PART I

The Fortune at the Bottom of the Pyramid

Chapter 1  •  The Market at the Bottom of the Pyramid
Chapter 2  •  Products and Services for the BOP
Chapter 3  •  BOP: A Global Opportunity?
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The objective of this section is to build a framework for poverty alleviation. We start with a simple proposition. If we stop thinking of the poor as victims or as a burden and start recognizing them as resilient and creative entrepreneurs and value-conscious consumers, a whole new world of opportunity will open up. Four billion poor can be the engine of the next round of global trade and prosperity. It can be a source of innovations. Serving the BOP consumers will demand innovations in technology, products and services, and business models. More importantly, it will require large firms to work collaboratively with civil society organizations and local governments.
Market development at the BOP will also create millions of new entrepreneurs at the grass roots level—from women working as distributors and entrepreneurs to village-level micro enterprises. These micro enterprises will be an integral part of the market-based ecosystem. It will require organizational and governance innovations as well.

The vision that is presented in the following pages is the co-creation of a solution to the problem of poverty. The opportunities at the BOP cannot be unlocked if large and small firms, governments, civil society organizations, development agencies, and the poor themselves do not work together with a shared agenda. Entrepreneurship on a massive scale is the key. This approach will challenge the prejudices about the “role and value added” of each group and its role in the economic development at the BOP.

In these chapters the reader will find the opportunities for co-creation among the various players. More importantly, the poor themselves are willing to experiment, learn, and change. While we will focus on the role of the private sector, the importance of collaboration across the various groups will become obvious. The interconnectedness of the approach to economic development and social transformation as visualized below will become obvious.

Part I outlines how that can be accomplished by isolating principles from successful, large-scale experiments involving the entire private sector ecosystem. Most of the examples of successful experimentation are taken from the case studies included in Part II of the book. The bottom line is simple: It is possible to “do well by doing good.”

Turn on your television and you will see calls for money to help the world’s 4 billion poor—people who live on far less than $2 a day. In fact, the cry is so constant and the need so chronic that the tendency for many people is to tune out these images as well as the message. Even those who do hear and heed the cry are limited in what they can accomplish. For more than 50 years, the World Bank, donor nations, various aid agencies, national governments, and, lately, civil society organizations have all fought the good fight, but have not eradicated poverty. The adoption of the Millennium Development Goals (MDG) by the United Nations only underscores that reality; as we enter the 21st century, poverty—and the disenfranchisement that accompanies it—remains one of the world’s most daunting problems.

The purpose of this book is to change that familiar image on TV. It is to illustrate that the typical pictures of poverty mask the fact that the very poor represent resilient entrepreneurs and value-conscious consumers. What is needed is a better approach to help the poor, an approach that involves partnering with them to innovate and achieve sustainable win–win scenarios where the poor are actively engaged and, at the same time, the companies providing products
As you turn these pages, you will discover companies fighting disease with educational campaigns and innovative products. There are organizations helping the handicapped walk and helping subsistence farmers check commodity prices and connect with the rest of the world. There are banks adapting to the financial needs of the poor, power companies reaching out to meet energy needs, and construction companies doing what they can to house the poor in affordable ways that allow for pride. There are chains of stores tailored to understand the needs of the poor and to make products available to them.

The strength of these innovative approaches, as you will come to appreciate, is that they tend to create opportunities for the poor by offering them choices and encouraging self-esteem. Entrepreneurial solutions such as these place a minimal financial burden on the developing countries in which they occur.

To begin to understand how all of this is remotely possible, we need to start with some basic assumptions:

- First, while cases certainly can be found of large firms and multinational corporations (MNCs) that may have undermined the efforts of the poor to build their livelihoods, the greatest harm they might have done to the poor is to ignore them altogether. The poor cannot participate in the benefits of globalization without an active engagement and without access to products and services that represent global quality standards. They need to be exposed to the range and variety of opportunities that inclusive globalization can provide. The poor represent a “latent market” for goods and services. Active engagement of private enterprises at the BOP is a critical element in creating inclusive capitalism, as private-sector competition for this market will foster attention to the poor as consumers. It will create choices for them. They do not have to depend only on what is available in their villages. If large firms approach this market with the BOP consumers’ interests at heart, it can also lead to significant growth and profits for them. These characteristics of a market economy, new to the BOP, can facilitate dramatic change at the BOP. Free and transparent private-sector competition, unlike local village and shanty-town monopolies controlled by local slum lords, can transform the “poor” into consumers (as we illustrate with examples). Poverty alleviation will become a business development task shared among the large private sector firms and local BOP entrepreneurs.
Second, the BOP, as a market, provides a new growth opportunity for the private sector and a forum for innovations. Old and tired solutions cannot create markets at the BOP.

Third, BOP markets must become an integral part of the work of the private sector. They must become part of the firms' core businesses; they cannot merely be relegated to the realm of corporate social responsibility (CSR) initiatives. Successfully creating BOP markets involves change in the functioning of MNCs as much as it changes the functioning of developing countries. BOP markets must become integral to the success of the firm in order to command senior management attention and sustained resource allocation.

There is significant untapped opportunity for value creation (for BOP consumers, shareholders, and employees) that is latent in the BOP market. These markets have remained “invisible” for too long.

It is natural for you to ask this: If all of this is so obvious, why has this not yet occurred?

The Power of Dominant Logic

All of us are prisoners of our own socialization. The lenses through which we perceive the world are colored by our own ideology, experiences, and established management practices. Each one of the groups that is focusing on poverty alleviation—the World Bank, rich countries providing aid, charitable organizations, national governments, and the private sector—is conditioned by its own dominant logic. Let us, for example, examine the dominant logic of each group as it approaches the task of eradicating poverty.

Consider, for instance, the politicians and bureaucrats in India, one of the largest countries with a significant portion of the world’s poor. India is home to more than 400 million people who qualify as being very poor. The policies of the government for the first 45 years since independence from Great Britain in 1947 were based on a set of basic assumptions. Independent India started with a deep suspicion of the private sector. The country’s interaction with the East India Company and colonialism played a major part in creating this mindset. The experience with the indigenous private sector was not very positive, either. The private sector was deemed exploitative of the poor. This suspicion was coupled with an enormous confidence in the government machinery to do what is “right and moral.” For example, the government of India initiated a series of large industrial projects in the public sector (owned by the Indian government) in a wide variety of industries, from steel to food distribution and global trading in essential commodities. India’s general suspicion of the private sector led controls over its size and expansion. Some sectors of economic activity were reserved for small-scale industries. In textiles, for example, the “hand loom sector” dominated by small firms was given preference. There was no credible voice in public policy for nurturing market-based ecosystems that included the large and the small in a symbiotic relationship. The thinking was cleanly divided among the public sector (mostly large firms with significant capital outlay as in steel), the private sector with large firms strictly controlled by the government through a system of licenses, and a small-scale sector. The focus of public policy was on distributive justice over wealth creation. Because of the disparities in wealth and the preponderance of the poor, the government thought its first priority must be policies that “equalized” wealth distribution. Taxation, limits on salaries of top managers, and other such measures were instituted to ensure distributive justice. The discussion further polarized around the somewhat contrived concepts of rural poor and urban rich. The assumption was that the rural population was primarily poor and the urban population was relatively rich. However, the data increasingly does not support this distinction. There are as many rural rich as there are urban poor. Poverty knows no such boundaries. In the developing world, more than one third of the urban population lives in shanty towns and slums. These traditional views reflect the philosophy behind actions taken by bureaucrats and politicians. During the last decade, a slow but discernable transition has been taking place from the traditional to a more market-based outlook.

This much-needed and desirable transition is in its infancy. The dominant logic, built over 45 years, is difficult to give up for individuals, political parties, and sections of the bureaucracy. This is the reason why politicians and bureaucrats appear to be vacillating in their positions. Most thinking people know where they have to go, but letting go of their beliefs and abandoning their “zones of comfort” and familiarity are not easy. We also believe that it is equally difficult for a whole generation of BOP consumers to give up their dependence on governmental subsidies.
We have explicitly focused on ideology and policy and not on the quality of implementation of projects focused on the poor, be it building roads and dams or providing basic education and health care. The distinct role of corruption, which seems so endemic to developing countries in general, deserves separate treatment (see Chapter 5).

Private-sector businesses, especially MNCs (and large local firms that emulate their MNC competitors), also suffer from a deeply etched dominant logic of their own, which restricts their ability to see a vibrant market opportunity at the BOP. For example, it is common in MNCs to have the assumptions outlined in Table 1.1. These assumptions dictate decision and resource allocation processes for developing countries and BOP markets in particular.

These and other implicit assumptions surface in every discussion of BOP markets with managers in MNCs and those in large domestic firms in developing countries that fashion their management practices after those at successful MNCs. These biases are hard to eradicate in large firms. Although the dominant logic and its implications are clear, it is our goal in this book to challenge and provide counterpoints. For example, BOP markets enable firms to challenge their perspectives on cost. We will show that a 10 to 200 times advantage (compared to the cost structures that are oriented to the top of the pyramid markets) is possible if firms innovate from the BOP up and do not follow the traditional practice of serving the BOP markets by making minor changes to the products created for the top of the pyramid.

Most charitable organizations also believe that the private sector is greedy and uncaring and that corporations cannot be trusted with the problems of poverty alleviation. From this perspective, profit motive and poverty alleviation do not mix easily or well. Aid agencies have come full circle in their own thinking. From aid focused on large infrastructure projects and public spending on education and health, they are also moving toward a belief that private-sector involvement is a crucial ingredient to poverty alleviation.

Historically, governments, aid agencies, nongovernmental organizations (NGOs), large firms, and the organized (formal and legal as opposed to extralegal) business sector all seem to have reached an implicit agreement: Market-based solutions cannot lead to poverty reduction and economic development. As shown in Figure 1.2, the dominant logic of each group restricts its ability to see the market opportunities at the BOP. The dominant logic of each group is different, but the conclusions are similar. During the last decade, each group has been searching for ways out of this self-imposed intellectual trap. To

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Table 1.1 The Dominant Logic of MNCs as It Relates to BOP

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>The poor are not our target customers; they cannot afford our products or</td>
<td>Our cost structure is a given; with our cost</td>
</tr>
<tr>
<td>services.</td>
<td>structure, we cannot serve the BOP market.</td>
</tr>
<tr>
<td>The poor do not have use for products sold in developed countries.</td>
<td>We are committed to a form over functionality. The poor might need</td>
</tr>
<tr>
<td></td>
<td>sanitation, but can’t afford detergents in formats we offer. Therefore,</td>
</tr>
<tr>
<td></td>
<td>there is no market in the BOP.</td>
</tr>
<tr>
<td>Only developed countries appreciate and pay for technological innovations.</td>
<td>The BOP does not need advanced technology solutions; they will not pay for</td>
</tr>
<tr>
<td></td>
<td>them. Therefore, the BOP cannot be a source of innovations.</td>
</tr>
<tr>
<td>The BOP market is not critical for long-term growth and vitality of MNCs.</td>
<td>BOP markets are at best an attractive distraction.</td>
</tr>
<tr>
<td>Intellectual excitement is in developed markets; it is very hard to recruit</td>
<td>We cannot assign our best people to work on market development in BOP</td>
</tr>
<tr>
<td>managers for BOP markets.</td>
<td>markets.</td>
</tr>
</tbody>
</table>


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Figure 1.2 The influence of dominant logic.
eradicate poverty, we have to break this implicit compact through a BOP-oriented involvement of the private sector.

