



innovation brief

Embracing the Bottom of the Pyramid with Frugal Innovation

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“At a time when economic development and job growth are key issues in our country’s corporate and political landscape, India’s economic boom is a shining example of what is possible.”

In the search for untapped markets, most business leaders previously viewed the bottom of the economic pyramid (BOP)—the estimated 4 billion people in the developing world who live on less than \$2 per day—as an unprofitable and risky demographic. Several assumptions lead to this conclusion: the BOP population does not have the buying power to make investment worthwhile; the goods and services available to this population are already inexpensive and leave little room for competition; and the population does not know how to use advanced technologies and therefore does not appreciate innovation.¹ These misconceptions have kept this population largely underserved of products and services.

In recent years, however, some large companies have woken up to the commercial potential of the BOP. While developing countries are difficult markets to enter because of their lack of infrastructure, unpredictable income streams, and underdeveloped public policies, they have other attributes that companies find compelling. Many developing countries, for example, have fast growing economies. Most also have an abundant and relatively inexpensive labor force. Moreover, developing countries have an enormous customer population that has a huge and latent demand for low-priced, high-quality goods and services¹.

This paper provides an introduction to the ways in which companies are radically changing their business models and strategies to target the BOP. It explores the conditions necessary for companies to practice ‘frugal innovation,’ and create new inexpensive, high-quality products and services. It also provides examples of some Indian start-ups that have successfully executed a frugal entrepreneurship strategy. Embracing the BOP population through frugal innovation requires ingenuity and vision. When companies are successful, they not only create additional sources of growth and new cost-saving opportunities, they also improve living conditions in the developing world.²



A bird's eye view of Kolkata, where Professor Banerjee spent the spring semester on a Fulbright-Nehru Fellowship.

Rethinking the Bottom of the Pyramid

To meet the needs of the BOP, companies must devise new business strategies that are very different from the ones they use in developed markets. Before doing so, company leaders must do two things: first, challenge any assumptions they might harbor about the BOP; and second, adapt existing business metrics for this population. These are essential prerequisites to new models of innovation.

1. Rethink assumptions: The corporate world holds many misconceptions about the BOP market. One of the most common beliefs is that the BOP population lacks buying power and is therefore unworthy of investment. But while members of the BOP population may not have sufficient individual income, as communities they have a remarkable purchasing power. The poor who live in the slums of Rio de Janeiro, for instance, have a total buying power of \$1.2 billion.¹ The BOP represents a huge and largely untapped customer base.

Another false impression about the BOP population is that its members already have access to cheap goods of decent quality. This is incorrect. Frequently, the BOP population only has access to the lowest quality products and services, and because of the lack of infrastructure and the dearth of bulk discount stores, these poor communities pay relatively higher prices than middle and upper class consumers. To be sure, there is vast room for competition.

A third erroneous belief about the BOP is that its population doesn't understand or appreciate technology. The BOP population is more sophisticated than it may appear, however. Take, for instance, the fast-growing area of mobile communication. According to a report from the International Telecommunication Union, mobile cellular penetration in the developing world reached 70% at the end of 2010—a mere six years after reaching 70% in the developed world. Today mobile phone penetration in the developing world stands at 79%. People in emerging countries know how to use advanced technologies, and they are hungry for new equipment that enable improvements in their quality of life.

2. Change business metrics: Companies should not expect high unit profit margins in BOP markets. Rather, the potential of the BOP lies in volume. Margin per unit might be low, but the exceptionally large buying population creates greater capital efficiencies than those found in developed markets. Therefore, companies targeting the BOP should focus on the unit price that enables as many people as possible to buy the particular product or service.

This requires a change in the way business leaders approach pricing. In developed countries, companies typically use a cost-led pricing process, where the price of a good is determined by production costs and an anticipated profit margin. But in BOP markets, price-led costing—which begins with a determination of what customers are willing to pay for a future offering—is more

efficient. This different pricing strategy drives innovation. Companies must be creative and resourceful in coming up with affordable products and services for the BOP population that also generate an acceptable profit.³

Even with these lessons in mind, how ought firms develop profitable products and services that meet the needs and aspirations of this population? The next section discusses how companies—from large multinational corporations (MNCs) to small start-ups and social entrepreneurship ventures—are creating high quality, affordable products using a new approach to innovation.

Frugal Innovation

Frugal innovation is a business model characterized by the use of limited resources to create low-cost products—from \$35 tablet computers to \$3,000 cars—that are sustainable for the environment and individual communities. Perhaps the most important characteristic of this business model⁴ is that it challenges the established innovation process. In developed countries, companies use highly structured and costly R&D to create new products. To meet the price restrictions of developing markets, companies typically downsize those products with cheaper—and often flimsier—materials.

Frugal innovation begins in developing countries by asking the question: how can we do more with less while serving the basic needs of the BOP population? The results are often good quality, functional products that are reasonably priced even to customers of modest means.

Successful frugal innovation requires an environment that inspires new ways of thinking. To cultivate such a setting, leaders must: one, understand the fundamental needs of the BOP population; two, create an entrepreneurial eco-system that involves partnerships with other companies, the public sector, and non-governmental

Where	Emerging Markets	Developed Markets
Starting line	What do they need	What would be great to have
Product	Functionality—rugged lightweight, adaptable, simple ⁵	Desirability and design
Process	Bottom-up	Top-down

organizations (NGOs); and three, nurture a so-called “innovation sandbox” that encourages new ideas.

1. Evaluate the needs and values of the masses:

Frugal innovation starts with a thorough assessment of the needs, values, and aspirations of the BOP population. Empirical field research is essential. Companies must form relationships with the local BOP population. They must also establish partnerships with NGOs and other organizations that have existing alliances with the community and a practical knowledge of the people.

