat—Bikeshare, [www.unhabitat.org](http://www.unhabitat.org)

#### CAR SHARING

4. Caronetas, [www.caronetas.com.br](http://www.caronetas.com.br)
5. ridingO, [www.ridingo.com](http://www.ridingo.com)
6. Zazcar, [zazcar.com.br](http://zazcar.com.br)
7. Zoom, [www.zoomcar.in](http://www.zoomcar.in)

#### CROWDFUNDING

8. Benefeitoria, [benefeitoria.com](http://benefeitoria.com)
9. Catarse, [www.catarse.me](http://www.catarse.me)
10. Impulso, [www.impulso.org.br/pt](http://www.impulso.org.br/pt)
11. ItsNoon, [itsnoon.net/home](http://itsnoon.net/home)
12. Ketto, [ketto.org](http://ketto.org)
13. M-Changa, [changa.co.ke](http://changa.co.ke)
14. Milaap, [www.milaap.org/usa](http://www.milaap.org/usa)
15. Queremos, [www.queremos.com.br](http://www.queremos.com.br)
16. Rangde, [www.rangde.org](http://www.rangde.org)
17. Wishberry, [www.wishberry.in](http://www.wishberry.in)

#### CROWDSOURCING

18. CGNet Swara, [cgnetswara.org](http://cgnetswara.org)
19. I Paid a Bribe, [ipaidabribe.or.ke](http://ipaidabribe.or.ke)
20. MafutaGo, [mafutago.appspot.com](http://mafutago.appspot.com)
21. Marijipoti, [www.synacor.co.ke](http://www.synacor.co.ke)
22. Ushahidi, [www.ushahidi.com](http://www.ushahidi.com)
23. Wikimapa, [wikimapa.org.br](http://wikimapa.org.br)

#### EDUCATION

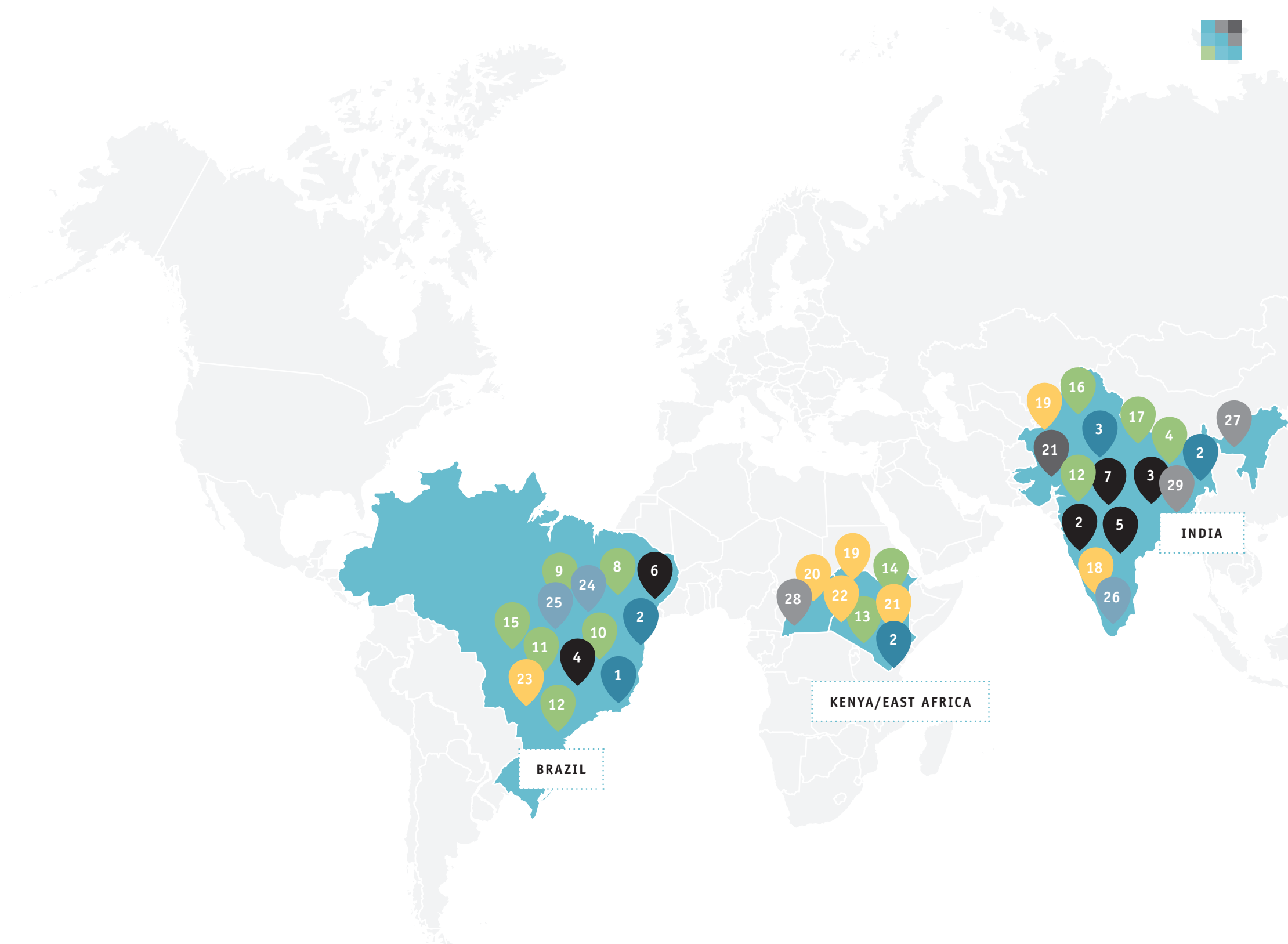
24. Descomplica, [www.descomplica.com.br](http://www.descomplica.com.br)
25. Educabilia, [www.educabilia.com](http://www.educabilia.com)
26. Mango Reader, [www.mangoreader.com](http://www.mangoreader.com)

#### SKILL SHARING

27. Nós.vc, [www.nos.vc](http://www.nos.vc)

#### MAPPING

28. Spacial Collective, [www.spatialcollective.com](http://www.spatialcollective.com)
29. MapSh.it, [www.mapsh.it](http://www.mapsh.it)



<sup>1</sup> Hotbeds have been enlarged for ease of viewing.

<sup>2</sup> Location points are not exact.



# Exploring the Characteristics of the Collaborative Models

This section explores the characteristics of the collaborative models inside the sharing economy that are working exclusively or to some extent at the BOP. In order to do so, we chose to break down a number of case studies based on their business model characteristics as described by Alexander Osterwalder and Yves Pigneur in their landmark work *Business Model Generation*.<sup>48</sup> To completely understand how these organizations are structuring themselves differently, we examined the building blocks that Osterwalder and Pigneur identified as crucial to forming business models: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure.