We have to change our long-held beliefs about the BOP—our genetic code, if you will. The barrier that each group has to cross is different, but difficult nonetheless. However, once we cross the intellectual barrier, the opportunities become obvious. The BOP market also represents a major engine of growth and global trade, as we illustrate in our subsequent stories of MNCs and private firms from around the world.

The Nature of the BOP Market

The nature of the BOP market has characteristics that are distinct. We outline some of the critical dimensions that define this market. These characteristics must be incorporated into our thinking as we approach the BOP.

There Is Money at the BOP

The dominant assumption is that the poor have no purchasing power and therefore do not represent a viable market.

Let us start with the aggregate purchasing power in developing countries where most of the BOP market exists. Developing countries offer tremendous growth opportunities. Within these markets, the BOP represents a major opportunity. Take China as an example. With a population of 1.2 billion and an average per capita gross domestic product (GDP) of US $1,000, China currently represents a $1.2 trillion economy. However, the U.S. dollar equivalent is not a good measure of the demand for goods and services produced and consumed in China. If we convert the GDP-based figure into its dollar purchasing power parity (PPP), China is already a $5.0 trillion economy, making it the second largest economy behind the United States in PPP terms. Similarly, the Indian economy is worth about $3.0 trillion in PPP terms. If we take nine countries—China, India, Brazil, Mexico, Russia, Indonesia, Turkey, South Africa, and Thailand—collectively they are home to about 3 billion people, representing 70 percent of the developing world population. In PPP terms, this group's GDP is $12.5 trillion, which represents 90 percent of the developing world. It is larger than the GDP of Japan, Germany, France, the United Kingdom, and Italy combined. This is not a market to be ignored.

Now consider the BOP within the broad developing country opportunity. The dominant assumption is that the poor do not have money to spend and, therefore, are not a viable market. Certainly, the buying power for those earning less than US $2 per day cannot be compared with the purchasing power of individuals in the developed nations. However, by virtue of their numbers, the poor represent a significant latent purchasing power that must be unlocked. For example, all too often, the poor tend to reside in high-cost ecosystems even within developing countries. In the shanty town of Dharavi, outside Mumbai, India, the poor pay a premium for everything from rice to credit. Compare the cost of everyday items of consumption between Dharavi and Warden Road (now redesignated B. Desai Road), a higher-income neighborhood in Mumbai. The poverty penalty in Dharavi can be as high as 5 to 25 times what the rich pay for the same services (Table 1.2).

Research indicates that this poverty penalty is universal, although the magnitude differs by country. The poverty penalty is the result of local monopolies, inadequate access, poor distribution, and strong traditional intermediaries. Large-scale private-sector businesses can unlock this penalty for example, the poor in Dharavi pay $0.06 to 1,000 percent interest on credit from local moneylenders. A bank with access to this market can do well for itself by offering credit at 25 percent. Although 25 percent interest might look excessive to a casual observer, from the point of view of the BOP consumer, access to a bank decreases the cost of credit from 600 percent to 25 percent. The BOP consumer is

<table>
<thead>
<tr>
<th>Item</th>
<th>Dharavi</th>
<th>Warden Road</th>
<th>Poverty Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit (annual interest)</td>
<td>600–1,000%</td>
<td>12–18%</td>
<td>53.0</td>
</tr>
<tr>
<td>Municipal grade water</td>
<td>$1.12</td>
<td>$0.05</td>
<td>37.0</td>
</tr>
<tr>
<td>(per cubic meter)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone call (per minute)</td>
<td>$0.04–0.05</td>
<td>$0.025</td>
<td>1.8</td>
</tr>
<tr>
<td>Diarrhea medication (per kg)</td>
<td>$20.00</td>
<td>$2.00</td>
<td>10.0</td>
</tr>
<tr>
<td>Rice (per kg)</td>
<td>$0.28</td>
<td>$0.24</td>
<td>1.2</td>
</tr>
</tbody>
</table>

focused on the difference between the local moneylender rates and the rates that a commercial bank would charge. The bank can make a reasonable profit after adjusting for risk (10 percent over its traditional, top-of-the-pyramid customers). We argue later that the BOP consumers do not represent higher risk.

These cost disparities between BOP consumers and the rich in the same economy can be explained only by the fact that the poverty penalty at the BOP is a result of inefficiencies in access to distribution and the role of the local intermediaries. These problems can easily be cured if the organized private sector decides to serve the BOP. The organized sector brings with it the scale, scope of operations, and management know-how that can lead to efficiencies for itself and its potential consumers.

The poor also spend their earnings in ways that reflect a different set of priorities. For example, they might not spend disposable income on sanitation, clean running water, and better homes, but will spend it on items traditionally considered luxuries. Without legal title to land, these residents are unlikely to invest in improving their living quarters, much less the public facilities surrounding their homes. For example, in Dharavi, 85 percent of the households own a television set, 75 percent own a pressure cooker and blender, 56 percent own a gas stove, and 21 percent have telephones. In Bangladesh, women entrepreneurs with cell phones, which they rent out by the minute to other villagers, do a brisk business. It is estimated that the poor in Bangladesh spend as much as 7 percent of their income on connectivity.

Access to BOP Markets

The dominant assumption is that distribution access to the BOP markets is very difficult and therefore represents a major impediment for the participation of large firms and MNCs.

Urban areas have become a magnet for the poor. By 2015 there will be more than 225 cities in Africa, 903 in Asia, and 225 in Latin America. More than 368 cities in the developing world will have more than 1 million people in each. There will be at least 23 cities with more than 10 million residents. Collectively, these cities will account for about 1.5 to 2.0 billion people. Over 35 to 40 percent of these urban concentrations will be comprised of BOP consumers. The density of these settlements—about 15,000 people per hectare—will allow for intense distribution opportunities.

The rural poor represent a different problem. Access to distribution in rural markets continues to be problematic. Most of the rural markets are also inaccessible to audio and television signals and are often designated as “media dark.” Therefore, the rural poor are not only denied access to products and services, but also to knowledge about what is available and how to use it. The spread of wireless connectivity among the poor might help reduce this problem. The ability to download movie and audio clips on wireless devices might allow firms to access traditionally “media dark” areas and provide consumers in these locations with newfound access to information about products and services. However, this is still an evolving phenomenon restricted to a few countries.

The BOP does not lend itself to a single distribution solution. Urban concentrations represent a problem distinct from that of the distribution access to dispersed rural communities. Worldwide, the cost of reach per consumer can vary significantly across countries. A wide variety of experiments are underway in these markets to find efficient methods of distributing goods and services. One such experiment, Project Shakti at Hindustan Lever Ltd. (HLL) in India, is a case in point. HLL created a direct distribution network in hard-to-reach locales (markets without distribution coverage through traditional distributors and dealers). HLL selected entrepreneurial women from these villages and trained them to become distributors, providing education, advice, and access to products to their villages. These village women entrepreneurs, called Shakti Amma (“empowered mother”), have unique knowledge about what the village needs and which products are in demand. They earn between Rs. 5,000 and 7,000 per month (U.S. $60–$150) and therefore create a new capacity to consume for themselves and their families. More important, these entrepreneurial women are increasingly becoming the educators and access points for the rural BOP consumers in their communities. This approach is not new. Avon is one of the largest cosmetics operations in Brazil and has used a similar approach by leveraging more than 800,000 “Avon ladies” as distributors to reach even the most remote regions of Amazonia.

The BOP Markets Are Brand-Conscious

The dominant assumption is that the poor are not brand-conscious. On the contrary, the poor are very brand-conscious. They are also extremely value-conscious by necessity.
The experience of Casas Bahia in Brazil and Elektra in Mexico—two of the largest retailers of consumer durables, such as televisions, washing machines, radios, and other appliances—suggests that the BOP markets are very brand-conscious. Brand consciousness among the poor is universal. In a way, brand consciousness should not be a surprise. An aspiration to a new and different quality of life is the dream of everyone, including those at the BOP. Therefore, aspirational brands are critical for BOP consumers. However, BOP consumers are value buyers. They expect great quality at prices they can afford. The challenge to large firms is to make aspirational products affordable to BOP consumers. These consumers represent a new challenge for managers with increased pressure on costs of development, manufacturing, and distribution. As a result, BOP markets will force a new level of efficiency in the MNCs, as we demonstrate in Chapter 2.

**The BOP Market Is Connected**

*Contrary to the popular view, BOP consumers are getting connected and networked. They are rapidly exploiting the benefits of information networks.*

The spread of wireless devices among the poor is proof of a market at the BOP. For example, by the end of 2003, China had an installed base of 250 million cell phones. India had an installed base of approximately 30 million. The Indian market is growing at about 1.5 million handsets per month. The expectation is that India will reach 100 million handsets by 2005. Brazil already has 35 to 40 million. Both the current market size and the growth rates suggest that the BOP market is a critical factor in worldwide wireless growth. Telecommunications providers have made it easier for BOP consumers to purchase handsets and service through prepaid cards. The proliferation of wireless devices among the poor is universal, from Grameen Phone in Bangladesh to Telefonica in Brazil. Further, the availability of PCs in kiosks at a very low price per hour and the opportunity to videoconference using PCs are adding to the intensity of connectivity among those at the BOP. The net result is an unprecedented ability of BOP consumers to communicate with each other in several countries. The technology of wireless and PC connectivity is allowing the BOP population to be actively engaged in a dialogue with each other, with the firms from which they wish to purchase goods and services, and with the politicians who represent them.

Connectivity also allows the BOP consumers to establish new patterns of communication away from their villages. With cell phones and TV, the BOP consumer has unprecedented access to information as well as opportunities to engage in a dialogue with the larger community. As a result, word of mouth among BOP consumers is becoming a very potent force for assessing product quality, prices, and options available to them. The spread of good bargains as well as bad news can be very rapid. For example, in India, it appears that some consumers found worms in chocolates sold by Cadbury, a large and very successful MNC. Ten years ago this would have been a nonevent, but with access to multiple and fiercely competitive TV channels, wireless, and Internet, the news spread so rapidly across India that not just managers within Cadbury but all managers involved in the “fast-moving consumer goods” industry were surprised and worried.