2. Establish an entrepreneurial ecosystem:

In developed countries, it is often considered taboo for companies to work with competitors, NGOs, and the government. But in developing countries it is imperative. Working closely with NGOs and other community partners helps companies combine their own specialized knowledge with local knowledge to create the best and least expensive technologies, products, and services. This process of collaboration and co-creation establishes BOP consumers as joint problem-solvers.¹ It also helps the company gain a deeper understanding of the natural and human resources of the region, and figure out new and novel uses of these resources. Working with the government enables companies to influence laws and help them distribute their goods and services. Working for and with other firms established in the region helps companies make cost-efficient investments that result in products and services that are more suitable to the needs of the population. These alliances also lead to inspired joint ventures.

3. Create an ‘innovation sandbox’: At the start of any design process, business leaders identify the most important characteristics for their proposed product or service. In the context of the

BOP population, these specifications have a great number of financial and structural constraints. These include, for instance, the educational level and skills of the product’s potential purchasers. In BOP markets, the product design process is often referred to metaphorically as an innovation sandbox—a free-flowing experimentation (playing in the sand) within prescribed limitations (the walls of the sandbox).⁶ While product requirements vary according to the specific target market, researchers have identified four key characteristics for products targeted at the BOP:

a. Products should be scalable. In analyzing the scalability of a product, companies should consider not only its potential inside a given country, but also its potential in other countries with similar BOP markets. Without scalability, a product or service will not achieve the volume needed, and will not be profitable.

b. Products should provide a new price-performance ratio. The goal of the design process should be to find new ways to produce a better product or offer a service for a considerably lower price. This cannot be achieved by simply downsizing products made for other tiers of the economic pyramid.

c. Products should use hybrid and modern technologies. Designers must continually re-conceptualize, re-use, and re-combine current technologies to create new ones—a process known as cross-application.⁷ This is a proven way to create less expensive and higher quality products.

d. Products should achieve world standards of safety, quality, and sustainability. This allows for the extension of the market beyond the BOP population to the global market in economically, socially, and environmentally sustainable ways.

Frugal innovation is the optimal way for businesses to meet the needs of the large and potentially lucrative BOP market. The next section examines several companies in India that have successfully applied this new model of innovation to create superior goods and services with efficient production and delivery.

Frugal Innovation at Work in India: Case Studies

In India the phrase “frugal innovation” is often used interchangeably with the Hindi word “jugaad,” which originally referred to North Indian cars that were pieced together out of spare parts². For this reason, commentators often disparage jugaad as a “quick fix.” But the practice is at the heart of India’s entrepreneurial culture. Below are examples of firms in India that that are serving the BOP market using different forms of frugal innovation and entrepreneurship: human capital bricolage, life-cycle thinking, and scaling up in non-traditional ways.

Human Capital Bricolage: Human capital bricolage, which refers to the creative use of people, knowledge, skills, and capabilities,⁸ is a business model that helps companies overcome a lack of natural and human resources. This could include companies working as equals with outside partners, such as NGOs, governmental organizations, or even competitors. Perhaps the most striking examples of human capital bricolage are those that help elevate the country’s marginalized populations. Anudip Foundation, for instance, has created dozens of IT training centers to teach market-aligned job skills to unemployed youth.

Since its inception in 2006, the group has trained over 85,000 students. Ninety percent of graduates are placed, and more than a quarter of graduates find jobs at Anudip’s business process outsourcing centers (BPOs) in rural communities in India. The starting income of graduates



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is three times that of than non-Anudip counterparts. Anudip BPOs have a retention rate of about 2-4%, while the retention rate of other urban BPOs is around 30%. Partnering with local, rural communities to improve training methods has helped Anudip create a competitive advantage among its urban rivals and consequently benefit from a stronger labor pool.

Life-cycle thinking: Life-cycle thinking involves delivering innovative products that are sustainable beyond the consumer, through either re-use or recycling.⁹ For example, Bihar-based Husk Power Systems (HPS) has become a leader in renewable energy technology. The company has significantly reduced the use of kerosene power in rural housing by using rice husks—one of India’s most common waste products and perhaps the only bio-waste available to rural populations—to generate electricity. In August 2007, HPS lit its first village. Today it has installed 60 mini-power plants that power 25,000 households in more than 250 villages and hamlets. BPS’s technology impacts the lives of approximately 150,000 people in rural India. Most important, HPS employs more than 300 locals to run and manage its power plants, and has saved \$1.25 million for the households it serves.

Scaling up in non-traditional ways: The use of hybrid organizations or integrated structures—those that combine profit and non-profit arms—is essential to frugal entrepreneurship. Take the Jaju brothers, for example. In 2008, Vinay and Piyush Jaju left high-paying jobs to start a non-profit called Switch-on aimed at promoting environmental awareness in novel ways. They soon realized their venture would require an integrated renewable energy component. The following year they founded ONergy, a for-profit distributor of energy solutions, such as solar lights and smokeless cooktops. Today Switch-on’s non-profit arm trains rural entrepreneurs in energy efficiency and conservation, while ONergy’s for-profit arm provides the

necessary equipment and servicing. As of 2012, the two organizations have reached 30,000 people and produced \$140,000 in revenue.

Conclusion

The BOP population holds great potential for companies seeking new growth and economic efficiency. To reach the market, company leaders must develop a firm understanding of people in the developing world and also adjust pre-existing business metrics. They must implement the strategies of frugal innovation with new approaches to serve the needs of the BOP population. In doing so, companies not only improve the BOP living conditions, but also create a new source of growth, cost-saving opportunities, and access to innovation.¹⁰ While frugal innovation represents a departure from traditional ways of doing business, there is much promise in this alternative, complementary model.

NOTES

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