To simplify, we grouped some of these building blocks together, and Box 4 includes descriptions of the characteristics of the models we examined as they relate to the research. Following the descriptions is a table offering each of the cases examined for the research, along with their respective business model characteristics. The end of the section offers a more in-depth analysis of the takeaways from the business model generation framework.

In order to understand further the business models behind these digitally collaborative solutions, we explore in more detail below (i) the value proposition and expected impact for those using the product or service; (ii) their financial sustainability strategy, which could include a profit or other forms of recovering for operation costs, and (iii) key processes and resources that support the previous two activities.

As summarized in table on page 45, there are significant differences between the business models in the sharing economy when compared to the traditional economy. In addition, there are some general characteristics and interesting practices that can be extracted from these cases.

## Value Proposition: Desirable, Affordable and Social Impact

The examined cases tend to have a quite different value proposition for the users of the products and services when compared to their traditional counterparts. First, the digital collaborative solutions build extensively on their ability to deliver products and services at a lower price than that could be achieved through other sources.

The value in many of the cases comes not only from their affordability both to customers and beneficiaries, but also from the design of the systems, ability to reduce costs, the performance of the product, or the newness and accessibility of the product (meeting needs that customers either were not aware of or had gone previously unmet).

Organizations that have a low price to customers as a part of their value proposition would include: OpenIDEO, which offers social impact organizations an opportunity to tap into their design methodology and the design community for a relatively low price point; and the Hangzhou Bicycle Company which offers bicycles at no cost for the first hour. These systems both also bring value from their elegant, elaborate design and the size of their networks. Since the utility of a network increases with size, OpenIDEO's 40,000 users in 178 countries and Hangzhou Bicycle Company's 2400 stations (or every 300 feet) offer great value to customers.

The Mission 4636 initiative is one that drastically reduced the costs of the translation of messages from disaster victims. While the cost reduction is important, a higher value aspect to the project was the ability to rapidly scale operations to meet the needs of the heavily affected communities. Samasource would count performance in their value proposition citing the benefits that their Samahub software brings in increasing the accuracy versus crowdsourcing at a comparative price.

## BOX 4 BUSINESS MODEL FRAMEWORK

The business model concepts we grouped together for the analysis include:

### A. VALUE PROPOSITION

How the organization delivers value to the customer segments. The value proposition, as defined in this analysis, explains why customers are participating in the solution, either by sharing or collaborating—and how they benefit from the experience.

### B. CUSTOMER

*Customer segments:* The distinct populations targeted by the offerings. Many of the organizations in the research either target low-income communities, or individuals, NGOs, or businesses interested in reaching these communities.

*Customer relationships and channels:* This piece describes creative methods used to reach the BOP that help overcome limited infrastructure and the lack of traditional distribution channels. Some organizations have a transactional relationship with customers, others have a direct personal relationship with fewer larger customers. In addition, maintaining relationships with this community is not as straightforward. Often organizations need to communicate with customers using the most technologically basic forms.

### C. FINANCIAL SUSTAINABILITY

*Revenue streams:* For a solution to be successful in the long term, the solution needs to have a market-based approach meeting an unmet need. For businesses this revenue model would be income from the sale of products or services, usage fees, interest payments, rent payments, subscription fees, etc. For non-profits, there can be similar revenue models to scale, including (but not limited to) membership models, government partnerships, beneficiary support and more.<sup>49</sup>

*Cost structure:* Describes the costs associated with operating the organization. Many organizations that are leveraging the Internet to develop collaborative solutions for the BOP benefit from the cost reduction factors present in other Internet-based businesses including reduced coordination costs, lower start-up costs, and benefit from the long tail where the marginal cost of adding a new product is near zero.

### D. KEY PROCESSES

*Key resources and activities:* Describes the resources needed and the important elements an organization must do to deliver on the value proposition.

*Key partners:* Strategic alliances that enable a business model to function. Many of the organizations from the cases that have achieved scale have partnered with large corporations, NGOs, or governments to get their solution to a large number of people.

<sup>48</sup> See <http://www.businessmodelgeneration.com/>

<sup>49</sup> See the Stanford Social Innovation Review for examples of sustainable revenue models for nonprofits: [http://www.ssiireview.org/articles/entry/ten\\_nonprofit\\_funding\\_models/](http://www.ssiireview.org/articles/entry/ten_nonprofit_funding_models/)



The social impact of Samasource is another selling point, allowing businesses to create shared value with their projects that they would have otherwise have outsourced to the crowd.

For accessibility and newness, Wikipedia Zero, Majiripoti, Wikimapa and Catarse are all bringing new opportunities to the market that previously did not exist. Wikipedia Zero is a product that permits businesses to offer a unique new product benefit that can attract or retain customers. Majiropti brings value through a new offering addressing the leakage that occurs in the Kenyan water system. This may become increasingly valuable as water is not available in unlimited quantities. Wikimapa gives the residents of favelas the opportunity to map their communities and discover local businesses and resources.

This need was previously not addressed by existing mapping services. Finally, Catarse, although perhaps not the first crowdfunding platform in Brazil, is a platform that provides access to a community of donors who want to fund cultural projects. Without crowdfunding there is a gap for these projects to access capital. Catarse, like OpenIDEO and Hanzhou Bicycle Company, also brings the added network effect benefit of being the largest network in Brazil.

When aiming at low-income communities, if there is a commercial aspect to the transaction, it should be financially accessible, as well as more affordable than the alternative. At the moment, the favored price to the BOP for many collaborative models is zero. Many collaborative businesses and organizations we examined provide some form of their service for free for beneficiaries or participants.

It would seem that many of the businesses operate inside the constraints described by Chris Anderson in his book “Free,” where he points out that the traditional economic assumptions based on scarcity don’t apply to

Internet-based businesses. To Anderson, “free” is not an exception possible only because of cross-subsidies. It is a core part of the increasingly digital business environment where computing power, storage and bandwidth are increasingly cheap. Whenever the product can be delivered in the digital form, the trend towards “free” as a price is significant. In the case of organizations like Wikipedia Zero and Wikimapa, there is a situation where it is unlikely that the BOP will pay in mass for these solutions, but utility improves with more users, and thus it is better for the organization to give the product away to some customer segments while identifying other customer segments that are willing to pay for the same outcomes.