**BOP Consumers Accept Advanced Technology Readily**

*Contrary to popular belief, the BOP consumers accept advanced technology readily.*

The spread of wireless devices, PC kiosks, and personal digital assistants (PDAs) at the BOP has surprised many a manager and researcher. For example, ITC, an Indian conglomerate, decided to connect Indian farmers with PCs in their villages. The ITC e-Choupal (literally, “village meeting place”) allowed the farmers to check prices not only in the local auction houses (called mandis), but also prices of soybean futures at the Chicago Board of Trade. The e-Choupal network allowed the farmers access to information that allowed them to make decisions about how much to sell and when, thus improving their margins. Similarly, women entrepreneurs in southern India, given a PC kiosk in their villages, have learned to videoconference among themselves, across villages on all kinds of issues, from the cost of loans from various banks to the lives of their grandchildren in the United States. Chat rooms are full of activity that none of us could have imagined. Most interestingly, in Kerala, India, fishermen in traditional fishing boats, after a day of productive work, sell their catch to the highest bidders, using their cell phones to contact multiple possible landing sites along the Kerala coast. The simple boats, called catamarans, have not changed, but the entire process of pricing the catch and knowing how to sell based on reliable information has totally
changed lives at the BOP. The BOP consumers are more willing to adopt new technologies because they have nothing to forget. Moving to wireless from nothing is easier than moving to wireless from a strong tradition of efficient and ubiquitous landlines.

**The Market Development Imperative**

The task of converting the poor into consumers is one of market development. Market development involves both the consumer and the private-sector firm. We consider the risks and benefits to the private-sector firm later. Here, we reflect on the incentives for the BOP consumer, who is so far isolated from the benefits of access to regional and global markets, to participate. What are the benefits to the BOP consumer? Our examples are drawn primarily from the stories that appear in the book.

**Create the Capacity to Consume**

To convert the BOP into a consumer market, we have to create the capacity to consume. Cash-poor and with a low level of income, the BOP consumer has to be accessed differently.

The traditional approach to creating the capacity to consume among the poor has been to provide the product or service free of charge. This has the feel of philanthropy. As mentioned previously, charity might feel good, but it rarely solves the problem in a scalable and sustainable fashion.

A rapidly evolving approach to encouraging consumption and choice at the BOP is to make unit packages that are small and, therefore, affordable. The logic is obvious. The rich use cash to inventory convenience. They can afford, for example, to buy a large bottle of shampoo to avoid multiple trips to the store. The poor have unpredictable income streams. Many subsist on daily wages and have to use cash conservatively. They tend to make purchases only when they have cash and buy only what they need for that day. Single-serve packaging — be it shampoo, ketchup, tea and coffee, or aspirin — is well suited to this population. A single-serve revolution is sweeping through the BOP markets. For example, in India, single-serve sachets have become the norm for a wide variety of products, as shown in Table 1.3.

The number of products sold in the single-serve format is rapidly increasing. The format is so popular that even firms producing high-end merchandise have to adopt it to remain viable long-term players in the growing markets. For example, in the shampoo business, the situation in the Indian market is shown in Figure 1.3.

Measured in tons, the size of the Indian shampoo market is as large as the U.S. market. Large MNCs, such as Unilever and Procter & Gamble (P&G), are major participants in this market, as are large local firms. Because the poor are just as brand-conscious as the rich, it is possible to buy Pantene, a high-end shampoo from P&G, in a single-serve sachet in India. The entrepreneurial private sector has created a large market at the BOP; the penetration of shampoo in India is about 90 percent.

A similar approach to creating capacity to consume is through innovative purchase schemes. More BOP consumers in Brazil are able to buy appliances through Casas Bahia because the firm provides credit even for consumers with low and unpredictable income streams. Through a very sophisticated credit rating system coupled with counseling, Casas Bahia is able to provide access to high-quality appliances to consumers who could not otherwise afford them. At the same time, the firm ensures that its consumers are not overstretched. The default rate is very low at 8.5 percent, compared to over 15 percent for competitor firms. Casas Bahia has also created a new pool of repeat customers. Cemex, one of the world’s largest cement companies in Mexico, follows a similar approach in its “do-it-yourself” business focused on the BOP market. The idea is to help the consumers learn to save and invest. By creating a pool of three women who save as a group and discipline and pressure each other to stay with the scheme, Cemex facilitates the process of consumption by bundling savings and access to credit with the ability to add a bathroom or a kitchen to their homes.

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**Table 1.3 Creating the Capacity to Consume: Single-Serve Revolution**

<table>
<thead>
<tr>
<th>Single-Serve Value at Retail</th>
<th>Typical Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs.</td>
<td>$</td>
</tr>
<tr>
<td>0.50</td>
<td>0.01</td>
</tr>
<tr>
<td>1.00</td>
<td>0.02</td>
</tr>
<tr>
<td>2.00</td>
<td>0.04</td>
</tr>
<tr>
<td>5.00</td>
<td>0.10</td>
</tr>
</tbody>
</table>

*Note: Shampoo and biscuits are shown under different price ranges because these items are available in multiple single-serve and low unit pack quantities.*
Creating the capacity to consume is based on three simple principles best described as the “Three A’s”:

1. Affordability. Whether it is a single-serve package or novel purchasing schemes, the key is affordability without sacrificing quality or efficacy.

2. Access. Distribution patterns for products and services must take into account where the poor live as well as their work patterns. Most BOP consumers must work the full day before they can have enough cash to purchase the necessities for that day. Stores that close at 5:00 PM have no relevance to them, as their shopping begins after 7:00 PM. Further, BOP consumers cannot travel great distances. Stores must be easy to reach, often within a short walk. This calls for geographical intensity of distribution.

3. Availability. Often, the decision to buy for BOP consumers is based on the cash they have on hand at a given point in time. They cannot defer buying decisions. Availability (and therefore, distribution efficiency) is a critical factor in serving the BOP consumer.

Of course, the ideal is to create the capacity to earn more so that the BOP consumers can afford to consume more. The ITC e-Choupal story illustrates how farmers with access to the Internet and thereby access to the prices of commodities around the world can increase their incomes by 5 to 10 percent. These farmers can decide when and how much to sell based on their understanding of the likely price movements for their products. Modern technology not only allows them to realize better prices, but also to improve their logistics. The aggregation of food grains allows for efficiencies for both the farmer and the buyer.

By focusing on the BOP consumers’ capacity to consume, private-sector businesses can create a new market. The critical requirement is the ability to invent ways that take into account the variability in the cash flows of BOP consumers that makes it difficult for them to access the traditional market for goods and services oriented toward the top of the pyramid.

The Need for New Goods and Services

The involvement of the private sector at the BOP can provide opportunities for the development of new products and services.

Amul, a dairy cooperative in India, has introduced good quality ice cream at less than $0.05 per serving, affordable by all at the BOP. This product is not only a source of enjoyment; the milk in it is also a source of nutrition for the poor. Now, Amul is planning to introduce a natural laxative-laced ice cream called “isabgol-enriched.” It is too early to tell whether the product can be a success. However, the experimentation is what the game is about. Similarly, the popularization of pizza by the same company allows the poor to obtain an adequate quantity of protein. PRODEM FFP, a Bolivian financial services company, has introduced smart automated teller machines (ATMs) that recognize fingerprints, use color-coded touch screens, and speak in three local languages. This technological innovation allows even illiterate BOP consumers to access, on a 24-hour basis, high-quality financial services. Cemex, as we saw earlier, provides access to good quality housing. Through Tecnosol, the BOP consumers in rural Nicaragua have access to clean energy from renewable sources—solar and wind power. Previously, these consumers did not have access to grid-based electricity and were dependent on more expensive sources, such as kerosene and batteries. Now they have energy that is affordable enough to run their households. Casas Bahia not only sells appliances, but has also introduced a line of good quality furniture oriented toward the BOP markets. Furniture has become one of the fastest growing businesses for the company as well as a source of pride and satisfaction to its consumers.
Dignity and Choice

When the poor are converted into consumers, they get more than access to products and services. They acquire the dignity of attention and choices from the private sector that were previously reserved for the middle-class and rich.

The farmers we interviewed at an ITC e-Choupal were very clear. The traditional auctioning system at the government-mandated markets (mandis) did not offer them any choices. Once they went to a mandi, they had to sell their produce at the prices offered on that day. They could not wait for better prices or haul their produce back to their villages. More important, the local merchants who controlled the mandi were not very respectful of the farmers. One farmer remarked, “They make rude comments about my produce. They also raise the prices in the auction by $0.02 per ton. It is as if they have already determined the price you will get and they go through the motions of an auction. It used to be very demeaning.” Not any longer. Now, the same farmers can access information on the Web across all the mandis and can decide where, when, and at which prices they want to sell. Similarly, women in self-help groups (SHGs) working with ICICI Bank in India also have had their dignity restored. As a group, they decide which borrowers and projects will receive loans. This involvement of women in leadership development and in learning about finances and bank operations has given them a new sense of personal worth. The single-serve revolution has created a revolutionary level of choice for consumers at the BOP. For example, the “switching costs” for the consumer are negligible because she can buy a sachet of shampoo or detergent or pickles; if she is not satisfied with her purchase she can switch brands the next day. Firms must continuously innovate and upgrade their products to keep customers interested in their brands, thereby improving quality and reducing costs.

Trust Is a Prerequisite

Both sides—the large firms and the BOP consumers—have traditionally not trusted each other. The mistrust runs deep. However, private-sector firms approaching the BOP market must focus on building trust between themselves and the consumers.

This is clearly evident when one visits a Casas Bahia store. BOP consumers here venerate the founder, Mr. Klein, for giving them the opportunity to possess appliances that they could not otherwise afford.

Although the shanty towns of Sao Paulo or Rio de Janeiro can be dangerous to outsiders, Casas Bahia trucks move freely around without worry. The same is true for Bimbo, the provider of fresh bread and other bakery products to the BOP consumers in Mexico. Bimbo7 is the largest bakery in Mexico and its trucks have become symbols of trust between the BOP consumers and the firm. The truck drivers are so trusted that often the small store owners in the slums allow them to open their shops, stock them with bread, and collect cash from the cash boxes without supervision. Both Casas Bahia and Bimbo believe that the truck drivers who deliver their products to the BOP consumers are their ambassadors and neither company will outsource the delivery process. In fact, all managers at Bimbo must work as truck drivers for the company to become better educated about their customers.

MNCs often assume that the default rate among the poor is likely to be higher than that of their rich customers. The opposite is often true. The poor pay on time and default rates are very low. In the case of ICICI Bank, out of a customer base of 200,000, the default rate is less than 1 percent. The default rate at Grameen Bank, a microfinance pioneer in Bangladesh, is less than 1.5 percent among 2,500,000 customers. The lessons are clear. Through persistent effort and the provision of world-class quality, private-sector businesses can create mutual trust and responsibility between their companies and BOP customers. Trust is difficult to build after 50 years of suspicion and prejudice based on little evidence and strong stereotyping.

Benefits to the Private Sector

We have identified the immediate benefits of treating the poor as consumers as well as the poverty alleviation process that will result as businesses focus on the BOP. It is clear that the consumers (the poor) benefit, but do the private-sector businesses benefit as well? The BOP market potential is huge: 4 to 5 billion underserved people and an economy of more than $13 trillion PPP. The needs of the poor are many. The case for growth opportunity in the BOP markets is easy to make. However, to participate in these markets, the private sector must learn to innovate. Traditional products, services, and management processes will not work. In the next chapter, we discuss a philosophy of innovation focused on BOP markets.
Endnotes

7. www.bnmbo.com

As we saw in the previous chapter, the BOP can be a viable growth market. During the last decade, many MNCs have approached BOP markets with an existing portfolio of products and services. Because these product portfolios have been priced and developed for Western markets, they are often out of reach for potential customers in BOP markets. More important, the feature-function set has often been inappropriate. As a result, the promise of the emerging BOP markets has been largely illusory. At the same time, developmental agencies have also tried to replicate developed country models at the BOP with equally unsatisfactory results. The development assistance community has invested billions in Western mechanical water treatment facilities in the developing world. Many if not most of these facilities were no longer operating within a year of their completion because the local "markets" could not afford the electricity to operate them, did not have a steady electricity supply, or lacked an adequate supply of chemicals and spare parts.
MNCs do recognize that only 5 to 10 percent of the population of China or India can represent a new market of 50 to 100 million each. MNCs can more easily tap into the top of the economic pyramid in emerging economies such as China, India, or Brazil and these markets can be substantial. Although the affluent in these markets might appear to be similar to “traditional” consumers in developed countries, they are not. They tend to be much more value-conscious. Regardless, the goal is to reach the entire population base, including the BOP. How can MNCs capitalize on this emerging BOP opportunity?

A Philosophy for Developing Products and Services for the BOP

The BOP, as a market, will challenge the dominant logic of MNC managers (the beliefs and values that managers serving the developed markets have been socialized with). For example, the basic economics of the BOP market are based on small unit packages, low margin per unit, high volume, and high return on capital employed. This is different from large unit packs, high margin per unit, high volume, and reasonable return on capital employed. This shift in business economics is the first surprise to most managers. As we observed in Chapter 1, creating the capacity to consume—the single-serve and low unit pack revolution at the BOP—can be the first surprise for product developers trained in the West. “How can anyone make money at $0.01/unit price at retail?” is often the question. Similarly, in the West, product developers often assume that the required infrastructures for the use of products exist or that Western infrastructure can be made economically viable and will function properly in these markets. In a developed market, access to refrigerators, telephones, transportation, credit, and a minimum level of literacy can all be assumed. The choice of technologies is not constrained by the infrastructure. However, in BOP markets, the quality of infrastructure can vary substantially, especially within a country as vast as China, Brazil, or India. What is available in Shanghai or Mumbai is not an indication of the infrastructure in the hinterlands of China or India. For example, the supply of electricity can be quite erratic and blackouts and brownouts are very common. Advanced technology solutions, such as a regional network of PCs, must coexist with poor and indifferent electrical and telecom infrastructures. Hybrid solutions that integrate backup power sources with PCs are a must, as are customer interfaces. For example, India boasts more than 15 official languages and 500 dialects, and 30 percent of the total population is illiterate. How then can we develop user-friendly interfaces for products that the poor and the illiterate can understand and utilize? Surprisingly, illiteracy can lead to acceptance of the state-of-the-art solutions. For example, illiterate consumers can “see and hear,” not read. Therefore, video-enabled cell phones might be more appropriate for this market.

These challenges are not isolated conditions. Involvement in BOP markets will challenge assumptions that managers in MNCs have developed over a long period of time. A new philosophy of product development and innovation that reflects the realities of BOP markets will be needed. This philosophy must represent a different perspective from those that we have grown accustomed to in serving Western markets.

Based on my research, I have identified 12 principles that, taken together, constitute the building blocks of a philosophy of innovation for BOP markets. In this chapter, we discuss each of these principles with specific illustrations drawn primarily from the detailed case stories of successful innovations at the BOP included in this book.

Twelve Principles of Innovation for BOP Markets

1. Focus on price performance of products and services. Serving BOP markets is not just about lower prices. It is about creating a new price–performance envelope. Quantum jumps in price performance are required to cater to BOP markets.

2. Innovation requires hybrid solutions. BOP consumer problems cannot be solved with old technologies. Most scalable, price-performance-enhancing solutions need advanced and emerging technologies that are creatively blended with the existing and rapidly evolving infrastructures.

3. As BOP markets are large, solutions that are developed must be scalable and transportable across countries, cultures, and languages. How does one take a solution from the southern part of India to the northern part? From Brazil to India or China? Solutions must be designed for ease of adaptation in similar BOP markets. This is a key consideration for gaining scale.
4. The developed markets are accustomed to resource wastage. For example, if the BOP consumers started using as much packaging per capita as the typical American or Japanese consumer, the world could not sustain that level of resource use. All innovations must focus on conserving resources: eliminate, reduce, and recycle. Reducing resource intensity must be a critical principle in product development, be it for detergents or ice cream.

5. Product development must start from a deep understanding of functionality, not just form. Marginal changes to products developed for rich customers in the United States, Europe, or Japan will not do. The infrastructure BOP consumers have to live and work in demands a rethinking of the functionality anew. Washing clothes in an outdoor moving stream is different from washing clothes in the controlled conditions of a washing machine that adjusts itself to the level of dirt and for batches of colored and white clothes.

6. Process innovations are just as critical in BOP markets as product innovations. In developed markets, the logistics system for accessing potential consumers, selling to them, and servicing products is well-developed. A reliable infrastructure exists and only minor changes might have to be made for specific products. In BOP markets, the presence of a logistics infrastructure cannot be assumed. Often, innovation must focus on building a logistics infrastructure, including manufacturing that is sensitive to the prevailing conditions. Accessing potential consumers and educating them can also be a daunting task to the uninitiated.

7. Deskilling work is critical. Most BOP markets are poor in skills. The design of products and services must take into account the skill levels, poor infrastructure, and difficulty of access for service in remote areas.

8. Education of customers on product usage is key. Innovations in educating a semiliterate group on the use of new products can pose interesting challenges. Further, most of the BOP also live in “media dark” zones, meaning they do not have access to radio or TV. In the absence of traditional approaches to education—traditional advertising—new and creative approaches, such as video mounted on trucks and traveling low-cost theatrical productions whose job it is to demonstrate product usage in villages, must be developed.

9. Products must work in hostile environments. It is not just noise, dust, unsanitary conditions, and abuse that products must endure. Products must also be developed to accommodate the low quality of the infrastructure, such as electricity (e.g., wide fluctuations in voltage, blackouts, and brownouts) and water (e.g., particulate, bacterial, and viral pollution).

10. Research on interfaces is critical given the nature of the consumer population. The heterogeneity of the consumer base in terms of language, culture, skill level, and prior familiarity with the function or feature is a challenge to the innovation team.

11. Innovations must reach the consumer. Both the highly dispersed rural market and a highly dense urban market at the BOP represent an opportunity to innovate in methods of distribution. Designing methods for accessing the poor at low cost is critical.

12. Paradoxically, the feature and function evolution in BOP markets can be very rapid. Product developers must focus on the broad architecture of the system—the platform—so that new features can be easily incorporated. BOP markets allow (and force) us to challenge existing paradigms. For example, challenging the grid-based supply of electricity as the only available source for providing good-quality, inexpensive energy is possible and necessary in the isolated, poor BOP markets.

It might appear that the new philosophy of innovation for the BOP markets requires too many changes to the existing approach to innovation for developed markets. It does require significant adaptation, but all elements of innovation for the BOP described here might not apply to all businesses. Managers need to pick and choose and prioritize. Although effective participation requires changes to the philosophy of innovation, I argue that the pain of change is worth the rewards that will be reaped from the BOP as well as from traditional markets. Further, once we recognize the issues involved, innovation can be quite an energizing experience. I also plan to illustrate with a large number of examples that a wide variety of organizations—MNCs, local firms, and NGOs—are successfully innovating with vigor in these markets, and are making a great difference in the quality of life of low-income customers and low-income communities. This is of particular importance to MNCs. Because innovations for the BOP markets challenge our established ways of thinking, BOP markets can become a source of innovations for the developed markets as well. Innovation in BOP markets can reverse the flow of concepts, ideas, and methods. Therefore, for an MNC
that aims to stay ahead of the curve, experimenting in BOP markets is increasingly critical. It is no longer an option.

Making It Happen

Let us begin with each of the principles involved in innovation for the BOP, identify the rationale for it, and analyze examples that illustrate what can be done to incorporate it.

1. Price Performance

Addressing the market opportunity at the BOP requires that we start with a radically new understanding of the price-performance relationship compared to that currently employed in developed markets. This is not about lowering prices. It is about altering the price-performance envelope.

Price is an important part of the basis for growth in BOP markets. GSM handsets used to be sold for $1,000 in India. Not surprisingly, the market was quite limited. As the average price dropped to $300, sales started to increase. However, when Reliance, a cell phone provider, introduced its “Monsoon Hungama” (literally Monsoon Melee) promotion that offered 100 free minutes for a mobile, multimedia phone with an up-front payment of $10 and monthly payments of $9.25, the company received 1 million applications in 10 days. Of course, price is a factor. Equally important is the performance associated with the price. The applications available through the Monsoon Hungama offer, for a mere $10 downpayment, are quite incredible, including news, games, audio clips of movies and favorite songs, video clips, astrology and numerology, city guides, TV guides, stock quotes, and the ability to surf the Internet. The phone itself is very fashionable and state of the art, using CDMA technology. Today, India is the fastest growing wireless market in the world. During the last quarter of 2003, India was adding 1.5 million new subscribers per month! Both GSM and CDMA technologies are readily available, as are a host of features and pricing options. The regulatory process is also rapidly evolving. This milieu can be confusing at best. However, most value-conscious consumers do not seem to be concerned. There are so many comparisons of the alternate technologies, features, and payment schemes that are debated in newspapers, on TV and radio, and in magazines, that consumers are well-informed. Even those who cannot read tend to consult with others who can. Word of mouth is so powerful that the consumers seem to have found an efficient process—combining analyses offered by journalists, companies, consumer reports, and their friends—for evaluating the price-performance options available to them.