Also, in most of the cases, there is a strong social motivation behind the value proposition of the different digital solutions, since they directly address issues facing the BOP. As Harvard Professor Yochai Benkler has documented, human actions are more complex than acting purely out of self-interest, and there is a need to design systems that support the collaborative nature of human beings.

Whether contributing to the collection of human knowledge on Wikipedia, funding a Kickstarter project, or contributing design concepts to OpenIDEO,<sup>49</sup> many individuals and organizations interviewed for the research cite the social impact of the projects as critical to getting participants, businesses, government, or NGO partners on board. One expert interviewed for the research suggested that poor people would be less inclined to share for the benefit of humankind; and that they would be more motivated by sharing that benefits their families first and then their broader communities. In the research we found that, in at least two cases, those of Wikimapa in Brazil and Majiripoti in Kenya, low-income communities are willing to share information and knowledge that can lead to improvements in their well-being.

### Financial Sustainability: Based on Openness and Built for Scale

To understand the financial sustainability of collaborative solutions targeted at low-income communities, we need to look at the revenue streams and the costs associated with operating the organization.

If collaborative solutions in low-income communities are to be successful in the long term, they need to have a revenue model. Traditionally for businesses, this revenue model would be income from the sale of products or services. For nonprofits, there are several different models to scale, including (but not limited to) membership models, government partnerships, and contributions from massive amounts of people.<sup>50</sup>

However, what to do when you need to rely on “free” products and services? One organization from the research, Hangzhou Bike Share, has a “freemium” strategy,<sup>51</sup> others, such as Majiripoti, are built as a by-product of other activities (in this case the metering service they sell to multiple water management systems).

From a cost perspective, many collaborative solutions leverage the use of volunteers as a critical component. For example, content like the mapping of low-income favelas in Brazil must be user-generated to scale. Mission 4636 heavily leveraged volunteers from the Haitian diaspora to reach people affected by the 2010 earthquake in Haiti (ultimately this was a program for a limited time—not with aspirations for long term financial sustainability). OpenIDEO and Wikipedia both leverage volunteers to generate their products and maintain low costs. Many of the entrepreneurs argue that sharing brings substantial added value. Without the openness that encourages collaboration and participation, the successful models may not be as cost effective, scalable, or successful. This openness is also required to achieve the scale that is needed.



### RISKS ASSOCIATED WITH THE DIGITAL SHARING ECONOMY AT THE BOP

#### REGULATION

This area is still largely unregulated by governments and in some areas, like crowdfunding in Brazil, regulatory issues and misunderstandings may inhibit development of the sector.

#### GROWING THE INFORMAL ECONOMY

Many transactions occur outside of the formal economy where labor laws that have evolved to protect workers’ rights are not monitored.

#### ENABLING THE GIG ECONOMY

The digital sharing economy facilitates the long term trend of moving away from long term secure employment and benefits.

<sup>49</sup>This is consistent with Shirkey’s *Cognitive Surplus*.

<sup>50</sup>See the Stanford Social Innovation Review for examples of sustainable revenue models for nonprofits: [http://www.ssireview.org/articles/entry/ten\\_nonprofit\\_funding\\_models/](http://www.ssireview.org/articles/entry/ten_nonprofit_funding_models/)

<sup>50</sup>Where the basic product is free and additional services or advanced products are charged for.

<sup>51</sup>In his book, *The Long Tail*, Chris Anderson described how in the digital economy, businesses like Amazon take advantage of the “Long Tail Effect” where the Internet permits nearly infinite inventory of products at almost no marginal cost. To illustrate this effect, Anderson pointed out that Barnes & Noble had 110,000 titles in its physical retail space compared with Amazon’s 2.3 million (and growing) titles. At the time of Anderson’s work, the incremental inventory of products beyond the physical retail accounted for 25% of Amazon’s total sales.





An example of this type of openness can be found with the crowdfunding platform Catarse. Catarse makes its code available to anyone to use, including MedStartr—a new platform that crowdfunds healthcare innovation and 16 other companies. It is likely that Catarse stands to benefit from more crowdfunding platforms using and improving on their code. While sharing is a central tenet to the organization, Catarse has a clear revenue model that charges a 13% fee on successfully funded projects, and as the platform grows in users and projects funded, so too will their ability to scale and support their activities.

OpenIDEO also has a clear revenue model. Through charging a fee to all organizations that want to launch a challenge, the organization can launch multiple challenges at once, assuming there are interested clients. The main concerns or limitations to scaling would be the supply of contributing designers offering ideas, the number of community managers available to help steward the projects, and the resources available to implement solutions on the ground.

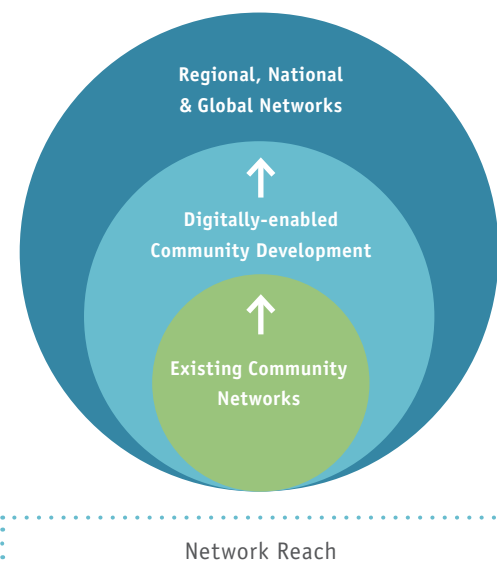
Samasource's revenue model is similar to OpenIDEO's in that the organization looks for clients that want to leverage Samasource's collaborative platform. Instead of looking for clients looking to design social change innovations, Samasource looks for companies or organizations that have large data issues that require human attention. The ability to scale, like OpenIDEO, is limited by the supply of BOP workers and partners, combined with the availability of Samasource staff and partners to manage the process. Additional challenges from a cost perspective likely arise from the unique nature of each project and technological needs of the clients. This is unlike OpenIDEO where the platform takes each client through the standard design phases.

At the same time, it is clear that some of the existing models are not sustainable. They are leveraging the digital sharing economy, but do not yet have well-functioning revenue models. This is obviously not just a characteristic of the digital sharing economy. Many new Internet innovations can be bleeding-edge developments. The Internet itself existed for decades before it was widely commercialized; now many entrepreneurs develop online products with the goal to build a massive user base that can later be monetized (example Facebook). It is likely

**WHY IS THIS IMPORTANT?**

**THE NETWORK EFFECT**

Internet-enabled solutions have the potential to allow the BOP to access larger networks. Larger networks can mean cheaper capital, less information asymmetry, and access to goods, jobs, and opportunities, thus overcoming the poverty penalty.



that Internet innovations targeted at the BOP will have similar winners and losers and will need to adjust their business models in order to identify the correct customer segments and revenue models to serve this community.