How can we provide a high level of price-performance to a consumer population that exists on less than $2 per day? The changes in price-performance that are called for must be dramatic. Let me illustrate. Consider a cataract operation. It can cost as much as $2,500 to $3,000 in the United States. Even most of the poorest in the United States can get access to this surgery through health insurance (Medicare and Medicaid). In other developed countries such as the United Kingdom, the nationalized health services pay the cost. Now, consider the poor in India or Africa. For these mostly uninsured individuals to even consider cataract surgery, it would need to be priced around $50, a fraction of what it costs in developed markets (about 50 to 75 times less than in the United States), and the quality of surgery cannot be any less. Variation in quality in restoring eyesight is unacceptable. For a successful cataract operation in BOP markets, the quality of surgery must also include postoperative care of semiliterate patients in very unsanitary environments. Commitment to quality in BOP markets must be broad-based: identifying patients for surgery, most of whom have had limited medical care in the past, much less visits to the hospital; preparing them for the procedure; performing the operation; and postoperative care. The Aravind Eye Care System, the largest eye care facility in the world, is headquartered in Madurai, India. Doctors at Aravind perform more than 200,000 state-of-the-art cataract surgeries per year. Their price is $50 to $300 per surgery, including the hospital stay and any complications in surgery. However, over 60 percent of Aravind’s patients get their surgeries for free with no out-of-pocket payments by patients, insurance companies, government, and so on. With only 40 percent of paying patients at such seemingly low prices, Aravind is nevertheless very profitable. The cost of the surgery, for all the patients taken together (paying and free) is not more than $25 for a basic cataract operation with intra-ocular lens (IOL).

Similarly, access to financial services for the poor provides a challenge to conventional wisdom. Saving with a bank is a new idea for most people at the BOP. They have hardly any savings to begin with and whatever they have they wear it on them (as jewelry) or keep under their mattresses. Simple steps such as saving $1 per week and starting an account with as little as $20 can provide the impetus to cultivating the savings habit among the poor. Building the savings habit and giving
them access to the basic building blocks of financial services must precede providing them with access to low-cost loans or rain and crop insurance. How does a large global bank approach this market and provide world-class (if a limited range of) services starting with a $20 deposit? Citicorp started $25 deposit-based banking services, called Suvidha, in Bangalore, India. Suvidha was oriented toward the urban population and was entirely based on an ATM, networked, 24/7 model. In the first year, Citibank enrolled 150,000 customers. This was the first time a global bank approached consumers with a $25 deposit option. Now several Indian banks offer similar service, both branch-based and ATM-based, in both rural and urban areas.

BOP markets, be they in telecom, personal care, health care, or financial services, impose very interesting business design criteria. MNCs have to fundamentally rethink the price–performance relationship. Traditional approaches to reducing prices by 5 to 10 percent will not suffice. We should focus on an overall price–performance improvement of 30 to 100 times. This calls for a significant "forgetting curve" in the organization—an ability to discard traditional approaches to price–performance improvements. However, these efforts can be justified only if the markets are very large and global and the returns are more than commensurate with the risks. Although the margin per unit might be low, investor interest in BOP markets is based on expectations of a large-volume, low-risk, and high-return-on-capital employed business opportunity. BOP markets do represent an opportunity to create economic value in a fundamentally new way.

2. Innovation: Hybrids

The BOP market opportunity cannot be satisfied by watered-down versions of traditional technology solutions from the developed markets. The BOP market can and must be addressed by the most advanced technologies creatively combined with existing (and evolving) infrastructure.

More than 70 million Indian children suffer from iodine deficiency disorder (IDD), which can lead to mental retardation. A total of 200 million are at risk. IDD in many parts of Africa is equally daunting. The primary source of iodine for most Indians is salt. Indians do eat a lot of salt, but only 15 percent of the salt sold in India is iodized. Iodine is added by spraying salt with potassium iodate (KI03) or potassium iodine (KI) during manufacturing. Salt, to be effective as a carrier of iodine, must retain a minimum of 15 parts per million of iodine. Even iodized salt in India loses its iodine content during the harsh conditions of storage and transportation. Indian cooking habits account for further iodine loss. The challenge in India (and similar markets in Africa) is clear: How do we create iodized salt that will not lose its iodine content during storage, transportation, and cooking but will release iodine only on ingesting cooked food?

In an effort to address the immense iodine loss in Indian salt, HLL, a subsidiary of Unilever, recognized that chemicals can be protected by macro and molecular encapsulation. HLL first attempted macro encapsulation (similar to coating medicine with a covering). Although this process kept the iodine intact, it was difficult to guarantee the exact amount of iodine as the miniscule size of the salt crystals complicated the process. HLL thus decided to try molecular encapsulation. Called K15 (K for potassium, 15 ppm), the technology encapsulates iodate particles between inorganic layers, protecting iodine from harsh external conditions. The inorganic layers are designed to only interact with and dissolve in highly acidic environments (i.e., pH level of 1 to 2, as in the stomach). Here, iodine is released only upon ingesting food, only negligibly before that. The tests to validate this technology under the harsh conditions of Indian spices and cooking methods required that the researchers resort to techniques developed by the Indian Atomic Energy Agency, using radioactive tracers. The tracers did not alter the chemistry of the iodine but could detect it throughout the simulated cooking process. To be marketable, though, the iodized salt so developed must also retain its attractiveness (whiteness, texture) and, needless to say, must be priced comparable to iodized salt using the traditional methods (ineffective as a carrier of iodine) and noniodized salt. The technical breakthrough in applying molecular encapsulation of iodine in salt is now a patented process. Unilever is already leveraging this innovation from HLL to other countries such as Ghana, Ivoire Coast, and Kenya, where IDD is a problem.

The concept of hybrids appears in strange places. Consider that the dairy industry in India, Amul, is organized around 10,675 cooperatives from which it collects 6 million liters of milk. Amul collects milk from the farmers in villages by providing village collection centers with over 3,000 Automatic Milk Collection System Units (AMCUS)—an integrated milk-weighing, checking (for fat content), and payment system based on electronic weighing machines, milk analyzers, and a PC-based accounting and banking system for members. Amul makes 10 million transactions and payments in the neighborhood of Rs. 170
million. Payments can also be made instantaneously. This integrated electronic system sits in the middle of the traditional Indian village in the milk cooperatives. Many of the farmers feel that, for the first time, they have been treated “right” — the weighing and testing are honest, they are paid without delays, and they can now become part of the national milk network without leaving their villages.3

3. Scale of Operations

It is easy to succeed in a limited experiment, but the market needs of 4 to 5 billion people suggest that the experiments must be commercially scalable. NGOs and other socially concerned groups are by far the lead experimenters in BOP markets. For example, we can demonstrate that a combination of photovoltaic and wind-based energy systems can be built for less than $1,000, consistently deliver the necessary power, and be very acceptable as a single-family or village solution. However, how do you scale it to cover 1.5 billion people who live without access to grid-based electricity? What is involved in scaling these successful experiments? Can small local entrepreneurs and NGOs accomplish this transfer of technology across geographies?

Scale of operations is a prerequisite for making an economic case for the BOP. Given a stringent price—performance equation and low margins per unit, the basis for returns on investment is volume. Only a few BOP markets are large—China, India, Brazil, Mexico, and Indonesia. Most of the markets, such as the African nations, are poor and small. The prerequisite for scalability of innovations from these markets is that they are supported by organizations that have significant geographical ambitions and reach. MNCs are ideally suited for this effort. Further, size allows MNCs to make the necessary financial commitments behind potentially successful, innovative ideas. How can HLL leverage its learning, know-how, and “know-why” developed in marketing salt in India and take it to Nigeria, Chad, Ivory Coast, and China?

It is clear, therefore, that pursuing the promise of BOP markets will challenge the dominant logic of both MNCs and NGOs. MNCs will benefit from learning how to engage with NGOs and local community-based organizations to co-create new products, services, and business. NGOs will benefit from partnerships with MNCs, through which they can leverage MNC know-how and systems to scale innovations broadly.

4. Sustainable Development: Eco-Friendly

The poor as a market are 5 billion strong. This means that solutions that we develop cannot be based on the same patterns of resource use that we expect to use in developed countries. Solutions must be sustainable and ecologically friendly.

Consider the use of water. In the United States, domestic use of water per capita is around 1932 cubic meters per person per year. In China, it is 491 cubic meters and in India, 640 cubic meters, respectively. There is not enough water available in most parts of the world to support demand. Even if it is available, the quality of water available varies from indifferent to poor. For example, in Chennai, India, there is an attempt to collect rainwater from rooftops and store it in wells. So far, scarcity has not altered usage patterns. Water usage continues to be a critical component of high standards of living in the Western world. The question that BOP markets will pose for us is this: Can we develop products that provide the same level of functionality with no or minimal use of water? For example, can we wash clothes without water? Can we refresh ourselves without a shower? Can we flush toilets without much water, as is done in airplanes? Can we recycle water for multiple uses within an apartment complex (in urban settings) and within a village (in rural settings) in a closed loop system? Can we conserve water in agriculture through innovative cultivation methods?

In the United States, each person generates 4.62 pounds of waste per day. If everyone in China adopted Western standards of waste per capita, there would be more than 5.5 billion pounds of waste per day. There are not enough places to dump this amount of garbage! Packaging can play a crucial role in the sustainable development of markets in the BOP. With 5 billion potential users, per-capita consumption of all resources, including packaging materials, can be crucial. Even recycling systems might not be practical as the rural markets are dispersed and waste collection for recycling might not be economically viable. At the same time, packaged goods are one way of ensuring product safety. The dilemma is real. So far, MNCs and others have not suggested a practical solution to the packaging problem, nor do we have a comprehensive approach to energy and water use. Water might get the attention of MNCs sooner than energy as the availability of quality water, even for human consumption, is becoming difficult in BOP markets and, in some cases, developed markets as well. The growth of bottled water is an indication of this trend.
The goal here is not to be alarmist. The BOP will force us to come to terms with the use of resources in ways that we have not so far. Whether it is in the use of fossil fuels for energy and transportation, water for personal cleanliness, or packaging for safety and aesthetics, ecological sensitivity will become paramount. I believe that more innovative, sustainable solutions will increasingly emerge from serving the BOP markets than from the developed markets.

5. Identifying Functionality:
Is the BOP Different from Developed Markets?

Recognizing that the functionality required in products or services in the BOP market might be different from that available in the developed markets is a critical starting point. In fact, developers must start from this perspective and look for anomalies from their prior expectations based on their experiences with developed markets.

Take prosthetics as an example. The artificial limb, as a business and good medical practice, is not new. It has been around for a long time and every war, starting with the American Civil War, has given a boost to its usage. Lost limbs due to accidents, polio, or war, are common. India is no exception: There are 5.5 million amputees and about 25,000 to 30,000 are added each year. However, most of the patients needing prosthetics are poor and illiterate. For a poor Indian, regaining the ability to walk does not mean much if he or she cannot squat on the floor, work in the field, walk on uneven ground, and not wear shoes. As Mr. Ram Chandra, talented artist, sculptor, and inventor of the Jaipur Foot, the Indian alternative to traditional prosthetics, said, “Indians do not wear shoes to the temple or in the kitchen.” Jaipur Foot’s design considerations are based on unique functionality, specific to this market, and are easy to recognize, as shown in Table 2.1. The design requirements can be divided into two parts. Design must take into account the technical and medical requirements for various foot movements, but this is not enough. We can build a prosthesis that can perform all the functions required. However, if it is not within reach of the target customer—here the BOP patient—it does not help. Therefore, we need to superimpose the business requirements, not just appropriate prices, but how the individual is likely to use the prosthesis.

The design considerations isolated by the design team of the Jaipur Foot were uniquely oriented to BOP problems (e.g., in India,

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<th>Table 2.1 Jaipur Foot: Design Considerations</th>
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<tr>
<td><strong>Activity</strong></td>
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<td>Squatting</td>
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<td>Sitting cross-legged</td>
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<td>Walking on uneven ground</td>
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<td>Barefoot walking</td>
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Source: Our synthesis of discussions with Jaipur Foot team.

Afghanistan, Bangladesh, Pakistan, Cambodia, Congo, and Vietnam) in fitting prosthetics and are not the problems that designers would have to contend with in the United States. Functionality 1 describes the technical requirements that are unique to BOP consumers in India. Contrary to popular assumptions, this set of design parameters increased the required functionality of prosthetics compared to what is available in the United States or Europe. Functionality 2 describes the additional unique requirements at the BOP level. For example, farmers in the BOP must work in standing water in paddy fields for about eight hours every day. Vendors in the BOP must be able to walk long distances (about 8–10 km per day). Therefore, prosthetics for consumers in the BOP must be comfortable, painless, and durable. The poor cannot afford frequent replacements or hospital visits. They travel from all over India with their families to get treatment at Jaipur Foot but cannot afford boarding and lodging, much less stay for an extended time in a new location. The prosthetics must be custom-fitted in a day. From the perspective of Jaipur Foot, the prosthetics must be fitted with less than fully trained physicians, as there is a shortage of doctors and hospital space. The job of fitting a custom-developed artificial leg must be “deskilled.” On top of this, prices must be reasonable, as most clients are poor. They cannot afford the typical $7,000 to $8,000 per foot cost of prosthetics. At best they can afford $50.
This might appear to be a daunting and impossible task. How can one develop a prosthetic that is more advanced in functionality, for 1/200 of the cost, can be custom-fitted by semiskilled paramedics in one visit (one day at the clinic), and last for a period of four to five years? By accepting these prerequisites, the Jaipur Foot team, led by master craftsman Ram Chandra and Dr. P. K. Sethi, a trained physician, developed a prosthetic that meets all of the criteria for less than $30. This innovation has helped farmers to farm again and a renowned Indian classical dancer to perform onstage fitted with a prosthetic.

The needs of consumers in BOP markets might not be obvious either to the firms or to the consumers. Certainly, the consumers might not know what can be accomplished with new technology to improve their productivity. Managers need to invest the necessary effort to gain a granular understanding of the dynamic needs of these consumers.

India is a country with more than 1 million retail shops. Most of the shops are tiny (around 300–400 square feet) and cater to the immediate neighborhoods in which they operate. Despite space constraints, each might offer well over 4,000 stockkeeping units (SKUs). These stores stock unpackaged (e.g., rice, lentils, oils, salt) as well as packaged products that are both unbranded and branded. Most of the store owners are semiliterate and work long hours. The average sales volume per month is about Rs. 400,000 ($9,000) with very thin margins. Can these stores be possible targets for a state-of-the-art point-of-sale (POS) system? TVS Electronics, an Indian firm (and a part of the TVS group of companies), focused on this market as a potential opportunity for a POS system. To start, its engineers spent several weeks in the store observing operations and the store owners’ approach to management. More than 1,000 hours of video ethnography and analysis by engineers preceded the design of the POS system. The specification of the system was set as follows:

1. Robust system (must accommodate heat, dust, poor training and skills).
2. Stock management with alerts.
3. Payment modalities (cash, credit card).
4. Identification of slow-moving items.
5. Bill printing in multiple languages (English and 11 Indian languages).
6. Power back-up (built-in uninterruptible power supply).
8. Internet-enabled.
10. Priced attractively for this market.

As of the end of 2003, TVSE machines were being field tested in more than 500 stores. The company already has on order more than 5,000 units in industries as varied as petrol stations, railway stations, and pharmaceutical outlets. The design of the POS and its cost structure allow TVSE to migrate this platform seamlessly to other applications.

6. Process Innovation

A significant opportunity for innovation in BOP markets centers around redefining the process to suit the infrastructure. Process innovation is a critical step in making products and services affordable for the poor. How to deliver is as important as what to deliver.

We referred to the Aravind Eye Care System, a profitable institution where 60 percent of the patients are nonpaying patients and the remaining 40 percent pay about $50 to $300 for cataract surgery. What is the secret? The visionary founder of Aravind Eye Hospital, Dr. Venkataswamy (Dr. V as he is affectionately called), says he was inspired by the hamburger chain, McDonald’s, where a consistent quality of hamburgers and french fries worldwide results from a deeply understood and standardized chemical process. In-depth attention to inputs and process steps guarantees high-quality outputs. Dr. V has developed and standardized the Aravind process, in which the first step is more than 1,500 eye camps where the poor are tested for vision problems and those needing help are admitted. They are then transported to hospitals. This is different from the more popular on-site eye camps in villages and small towns in India. The conditions of sanitation and medical care in such camps cannot be controlled as well as they can be in specially designed hospitals developed for this purpose. In the Aravind process, technicians, often young women drawn from the local areas and trained in eye care only, supplement the work of doctors. Patient preparation and postoperative work are done by these technicians. Doctors perform only surgeries. The process flow allows a doctor and two technician teams to perform more than 50 surgeries per day. Because the process is so well developed, technicians and doctors are so carefully trained, inputs are fully controlled, and the system and values are rigidly enforced, Aravind boasts of an outcome rate that is among the best in the world. The IOL, part of the modern cataract operation, is manufactured at Madurai, the
central hub of Aravind, and exported to multiple countries, including the United States.

Amul, the largest and best-known dairy in India, is yet another example. Amul, as a system, is one of the largest processors of raw milk in India. Milk collection is totally decentralized, yet Amul has innovated processes by which collection is reliable and efficient. Villagers, with a buffalo or two, bring their collection to the village collection center twice daily. The milk is measured for volume and fat content and the villager is paid every day. The collected milk is transported to processing facilities in refrigerated vans. Amul’s centralized, large, and highly efficient world-class processing facilities pasteurize and package the milk for retail consumption. Amul also converts raw milk into primary products—milk powder, butter, and cheese—and secondary products such as pizza, ice cream, and Indian sweets. Amul handles marketing and promotion for a very heterogeneous customer base centrally.

The Aravind and Amul stories appear to be very different, but they have many similarities. At the heart of their extraordinary success lie the process innovations they made. These can be visualized as shown in Figure 2.1. The genius of these innovations is the way these two groups—in such different industries—have maintained the local infrastructure of the villages and brought to them the most advanced facilities in their respective fields. Amul connects the farmer with two buffaloes to the national and global dairy market and gives him or her an identity. Aravind brings the world’s best technology at the lowest global cost to the poorest villager and gives him or her the benefit of eyesight and dignity. Neither starts with the idea of disrupting the lives of the poor. Both aim to improve the quality of the life of the poor profitably. Neither compromises on world-class quality. Both have, through careful consideration of process innovation, achieved the requirements we set forth for successful BOP innovations: price performance, scaling, innovative high-technology hybrids, and sustainable, ecologically friendly development.

7. Deskillling of Work

*In most BOP markets there is a shortage of talent. Work must, therefore, be deskillled.*

One of the major goals facing the developing world and, by implication, the developed world is active surveillance of the spread of infectious diseases. The spread of Severe Acute Respiratory Syndrome (SARS) all across Southeast Asia and from there to Canada is a case in point. The World Health Organization (WHO) and Centers for Disease Control (CDC) recognize that active monitoring of the origination of these diseases in remote regions of the world is critical. Vixo, a startup in Peru, created a system to monitor disease patterns. Peru suffered a devastating attack of cholera in 1998 in which more than 11,000 people perished. Peru offers a challenge for the active monitoring of diseases in the remote and mountainous regions where access to the Internet and PCs is scarce. Vixo created a device-agnostic system. Health workers in remote areas can contact health officials in Lima, Peru, through wireless devices, landlines, or the Internet using a PC. More important, each of the health workers in remote areas was given a card with pictures of the progress of the disease. For example, the symptoms of smallpox over a period of time were captured in photographs. Anyone looking at a patient could relate the actual lesions on the patient to the corresponding picture and make a judgment on how severe the disease was. He or she simply had to telephone the central health authorities in
Lima and identify the location and the severity of the case by mentioning the number of the picture on the card. The card, in a sense, was a way of capturing the knowledge of experts and identifying the stages of severity. With this simplified diagnostic process, health workers in the field need not be highly trained, nor do they need access to a complex communications network. They just need a telephone to call the health officials in Lima. Voxiva deskilled the diagnostic and surveillance problem in two ways: by reducing the need for a complex technology backbone for real-time communication as well as for diagnosis of the problem at the local, unskilled level.

Cemex, a Mexican multinational firm in the cement business, started a project called Patrimonio Hoy (Patrimony Now) to help the poorest people build their own homes. The poor in Mexico add, whenever they can, an additional bathroom, kitchen, or bedroom to their homes, endeavors that are very expensive. They often do not know exactly which materials are required. They often cannot afford to buy all the materials needed at the same time. For example, they might buy and store sand in the street, in front of their homes, until they can afford to purchase other materials. A significant amount of the materials would be wasted or lost. In response, Cemex started a program of savings for the poor. A group of three women could start the savings program and over 76 weeks they would save enough to buy a bathroom or a kitchen. The women knew before they started the savings program what kind of a room they could add, including its size, appearance, and materials needed to build it, including cement, steel, paints, tools, and so on. All of the necessities would come in a package and Cemex would hold it in storage until the customers were ready. Further, they provided technical assistance and advice on how to "do it yourself" with skilled technicians. Since the launch of this program, Cemex has helped more than 300,000 families build additions to their homes.