Looking further at costs, while traditional businesses tend to focus on their most profitable products and clients, most digital sharing economy initiatives are actually built to exploit the long tail effect.<sup>51</sup> This is a very important characteristic of business processes in the digital sharing economy. The incremental cost of an additional listing on Airbnb or an extra car on car sharing site RelayRides is negligible. These businesses leverage the Internet for inventory as well as distribution, reducing costs, increasing entrants, competition and thus placing downward pressure on prices.

This is also true among the cases we explored. The incremental cost of new Wikipedia pages for Wikipedia Zero or a new project being crowdfunded on Catarse is negligible. The result is that collaborative business models can scale cost-effectively and reach many more BOP users than traditional businesses or development projects.

**Key Processes: Partnerships, Technology, and Grassroots Key to Success**

The research identified critical mass and scale as key success factors, since BOP digital sharing economy solutions are designed to leverage the power of networks. Digital sharing solutions can be cost effective and efficient at managing and processing large amounts of data in a short period of time. Very few organizations could ramp up to scale as fast as Mission 4636 or Wikipedia Zero.

There are various organizations and businesses attempting to leverage the digital sharing economy, but some fail to gain traction due to the lack of a wide user base. How organizations can go about achieving critical mass can vary from organization to organization. For OpenIDEO and Catarse, having a compelling brand, well-thought out design and a good user experience contribute to achieving a critical mass of users. In the case of Wikipedia Zero, partnerships are essential in reaching the desired populations. For example, one partnership with Aircel,

a mobile provider in India, can enable the organization access to 60 million new subscribers.

Partnerships are also key to addressing the challenges in the distribution systems—until there is complete connectivity of the poor and a common standard of electronic payment, digital sharing solutions at the BOP rely heavily on partners for distribution. These creative distribution partnerships are needed to help overcome limited infrastructure and the lack of traditional distribution channels. The organizations from the cases that have achieved scale have partnered with large corporations, NGOs, or governments to get their solutions to a large number of people.

Finally, technology is an absolutely imperative key resource in the success of business models targeting the BOP. First, technology is important to overcome existing accessibility and digital literacy barriers. It is critical that an interface be accessible to the lowest common denominator of devices, such as feature phones, as well as to smartphones. In addition, the interface needs to be user-centered, intuitive and easy for participants to use immediately. As mentioned earlier in the discussion of the long tail, software technology is inherently scalable. In nearly all cases a fairly small number of software developers can be leveraged to have enormous impact. Investment in the development of Samasource's SamaHub software allows the organization to standardize training, impact measurement, and operations across markets and locations.

**Beyond traditional community development**

The innovators examined in our research are market pioneers, and some of the first ones to develop digital collaborative solutions that embrace low-income communities. While engaging with these communities, they are creating new markets and opportunities for others to replicate or remix later with the right business models. In a number of cases, they are developing linkages with private-sector companies, while in others they are creating public value that attracts philanthropic or government support, but regardless of whether the solution is state-led or market-driven, the digital aspect of the platform enhances potential value and impact for the community.



|  | Impact  | Customer  |  |  | Financial Sustainability   |   | Key Resources  |  |
|--|---|---|--|--|--|---|--|--|
|  | Value Proposition   | Customer Segments   | Customer Relationships and Distribution Channels   |  | Revenue Streams  | Cost Structure  | Key Resources & Activities   | Key Partners   |
| <b>Open IDEO</b>   | OpenIDEO offers a lower cost innovation platform that takes organizations interested in solving critical social issues through the design process. The platform leverages the talent and brain power of designers all over the world who, through the “journey,” gain insights into the human-centered design process | <ul style="list-style-type: none"> <li>The challenge sponsors (corporations, nonprofits, foundations).</li> <li>The designers who participate and contribute to the design process.</li> <li>The organization that ultimately implements the new product or service.</li> </ul> | <p>Direct personal relationship with the primary (paying) customers, like Unilever for example.</p> <p>Relationship with the designers occurs through the online community.</p> <p>Relationship with the beneficiaries occurs through the final realization phase when IDEO teams implement solutions on the ground.</p> |  | <p>Charge a flat fee for challenges averaging \$100,000 per 12-week design challenge. Resell platform as an innovation engine to other organizations.</p> <p>Solutions for the BOP developed through the design process must have their own revenue model.</p>   | Costs are low for the organization—essentially the costs of the community managers to interact with the online users combined with the costs of business development. For clients that require additional implementation of pilots on the ground there are additional costs (with subsequent revenues). | Easy, user-friendly, accessible, web-based interface for designers to contribute inspirations (interface not used by the BOP). Peer contribution and feedback is integral to identifying the solutions   | Work with NGO partners on the ground to implement final product solutions. These partners include the Grameen Creative Lab or Water & Sanitation for the Urban Poor (WSUP), and Clean Team (a business that now sells the OpenIDEO designed toilet in Kumasi, Ghana. |
| <b>Wikimapa</b>  | Wikimapa offers a mapping solution to low-income communities (favelas) overlooked by mapping tools like Google maps.  | <ul style="list-style-type: none"> <li>Foundation and government sponsors.</li> <li>Users and creators of mapping information for favelas.</li> </ul>   | <p>Direct personal relationship with the primary (paying) customers such as Telefonica Vivo Foundation and the National Institute of Technology.</p> <p>Relationship with low-income communities takes place through young students (“wiki-reporters”) who map the neighborhoods.</p>                                    |  | <p>Organization is still in start-up phase. Currently relies on philanthropic support, and is developing revenue model with Wayra Accelerator for how to monetize the data.</p>  | Content is user-generated and collected by wiki-reporters. Wikimapa estimates annual costs of operating in one slum to be US \$29,000.  | <p>Accessible via web, low-tech mobile, and smartphones. 500+ users mapping 1200+ interest spots in first year.</p> <p>Access to Wikimapa’s favela maps is free, just like Google maps. Taps into the desire to feel part of a community.</p>  | Young student wiki-reporters who live in the favelas collect the information.  |
| <b>Wikipedia Zero</b>  | WikipediaZero brings knowledge to people in the least developed countries for free through their mobile phones. In addition, the organization brings an innovative marketing offering to mobile phone service providers.  | <ul style="list-style-type: none"> <li>Mass market individuals in less developed countries.</li> <li>Mobile phone service providers in less developed countries.</li> <li>Grassroots contributors and Wikipedia users from anywhere in the world.</li> </ul>                    | <p>Direct personal relationship with the service providers.</p> <p>Mobile end users access through their phones. Wikipedia Zero working to be compatible with low end, older, cheaper devices.</p>   |  | <p>Wikipedia Zero is part of Wikipedia, which has strong grassroots user support. Latest funding drive raised \$25 million in 9 days.</p> <p>Raised \$600,000 in winning the Knight Foundation Knight News Challenge.</p>  | <p>Small web development team can reach 483 million subscribers in 12+ countries.</p> <p>Mobile service providers assume the costs of the data transmission.</p>  | <p>Provide free access to Wikipedia in some of the countries by way of the lowest common denominator: low tech feature phones.</p> <p>End users organize grassroots efforts to advocate for local telecoms operators to offer the product. Wikipedia supplies a tool kit for community members to self-organize.</p> | Partnership with mobile service providers including Orange Niger, Orange Kenya, Digi in Malaysia, Aircel in India, and several others.   |
| <b>Majiripoti</b><br><i>(and Majisoft, Products of Synacor Consortium)</i> | Majiripoti works with water service providers and the public to help accurately manage and conserve water resources. Solving the problem of massive leakage in the Kenyan water system.   | <ul style="list-style-type: none"> <li>Water service providers in Kenya.</li> <li>Mobile phone users.</li> </ul>  | <p>Synacor leverages its commercial partnerships with water service providers to partner with them on its nonprofit initiative Majiripoti.</p> <p>Mobile users access Majiripoti via a Windows phone and an online platform.</p>   |  | <p>Currently a start-up. The intended revenue model for Majiripoti is through corporate donations from Synacor (which earns revenues from subscription fees from 4 major water service provider clients for its Majisoft product). Free to use/participate for end users. Intend to incorporate non-financial rewards for participation.</p> | Cost-effective to scale. The organization has a lean structure including a small web development team and maintenance of online and mobile platforms. Can be replicated to other regions/social issues.   | Participants take pictures of water leakage and receive game-like rewards for participation. Designed for low-tech mobile (SMS), smartphones, Twitter, Facebook. Model cost-effective for water companies by solving issues with the “crowd” help.   | Water service providers.   |