8. Education of Customers

Innovation in BOP markets requires significant investments in educating customers on the appropriate use and the benefits of specific products and services. Given the poor infrastructure for customer access, innovation in the educational process is vital.

More than 40 percent of India is media-dark, so TV- and radio-based messages are inappropriate methods to reach these consumers and educate them on product and service benefits. Not surprisingly, in BOP markets, education is a prerequisite to market development. Consider, for example, the incidence of stomach disorders among children, especially diarrhea. More than 2 million children die of this malady every year, a totally preventable cause of death. The cure is as simple as washing one's hands with soap before eating. HLL discovered that by this simple process, diarrhea-related fatalities could be reduced by at least 50 percent. Incidentally, HLL could also increase its volume of soap sold. However, the problem was how to educate people on the need for washing hands with soap and to convey the causality between "clean-looking but unsafe hands" and stomach disorders. HLL decided to approach village schools and educate children on the cause of disease and how to prevent it. HLL built simple demonstrations using ultraviolet dirt and bacteria detectors on "clean-looking hands." The point was that washing hands in contaminated running water might give the appearance of cleanliness, but such water harbored invisible germs that cause the damage. They educated teachers and NGOs and used their own "evangelists" who went to village schools and spread the messages of cleanliness, washing with (HLL) soap, and disease prevention. The children often became the most educated in the family on hygiene and, therefore, began educating their parents. The children became the activists and the advocates of good and healthy practices at home and HLL reaped new profits.

In order to access and educate consumers at the BOP, more than a single format and approach is called for. Often, collaboration between the private sector firms, NGOs, the public health authorities (Ministers of Health), and the World Health Organization can be of great value. However, collaboration is not without its attendant problems. Although all of these organizations might agree on the broad agenda of improving public health, each has a slightly different approach and mandate (i.e., politicians are also very concerned about public image). As HLL learned, collaborating with local authorities and the World Bank can cause innumerable and unforeseen problems. Although this multiparty collaboration is difficult, collaborating with the ministers (and their bureaucracies) who have as their mandate better health can be a positive step. NGOs, which are also focused on improving the lives of the poor and have deep local knowledge, can be a great help, once they can accept a commercial solution (as opposed to a charity-based or government-subsidy-based approach) to the problem.

The methods used for educating consumers will also vary. In media-dark zones, billboards painted on walls have been a staple in most developing countries, as are truck-mounted demonstration crews with
catchy jingles that attract crowds in villages. In the case of Aravind Eye Hospital, well-publicized eye camps in villages conducted with the cooperation of local enterprises, NGOs, and schools, are a good way to educate people on eye care and access patients who need surgery. Aravind has developed a strict procedure for holding these eye camps. They are used for preliminary examination of patients. All surgery is performed in specially designed hospitals.

9. Designing for Hostile Infrastructure

The BOP markets exist in a hostile infrastructure. Design of products and services must take this into account.

Consider the design of PCs for a rural network application in northern India. ITC was building this network for connecting Indian villages in a seamless supply chain. E-Choupal, literally "the village meeting place," was designed to enable the farm community and ITC to collaborate and have a constant dialogue. The PCs placed in the village had to work under conditions unthinkable in the West. For example, the voltage fluctuated between 90 and 350 volts against a rated 220-volt transmission. Sudden surges in the current were quite the norm. Early installations were burned out and rendered useless in a very short time. Further, the supply of electricity was very uneven, often available for only two or three hours per day. ITC engineers had to add to the installation an uninterruptible power supply system, including surge protectors and a solar panel that would allow at least three to four hours of uninterrupted, quality electricity to operate the system. For communication, they had to depend on the satellite network rather than regular landlines. All this added to the cost. However, without this complete system that can operate in the "hostile" village environment, the entire project would have failed.

Consider the provision of good-quality water for the BOP market. Water treatment must eliminate particulate pollution, microbes, viruses and cysts, and organic and inorganic compounds. In addition, if we can supply improved taste and nutrition, it could be a welcome benefit. Systems have been developed to eliminate the "bad stuff" from water, including simple filters to complex systems. However, "purified" water from these systems can still be parcelled out in unhygienic containers and touched by unclean hands. The benefits of water purification can be totally offset by what can best be described as the "last step" problem: the last step from the purifier system to consumption. Part of the system design must include the way water is dispensed and stored immediately before actual consumption.

10. Interfaces

The design of the interface must be carefully thought through. Most of the customers in BOP markets are first-time users of products and services and the learning curve cannot be long or arduous.

In designing the POS system for grocery stores, one of the main considerations was the nature of the interface. For example, each store had its own terminology and there were no set standards. Further, each store, based on its clientele, had a particular portfolio of fast-moving items. The software architecture, therefore, had to be designed so that the system could be customized easily and rapidly for each store.

Interface design can also provide some interesting and unexpected surprises. For example, in the case of rural agricultural kiosks, EID Parry found that its customers prefer an English-language interface to their PCs rather than the local language (Tamil). Wireless customers in India and Bangladesh were able to take to the new technology more rapidly than expected. Indian housewives—rich and poor alike—are avid users of SMS messaging; on average they send 60 messages per day. Farmers in the ITC e-Choupal network, in a very short period of time, were sufficiently knowledgeable to navigate the Web to check on soybean prices at the Chicago Board of Trade or the latest cricket score. The BOP can be a source of surprises on how rapidly new technologies are accepted and assimilated.

The PRODEM FFP interface in Bolivia is yet another case of creative interface design. The retailer Elektra in Mexico caters to BOP customers and has also introduced fingerprint recognition as a basis for operating the ATMs in its stores so customers need not remember their nine-digit ID codes. The opportunities for innovation—iconic, color-coded, voice-activated, fingerprint and iris recognition (biometric-based) interfaces—are more likely at the BOP than in developed countries. How we interpret the future of interface design is critical and significant research is necessary.

11. Distribution: Accessing the Customer

Distribution systems that reach the BOP are critical for developing this market. Innovations in distribution are as critical as product and process innovations.
ICICI started as an institutional lender and has grown to become the second largest bank in India. Its move into retail banking started in 1997. As such, it is a newcomer and has had to compete with banks such as the State Bank of India with more than 14,000 branches and a 200-year history in retail banking. To compete, ICICI redefined distribution access; by moving away from the approach of building branches as the primary source of access to retail customers, ICICI was able to innovate. ICICI defined access through multiple channels. Today it is the largest PC-based bank in India with more than 5 million active PC banking customers. ICICI also has the largest and fastest growing base of ATMs in India. As of August 2003, it had an installed base of 1,750 ATMs. Further, in acquiring The Bank of Madura (which had built a strong base of rural distribution through self-help groups in southern India), it gained access to 10,000 such groups involving more than 200,000 customers. In addition to its own initiatives in building retail access, ICICI also formed partnerships with large rural marketers such as ITC and EID Parry to access farmers through their networks. Over a period of six years, through this unconventional approach to retail customer access—PCs, ATMs, self-help groups, NGOs, microfinance organizations, large rural marketers and their networks, Internet kiosks and operators, and some traditional branches of their own—ICICI has a retail base of 9.8 million customer accounts and is growing at a rapid rate.

HLL, a subsidiary of Unilever, is a very well-established marketing powerhouse in India. HLL serviced urban markets through dealers and suppliers and boasted the best distribution access in India. However, the company found that it was unable to access remote villages through the traditional system. As a result, HLL started a program whereby village women are involved in distributing their products in villages that were not fully serviced by HLL’s existing systems of suppliers and dealers. The program, called Shakti, empowers women to become entrepreneurs. HLL’s CEO, M. S. Banga, believes that this additional arm of distribution will eventually provide coverage in the 200- to 300-million-person market at the BOP currently not served by existing systems.

Avon has been extremely successful in using direct sales in Brazil. Avon has built a $1.7 billion business based on direct selling. Avon representatives become experts who provide guidance to customers, minimisers, distribution channels, and providers of credit. Amway has had similar success in India and has built a direct distribution system covering more than 600,000 Amway representatives and a total revenue base of Rs. 500 crores ($110 million).

12. BOP Markets Essentially Allow Us to Challenge the Conventional Wisdom in Delivery of Products and Services

By its very nature, success in BOP markets will break existing paradigms.

All examples used in this book challenge conventional wisdom. They challenge the current paradigms in innovation and product and service delivery in fundamental ways.

For example, Jaipur Foot and Aravind Eye Hospital challenge the assumptions behind how health care can be delivered. By focusing on one disease and one major process, these great institutions have pioneered a way of gaining scale, speed, extremely high quality, and unbelievably low costs. Their systems are being replicated by others in India and around the world. For example, several hospitals in India are increasingly specializing in cardiac care. The cost of a bypass operation in India is now as low as $4,000, compared to $50,000 in the United States. In fact, Indian groups are now negotiating with The National Health System in the United Kingdom to fly British patients into Delhi and operate on them at lower costs, including travel, than they could in the United Kingdom without compromising quality of care.

BOP markets accept the most advanced technology easily. In the wireless market, CDMA coexists with GSM in India. Customers and operators see 3G as a viable alternative. Access to audio and video clips and news and stock quotes are considered basic services. These services are available at $10 down per handset and $0.02 per minute of long-distance calling. Building a customer base of 1 million new customers in 30 days also appears to be normal.

As the innovation for public health surveillance invented by Voxiva has demonstrated, innovations from the BOP can travel to advanced countries. Voxiva’s solution is now being used by the U.S. Food and Drug Administration (FDA), Department of Defense, and the Centers for Disease Control (CDC).

Energy innovator E+Co is demonstrating that it is possible to develop hybrid systems that are local, economic, and sustainable. Although not yet a full-fledged commercial success, this experiment is challenging current thinking about reliance on grid-based electricity.

Enabling people to buy by accessing markets creatively and designing affordable products for them breaks the long-held assumption that BOP markets are not viable. A wide variety of
firms—HLL, Cemex, ITC, Amul, and ICICI—are demonstrating that this can be done profitably.

BOP markets break our traditional ways of thinking and acting. This might be their biggest allure and challenge alike. Unless we are willing to discard our biases, this opportunity will remain invisible and “unattractive.”

**Conclusion**

Getting the right combination of scale, technology, price, sustainability, and usability requires that managers start with a “zero-based” view of innovations for the BOP markets. Managers need a new philosophy of innovation and product and service delivery for the BOP markets. The 12 principles that constitute the minimum set of a philosophy of innovation are critical to understand and apply. Needless to say, they challenge the existing assumptions about product and market development. By forcing managers in large enterprises to rethink and re-examine their assumptions about form and functionality, about channels and distribution costs, BOP markets can serve as catalysts for new bursts of creativity. The biggest advantage is often in challenging the capital intensity and the managerial cost structures that have been assumed in MNCs.