|  | Impact  | Customer   |   |  | Financial Sustainability   |  | Key Resources   |   |
|--|---|--|---|--|--|--|---|---|
|  | Value Proposition   | Customer Segments  | Customer Relationships and Distribution Channels  |  | Revenue Streams  | Cost Structure   | Key Resources & Activities  | Key Partners  |
| <b>Hangzhou Bike Sharing</b><br><i>(state-owned)</i> | The bike-sharing program in Hangzhou, China offers affordable convenient transportation to all citizens.  | <ul style="list-style-type: none"> <li>Residents of Hangzhou.</li> <li>The city government of Hangzhou.</li> </ul>   | Bikes are distributed across the city in 2400 stations (every 300 ft).  |  | <p>Charge for the use of the bicycles by the hour. The first hour is free, 1 yuan for the second hour, 2 yuan for the third, and 3 yuan for each hour thereafter.<sup>52</sup></p> <p>Smart cards used to check out the bikes: there is a 200 yuan (US \$30) start-up deposit required.</p> <p>In addition, station billboard and bicycle advertising are intended to be lucrative sources of future revenues.</p> | Capital intensive, high upfront costs. \$26.35M to launch along with \$39.53M in low interest government loans.  | <p>World's largest bike-sharing program. Aiming for 175,000 bicycles by 2020.</p> <p>Touch screen kiosks and smart cards for bicycle check-in and check-out and RFID to track bicycle location information. Aligned with public transportation and rewards the use of the system with transit discounts.</p>  | Government partnership to place service around the city.  |
| <b>Catarse</b>                                       | Catarse provides the most popular online platform for Brazilians to raise donations for projects from a community of supporters.                                      | <ul style="list-style-type: none"> <li>Middle class Brazilians looking to support social projects.</li> <li>Individuals or organizations looking to raise funds for cultural projects such as art, education, the environment, etc.</li> </ul> | Customer interactions occur through the web. Project creators develop the content for the projects for which they are raising funds. Customers can choose the projects that they are interested in funding. Customer interactions occur through the web. Project creators develop the content for the projects for which they are raising funds. Customers can choose the projects that they are interested in funding. |  | Catarse model: 13% fee on successful projects. Recently achieved break-even after 2 years.   | Very lean cost structure. 13 employees across different Brazilian cities. Costs include web development, design and the management of the community. Highly leverageable, the costs remain low as the organization scales. | Simple, straight-forward, web-based platform where the community funds projects of social value. Catarse has 150,000 users.   | NGOs or other partner organizations. (Especially necessary for projects targeted at the BOP like Pimp My Carroça, street artist partner Mundano initiated the campaign which raised \$32,000 for low-income recyclers). |
| <b>Samasource</b>                                    | Samasource offers a cost competitive alternative to crowdsourcing that has higher accuracy rate and the added benefit of social impact—training workers from the BOP. | <ul style="list-style-type: none"> <li>Enterprise customers including Google, Walmart.com, eBay and more.</li> <li>Workers from disadvantaged communities.</li> <li>Local NGO partners that recruit and train workers.</li> </ul>              | The organization maintains direct personal relationships with enterprise customers. Relationship with workers takes place through proprietary online platform where projects are managed.   |  | <p>Client-based, fee for service revenue model. Plan to achieve break even within 5 years. 400% revenue growth in 2012.</p> <p>Philanthropic support to sustain the organization until break-even.</p>   | Samasource Samahub software that trains workers and measures social impacts reduces costs. Revenues support worker wages and operational costs.  | Hiring and training workers from disadvantaged communities to perform tasks on the interface and SamaHub software. Nearly 4,000 workers in 16 sites.  | Work with NGOs and global partners (franchises) on the ground to recruit and train workers.   |
| <b>Mission4636</b>                                   | Mission4636 was a collaborative effort that reduced the cost and increased the response time after the Haitian earthquake through crowdsourcing.                      | <ul style="list-style-type: none"> <li>International aid sponsors</li> <li>The US State Department</li> <li>Individuals affected by the natural disaster.</li> </ul>   | <p>Customer relationships with sponsors occurred through direct personal contact</p> <p>Effort was publicized through the radio and word of mouth highlighting the short 4636 number people could text for help.</p>  |  | <p>International aid donations.</p> <p>Contract from US State Department to Samasource to continue translation and disaster response.</p>  | Labor provided through volunteers.   | <p>Haitian diaspora who volunteered to translate incoming text messages were a key resource—90% of the work was performed by Haitian people.</p> <p>The project required basic feature phone SMS. Messages were translated by crowdsourced volunteers from the Haitian diaspora and communicated to aid organizations. The system was set up in 48 hours, went from 0 to processing 80,000 text messages in five weeks.</p> | Network of international aid organizations and corporations: MedicMobile (Frontline SMS), Digicel, Crowdfunder.   |

<sup>52</sup> China's Hangzhou Public Bicycle: Understanding Early Adoption and Behavioral Response to Bikesharing, [http://76.12.4.249/artman2/uploads/1/China\\_\\_\\_s\\_Hangzhou\\_Public\\_Bicycle.pdf](http://76.12.4.249/artman2/uploads/1/China___s_Hangzhou_Public_Bicycle.pdf)



# The Potential Impact of the Sharing Economy for the BOP

In the introduction, we posed the research question of whether the digital sharing economy generates social impact at the BOP. In this chapter, we explore this question further based on the information collected from the more than 100+ organizations identified during the research phase. By matching organizations with the needs of the BOP, we hope to identify both the main opportunities and some potential adverse effects that these different solutions may have on poor communities over time.

## How can collaborative innovations meet the needs of the poor?

After reviewing digital sharing organizations, businesses, and start-ups from around the world, the research team developed a framework to help evaluate whether the digital sharing economy is impacting (or has the potential to impact) the BOP. The framework considers the needs of the BOP from the survey sampling over 2,000 women at the BOP conducted by GSMA mWomen called *Striving & Surviving: Exploring the Lives of Women at the Base of the Pyramid*.

The research investigated the key life priorities of women at the base of the pyramid, with the interest in developing mobile solutions to meet those needs. The research found that across regions surveyed for the research, the 10 greatest life priorities were (in order of priority): Housing, Kids' education, Health for family, Stable income, Business (interest in entrepreneurship to support their families), Happy marriage, Security in old age, Good meals for family, Bank account, and Admiration by family.

The first step consisted of grouping the organizations by their impact areas. This helped to visualize where there are lots of organizations that meet BOP needs, and where there are few.

We have depicted graphically (right) the life priorities for the BOP and where the digital sharing economy is having an impact. A quick glance at the table indicates that the sharing economy, so far, has not really succeeded at meeting the number one priority of the BOP—housing. In the developed world, research has suggested that car-sharing has been the gateway for a majority of people to the digital sharing economy. It remains to be seen what would be the main draw for the BOP, but it is likely that due to the nascent nature of the digital sharing economy, more trust with digital sharing would need to be established before something as intimate as housing might be shared.

A deeper look, however, indicates that many of digital sharing solutions are addressing some areas that have been identified as key inputs for economic growth: trained labor, capital, and technological development. As witnessed in the previous sections of the research, many organizations like the Khan Academy, Coursera, Code Academy, or Samasource are training and have enormous potential to train and educate people in emerging markets to build marketable skills. At the same time, collaborative oriented organizations offering crowdfunding and peer-to-peer loans are bringing new capital to areas overlooked by financial institutions (as indicated in the section on crowdfunding). The sharing economy is leading to a new way of organizing labor and capital that may have implications on how economies grow; furthermore it is enabling new opportunities for north-south and south-south collaborations that bring new opportunities to reduce poverty.

| BOP Desire   | Emerging Market Solution  | Current Impact at BoP | Potential for Impact | Risk of Negative Impact |
|--|---|-----------------------|----------------------|-------------------------|
| <b>Housing</b>   | Share.Habitat, Socialab (Corporación Kayrós), TETO (Un Techo para mi País—via Catarse)  | Low                   | Low                  | Low                     |
| <b>Kid's Education</b>   | Code Academy, Coursera, Khan Academy, Open University of West Africa, The Seed Africa, Udacity, Wikipedia Zero, Youtube, Zaya Education Micro Clouds  | Medium/High           | High                 | Low                     |
| <b>Health for Family</b>   | Dimagi, Kangu.org, Kopernik, Majisoft, Mapsh.it, Mission4636, OpenIDEO, Socialab, Ushahidi, Toilet Hackers, World Bank Health and Sanitation Hackathons   | Low                   | Medium               | Low                     |
| <b>Stable Income and Business (Entrepreneurship Opportunities)</b> | Agri-Fin, Babajob, Catarse, Crowdfunder, Cumplo, Energy in Common, Favela Experience, Fondeadora, Global Giving, Good World Solutions, Idea.me, ImpactCrowd, Impulso, Kiva.org, LaborVoices, MafutaGo, MaanaMobile, Milaap, Mifos, Samasource, ShokoShambani, SunFunder, Socialab, Wikimapa | Medium                | High                 | Low/Medium*             |

\* Models that deliver employment and and/or fund microenterprises and stable income to the BOP carry some risk for two reasons: 1) digital sharing solutions often occur outside the formal economy where the BOP may be vulnerable to labor law violations, and 2) there could be negative side effects to massive inflows of capital to the BOP as witnessed with the controversy over SKS Microfinance in India.<sup>53</sup>

<sup>53</sup>[http://www.nytimes.com/2011/05/11/business/global/11micro.html?\\_r=0](http://www.nytimes.com/2011/05/11/business/global/11micro.html?_r=0)

# Conclusions and Recommendations

This publication emerged from a shared belief that the digital sharing economy is becoming important and relevant to low-income and marginalized communities, but that the number of cases and examples are still limited.

Also, there was concern that existing conceptual frameworks were not adequate to tell the story of this emerging area. There was a need for developing an agenda based on empirical cases, contributing to a better understanding of how people in low-income communities can share, produce, and consume in collaborative ways, facilitated by digital tools.

The research provides an important first glimpse into the potential of the digital sharing economy to impact low-income populations. As the trends in connectivity, low-cost hardware, and entrepreneurship in emerging markets grow, we anticipate that with them will grow these different forms of sharing that leverage the collaborative power of the Internet and opportunities for development and improvements in well-being. Based on the in-depth analysis of cases, some of the key conclusions and recommendations are presented in this chapter.

## Final Conclusions

### Digital sharing economy is increasingly relevant to the BOP

The research explored eight areas in which digital collaborative solutions are having impacts in developing countries. These areas are: crowdfunding; employment and income generation; new community-led technological innovations; natural resources stewardship; disaster relief; asset-sharing; civic engagement; and exchanging knowledge, education and professional development.

The BOP's most pressing needs that are currently being addressed by the digital sharing economy include, primarily and not surprisingly, employment and income generation. This area is by far the one where most solutions exist today, though we also anticipate the digital sharing economy to become increasingly relevant for education and job training purposes.

This research also demonstrates that sharing and collaboration present potential quick ways to raise standards of living by creating access rather than ownership. For example, the expansion of Wikipedia to developing countries is impacting millions of readers who can access information not readily available in their local communities. Cases such as Wikimapa show how approaches that build, coordinate and share disperse resources in low-income communities can be designed in areas where public or private institutions do not reach.

### Growing interest in digital collaborative solutions

A growing interest is emerging globally to drive social innovation through digital collaborative solutions. Increasingly, open source has been deployed, adjusted or created in developing countries. More social entrepreneurs with strong international experiences put their talents to create solutions that address social needs in their home countries. Evidence of this trend can be found at the "hackathon" events catering

to entrepreneurs like Startup Weekend or in the proliferation of business incubators and accelerators of all kinds that help social entrepreneurs build their businesses and access capital to grow.

These factors are contributing to a rapidly growing network of actors that can quickly adjust digital platforms and deploy them to new situations. Although the experiences may not be that efficient at first, we must remember that Wikipedia was initially discredited before eventually becoming globally accepted as the largest encyclopedia in the world. In the same way, some of the forms of digital collaborative solutions discussed in this report may evolve from ad-hoc experiments to become the most obvious way to address a wide variety of developmental challenges.

### Digital sharing economy as a new model for development

The research demonstrates that the digital sharing economy can become a new model for development. Digital collaborative solutions do not consider the BOP as a "new market frontier" where companies can find new consumers and entrepreneurs. Instead they build on the extensive experience that many communities have with the "self-help" and "solidarity" elements associated with the sharing economy.

The cases in this report highlight how when people collaborate through digital platforms, they become empowered and achieve significant social outcomes, such as the cases from Mission4636 in the context of disaster relief. This may have important implications for how international development is delivered in the future. For example, donor organizations may decide to shift their approach by identifying social issues they want to resolve, and convening multi-stakeholder communities and platforms to collaboratively find the best solutions. This would be a significant shift from the current model where social capital providers handpick organizations to deliver specific projects.

*(continued on page 52)*



A number of initiatives are already organizing “online challenges” globally (similar to the ones OpenIDEO manages), and it will be important to evaluate their results to understand their benefits versus more traditional approaches.

### Tapping latent capacity

In their book, Rachel Botsman and Roo Rogers detail how collaborative consumption utilizes (and often monetizes) “latent capacity”—our empty car, unused power drill, the available brainpower of individuals,<sup>54</sup> or a reputation system that enables “trust.”

Latent capacity at the BOP is most apparent with the under-utilization of labor and workers. Organizations such as Samasource have been able to tap into this latent capacity by crowdsourcing global outsourcing projects. Other solutions like Wikimapa are able to map invisible community resources (including some the communities themselves didn’t know they had) or to tap the mobile phone users’ awareness around better management of natural resources (in the case of water and Majiripoti).

Nevertheless, some cases in this report such as crowdfunding platforms would clearly not happen without the engagement of middle or high-income groups. Shared resources can be important to low-income groups, but many existing solutions can be out of their reach. Bike-sharing services are not rushing to place bikes in slums, though creative entrepreneurs are taking platforms such as Airbnb to the heart of favelas in Rio de Janeiro.

### Trust as important enabler

Trust is a significant enabler of the digital sharing economy. In a way, trust and reputation can be more valuable than currency. They can give people access to physical resources that they would not otherwise have. For the BOP, trust is usually limited to a social network of family and close friends that does not necessarily extend to a wider community. This lack of sustainable reputation systems can prevent widespread sharing in different settings and the emergence of collaborative consumption at the BOP.

Digital reputation systems may be changing this quickly. Peer-to-peer markets such as eBay have set the tone, brokering millions of transactions based on digital reputation systems. A number of digital sharing economy initiatives are intending to develop peer-to-peer platforms that help assess the credit worthiness of potential borrowers without

credit history. Expanding collaborative consumption in low-income communities will need innovations such as these to develop sustainable reputation systems that can handle the informal sector and people outside the financial system.

### Final Recommendations—building an ecosystem

Based on the analysis in this report, we can identify a number of potential venues of action in order to build an effective ecosystem that can accelerate the potential positive impact of the digital sharing economy at the BOP.

### Philanthropy

From a philanthropic perspective, digital sharing technologies designed for the BOP are very cost-effective in terms of impact per dollar spent. Relatively small investments in teams working on start-up projects like Majisoft or Wikimapa could have huge implications for improving the quality of life at the BOP. The Wikimedia Foundation has a team of 125, and Wikipedia Zero has a small team of 6, but this group is able to provide access to information for nearly 500 million people in developing countries. Similarly, the Khan Academy reaches 6 million students a month with only 40 employees. This reach would not have been possible without the support of philanthropy. The organization is now working with the Carlos Slim Foundation and The Lemon Foundation to expand offerings in Latin America and Brazil. Philanthropy plays an important role in developing the concept, testing the model, and reaching sustainability until investments can provide the necessary growth funding.

### Investment

Many of the organizations we studied are young and need capital to grow. From an investment perspective, collaborative businesses have disruptive potential that can lead to creating new demand, profits, and “blue oceans”—markets where there are not yet competitive rivals. To get a sense for the disruptive potential of new types of businesses in emerging markets, we need look no further than M-Pesa, which revolutionized banking, financial services, mobile services, and the way that money is exchanged while improving security. There is much inefficiency that exists in emerging markets, and the business model properties of digital sharing businesses: reduced cost from collaboration and increased utility of assets suggests room for potential profits. There is an opportunity for several “Collaborative Funds” focused on

emerging markets, preferably those targeting investments that improve low-income communities.

### Corporate partnerships

Some of the most successful digital sharing economy examples at the BOP have leveraged the massive reach of corporations to generate social impact. Samasource’s corporate partners are a key factor throughout the value chain—some serving as client customers and others as eventual beneficiaries of Samasource’s trained labor. Businesses looking to gain or expand a foothold in emerging markets can gain access to new customers and establish long-term relationships with an upwardly mobile population that aspires to enter the middle class. By sponsoring an OpenIDEO challenge promoting sanitation solutions in Ghana or working to launch a toilet academy in Vietnam,<sup>55</sup> Unilever is not just addressing a critical quality of life need for the BOP, it’s also positioning itself for future sales of hygiene products for years to come. Finally, Wikipedia Zero would not be possible without cooperation from mobile service providers, which gain marketing benefits and new customers from the offering.

### Lens for environmental sustainability

“Green” digital sharing economy solutions can improve environmental sustainability, and further encouragement from public policy and environmental organizations could serve to both preserve resources and spur economic growth—often options that are seen as opposing. Whether it is crowdfunding 722 miles of rainforest in Ecuador, a mobile app that addresses the 49% leakage of Kenya’s water output, or a massive bike-sharing program that is more affordable than the bus, digital sharing solutions can mitigate the effects of environmental degradation, which disproportionately affects the poor.

### Mentorship and continuous support

Many aspiring digital sharing economy ideas and solutions “die on the vine” after initial startup collaboration events like theme or issue hackathons. These include the World Bank’s water and sanitation hackathons, Startup Weekend, and Garage 48, an organization that has organized hackathons in Eastern Europe, Russia, and Africa. Incubators and accelerator programs focused specifically on the digital sharing economy at the BOP can change this dynamic by ensuring that these budding entrepreneurs continue to be supported and helped to access financing or philanthropy after their initial launch.

### Regulation and expansion of crowdfunding

Crowdfunding platforms are addressing a critical issue in the entrepreneurial ecosystem—access to capital. Investors and philanthropists alone can never meet the growing needs of entrepreneurs with businesses impacting the BOP, and crowdfunding is one tool to help fill the gap. South-south crowdfunding solutions have emerged in Latin America, especially in Brazil, but there could be a push for more crowdfunding options to meet the needs of the BOP globally. Crowdfunding has proven to be successful in delivering capital to projects benefitting the BOP—like Sughar, the social enterprise in Balochistan province in Pakistan that used crowdfunding site Indiegogo to raise \$10,000 to train and employ women in making fashion items, while educating communities on honor killings. Crowdfunding is increasingly regional and theme and sector specific, and recent developments like permitting equity shares in the United States, and mobile payment crowdfunding in Kenya could further the growth of crowdfunding and have positive implications for the BOP.

### Expand electronic payment, particularly mobile payment access

Mobile payment options have expanded rapidly in Africa, but are far from universal. Expanding mobile payment options would allow for more people from the BOP to participate in the digital sharing economy. Encouragement of governments to decrease regulation of mobile payment could allow the digital sharing economy to expand, bring people from the BOP into the formal economy, and increase the velocity of money moving through the economy at the BOP. The international donor community should continue to support mobile payment options specifically targeting the needs and unique profile of the BOP.

### Further research on policy

It is important to work towards building a positive policy environment for digital sharing economy businesses operating at the BOP. As seen in several instances, regulation may pose the greatest risk to the growth of the digital sharing economy. It is important for policymakers to develop legal frameworks that allow for these business models to emerge, in particular for the BOP. In addition, promoting the digital sharing economy as a tool to address the needs of the poor in the international development community, and advocating for the digital sharing economy to be on the agenda of multilateral organizations could be one way to foster positive growth for the sector.

<sup>54</sup> Clay Shirky calls the advent of individuals using their excess free time for generosity—“cognitive surplus.”

<sup>55</sup> <http://www.guardian.co.uk/sustainable-business/unilever-to-launch-vietnam-toilet-academy>



## Glossary List of Terms<sup>55</sup>

**Base of the Pyramid (BOP):** a diverse group of roughly four billion people who earn less than \$5 a day in local economic purchasing power.

**Broadband Connectivity:** High-speed Internet access allows users to access the Internet and Internet-related services at significantly higher speeds.

**Mobile Broadband:** Also called wireless wide area network (WWAN) technology, provides wireless high-speed Internet access through portable devices.

**Business Incubators and Accelerators:** Organizations that prepare companies for growth by providing guidance and mentorship at different stages in the business life cycle.

**Collaborative Consumption:** A social and economic system made possible by network technologies that moves away from the old industrial economy and enables the sharing and exchange of all kinds of assets. These services often give people the benefits of ownership with reduced personal burden and cost with also lower environmental impact than the traditional hyper consumption model.

**Collaborative Enterprises:** Enterprises leveraging the power of Internet collaboration to deliver goods and services.

**Commons-based Peer Production:** Emerging model of production where groups of individuals successfully collaborate on large-scale projects following a diverse cluster of motivational drives and social signals, rather than either market prices or managerial commands. Term coined by Harvard Professor and legal expert Yochai Benkler.

**Crowdfunding:** A collective cooperation of people who network and pool their money and resources together, usually via the Internet, to support efforts initiated by other organizations.

**Crowdsourcing:** The practice of obtaining information (or input into a particular task or project) by enlisting the services of a number of people, either paid or unpaid, typically via the Internet.

**Digital Sharing Economy:** An economic system of organized sharing, bartering, lending, trading, renting, gifting, and swapping in which transactions are managed digitally.

**Freemium:** A business model, especially on the Internet, whereby basic services are provided free of charge while more advanced features must be paid for.

**Hackathon:** A combination of the word ‘hack’ and ‘marathon’ that refers to an event in which programmers come together over short period of time to collaborate on the development of software.

**Informal Employment:** Work that is outside of the formal structures, protection and taxation of governments.

**Massive Open Online Courses (MOOCs):** Online education resource websites that offer open online distance learning for large-scale participation.

**Microfinance:** The lending of small amounts of money at low interest to new businesses in the developing world.

**Microwork:** Microwork is a series of small business tasks that have been broken out of a larger project including activities such as market research, data input, data verification, and translation.

**Mobile Financial Services:** Banking services such as payments, savings and transfers made accessible through mobile devices. The uptake of these services in the developing world is attributed to the widespread availability of mobile technology in remote regions.

**Open Source:** a program in which the source code is available to the general public for use and/or modification from its original design. Open source code is typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community.

**Peer-to-Peer (P2P) Lending:** A lending model where unsecured personal loans are made with the help of a third-party intermediary. Borrowers complete an online application, and their credit-worthiness determines the interest rate of any potential loan. P2P companies then match the borrowers with lenders willing to risk funding the loan.

**Prosumers:** A combination of the words ‘producer’ and ‘consumer’ that describes the blurring of the two roles where consumers take an active role in product customization, leading to an increase in user-generated products and content. Ex. YouTube

**Ridesharing:** The act of sharing motor vehicle transportation with another or others, especially among commuters. Use of digital technologies add flexibility to rideshare arrangements by allowing drivers and passengers to arrange occasional shared rides ahead of time or on short notice.

**Social Entrepreneurs:** Individuals that play the role of change agents in the social sector by operating for-profit enterprises driven by strong social values.

**User-centered Design:** is a product design methodology and process that focuses on the needs, limitations, and preferences of end users.

<sup>55</sup>Sources: FCC, Microsoft, Inc. Magazine, Harvard Business Review, Oxford Dictionaries, The Economist, World Bank, U.S. Small Business Administration, Entrepreneur, MIT Department of Civil and Environmental Engineering, U.S. Department of Health and Human Services, Forbes



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