Large firms, especially MNCs, can learn a lot from their active participation in BOP markets. It can help them improve their own internal management processes and bottom line. We examine how MNCs can benefit from their involvement in the BOP in the next chapter.

**Endnotes**


**We** have described the process by which large firms can create products and services that are ideally suited for the BOP markets. It is natural to ask whether the managerial energy required for these innovations is justified. Although there are opportunities for growth in BOP markets, are these opportunities attractive enough for large firms (including MNCs) to go through the changes that are required in their internal systems and processes? To challenge their dominant logic? Similarly, will the social and developmental benefits of such business growth be substantial enough for NGOs and community organizations to give priority to market-based approaches?

I believe the answer is an unambiguous “yes.” Based on emerging evidence, we can identify four distinct sources of opportunity for a large firm that invests the time and energy to understand and cater to the BOP markets:

1. Some BOP markets are large and attractive as stand-alone entities.
2. Many local innovations can be leveraged across other BOP markets, creating a global opportunity for local innovations.
3. Some innovations from the BOP markets will find applications in developed markets.
4. Lessons from the BOP markets can influence the management practices of global firms.

The benefits of operating at the BOP, therefore, do not just accrue in local markets. We describe each one of these opportunities next.

Engaging the BOP

There are two ways in which large firms tend to engage the BOP markets. The traditional approach of many MNCs is to start from the business models honed in the developed markets—the top of the pyramid and their zone of comfort. This approach to the BOP market inevitably results in fine-tuning current products and services and management practices. There is growing evidence that this approach is a recipe for failure. MNCs and large firms have to start from a deep understanding of the nature and the requirements of the BOP, as outlined in Chapter 2, and then architect the business models and the management processes around these requirements. This approach to the BOP market will not only allow large firms to succeed in local markets but will also provide the knowledge base to challenge the way they manage the developed markets. Let us consider some examples.

BOP consumers in Latin America are careful in their use of diapers. They use one or two changes per day compared to the five or six changes per day common among the top of the pyramid consumers. Because they can afford only one or two changes, they expect a higher level of absorbency in the diapers and an improved construction of the diaper that will accommodate additional load. This means that the firms have to technically upgrade the quality of their diapers for the BOP consumers compared to the products they currently sell to the rich in those markets. Needless to say, the new product built for the BOP market is higher in quality and provides a better price–performance proposition. Similarly, detergent soap, when used by BOP consumers in India washing their wares in running water, becomes mushy. About 20 to 25 percent of the detergent soap can be lost in the process. Therefore, HLL developed a soap with a coating on five sides, which makes it waterproof. The coated soap saves 20 percent wastage even in a hostile user environment. The innovation is of interest to the rich as well. Access to clean water is a major concern at the BOP. Polluted water (particulate, bacterial, and viral pollutants) is common. Boiling water is the only current alternative to eliminating the bacterial and viral pollutants. A focus on solving this problem has to start with a cost target that is no more than the cost of boiled water. Further, the system has to create a quality level that is better than boiled water (removing sediments). The process is of interest to the rich as well.

The quality, efficacy, potency, and usability of solutions developed for the BOP markets are very attractive for the top of the pyramid. The traditional MNC approach and the approach suggested here—top of the pyramid to BOP and from the BOP to the top of the pyramid—are shown in Figure 3.1.

As the foregoing examples illustrate, the demands of the BOP markets can lead MNCs to focus on next practices. The BOP can be a source of innovations for not only products and processes, but business models as well. Let us start with the growth opportunities in local, stand-alone BOP markets first.
Local Growth Opportunities

Some of the local BOP markets are very large. Large population base is one indicator of the size of the market opportunity at the BOP; not necessarily the per-capita income. For example, China, India, Indonesia, Brazil, Mexico, Russia, South Africa, and Nigeria can potentially be very large emerging BOP markets. If an industry or a firm finds the "sweet spot"—meaning the right business model and the right combination of products and services—these markets could have explosive growth. Consider growth opportunities in China. China today is the world's largest producer of steel. The growth of the appliances, building, and auto markets has created an insatiable appetite for steel. China's steel capacity is estimated at 220 million tons compared to 110 million tons in Japan and 90 million tons in the United States. China has also an installed base of over 250 million cell phones. That is larger than the installed base of the United States. China is also one of the largest markets for televisions, appliances, and autos. The growth spurt in China is without parallel. Similarly, India is at the very early stages of a growth spurt in a wide variety of businesses such as two-wheelers (4.8 million during the fiscal year 2002–03), housing loans, and wireless. The housing loan business went from a low of Rs. 19,723 crores during fiscal 1999–2000 ($4.4 billion) to Rs. 51,672 crores ($11.5 billion) in 2002–2003. During the latter part of 2003, India was adding about 1.5 million telephone subscribers/month.

Needless to say, this growth was not all derived from the very poor. There are a lot of emerging "middle"-class customers here, but most of them earn less than $1,500 per capita ($6,000 per family of four). This growth is not funneled by the top of the pyramid. What is it that MNCs learn in these markets? The lessons for Samsung and LG (South Korean suppliers of cell phones to India), not just for Reliance and Tatas (Indian providers of service), is that they have to adjust to rapid growth, not 2 to 5 percent per year, but perhaps 50 to 100 percent per year.

Learning to Grow

BOP markets can collapse the time frames taken for products, technologies, and concepts to diffuse in the system. Many of the drivers of change and market growth—deregulation, involvement of the private sector in BOP markets, digitization, ubiquitous connectivity and the attendant change in the aspirations of people, favorable demographics (a young population), and access to credit—are simultaneously present in BOP markets. These drivers interact. The result is the challenge to the "S curve" that is the model for the diffusion of new products and services in the developed world. The changes that played out over 15 years in the developed markets are being collapsed into a short period of just three to five years in many BOP markets. M. S. Banga, CEO of HLL, suggests that the real challenge in BOP markets is that managers have to cope with the "I curve." The entire management process in most large firms is geared for slow growth, if at all. The I curve challenges the status quo. The S and the I curves, the two approaches to diffusion of innovations (products and services), can be conceptualized as shown in Figure 3.2.

This is good news and bad news. A cell phone today is a telephone, a camera, a watch, a computer, and a partial radio and TV. Why would one need a traditional watch (other than as an ornament) if one had a cell phone? The I curve can rapidly propel some innovations and can equally rapidly destroy some traditional markets.¹

Rapid growth can also make new demands on firms. For example, HLL wants to build a network of 1 million direct distributors. This means the recruitment and training of about 30,000 to 40,000 people every month. Evaluating applicants; identifying those who could make good HLL distributors; training them in products, businesses models, and the values of the company; and inducting such a large number into

Figure 3.2 Traditional and BOP Growth Patterns. Source: M. S. Banga, CEO, HLL.
the system create new demands on the process of management. Very few firms around the world have experience in inducting this many new recruits (independent distributors) per month.

**Local Innovations and Global Opportunity**

The micro encapsulation of iodine in salt to preserve the iodine in the harsh conditions of transportation, storage, and cooking in India has found market opportunities in Africa, especially in Ivory Coast, Kenya, and Tanzania. Iodine Deficiency Disorder (IDD) is common across the developing world, and the solution found in India has been transported across other similar markets with IDD by Unilever. Similarly, during the late 1980s, in response to the growing success of Nirma, a local entrepreneurial startup in the detergent business that created a new category, focused on the BOP markets, HLL launched Wheel, intended for the same market segment. Wheel today is one of the largest brands in the HLL portfolio in India ($150 million). The BOP market has grown rapidly. BOP markets in India account for a total of 1.0 million tons of detergents, compared with 300,000 tons for the top of the pyramid. More important, the lessons learned in India were not lost on Unilever. It wanted to protect BOP markets in countries such as Brazil, Indonesia, and China. It took the lessons from developing Wheel in India—from the formulation, manufacturing process, packaging, pricing, distribution, and advertising and promotion—to Brazil. It introduced a similar product oriented toward the BOP called Ala. The product was a runaway success. The product was available in 2,000 small neighborhood stores in less than three months. The detergent team that developed the new business model for the BOP in India also went to Brazil and China to help build the distribution systems that were critical for the success of the business. Today, India is seen as a laboratory for similar “India-like” markets within Unilever. Product ideas and concepts are tried out in India with a global BOP market in mind. Similarly, the idea of single-serve units has become a global phenomenon in the BOP markets. The growth in fast-moving consumer goods businesses in Bangladesh, Nepal, Pakistan, and China has been fueled by similar requirements.

The success of Grameen Bank in developing microfinance in Bangladesh as a successful commercial operation has led to global interest in the process. Grameen Bank was totally focused on BOP customers. The average loan size was less than $20 when it started. There are more than 17,000 microfinance operations that are variants of the Grameen concept around the world, including in the United States. The microfinance revolution now has its own global conference every year.

The success of Jaipur Foot is now exported to a wide variety of countries with similar requirements. The primary demand in all these countries for prosthetics is from BOP customers. They have been available in 19 countries, from Afghanistan to Vietnam. The Aravind Eye Hospital, in a similar vein, is training doctors to establish a low-cost, world-class delivery system for eye care in South Africa, Cambodia, and Vietnam. In an interesting twist of the traditional view of capabilities, the cost and quality advantages of cardiac care in India are allowing it to negotiate terms for the possibility of moving a portion of the patients from the National Health System in the United Kingdom to India. The total cost of the trip for the patient and an accompanying family member, the stays in India, and the cost of patient care will be less than the cost in the United Kingdom. More important, the quality of care is equally good or better. There are no delays in accessing care.

The Indian pharmaceutical industry had to learn to serve the BOP market. Prices were regulated by the government. Further, affordability of the public health system forced very low prices. It also forced them to develop methods for reverse engineering. Controversial as it is, the Indian pharmaceutical industry is able to deliver drugs coming off patents in the United States at a fraction of the cost charged by the established drug companies. However, the focus on the BOP has allowed these firms to invent cost-effective ways to manufacture, test, and distribute.

**BOP Solutions for Developed Markets**

In the rural areas of countries such as Peru, providing high-quality health care is difficult. More difficult is the surveillance of outbreaks of infectious diseases. These remote regions must be kept under constant surveillance to avoid the spread of disease, be it cholera or SARS. However, these locations are not well-connected for constant communications. PCs are rare, and telephone lines are a luxury. The question for public health professionals in such a situation is simple:
Lessons for MNCs from BOP Markets

The most interesting lesson for MNCs from operating in the BOP market is about costs—for innovation, distribution, manufacturing, and general “costs of organization.” Because the BOP forces an extraordinary emphasis on price performance, firms must focus on all elements of cost. Shortage and the cost of capital force firms in BOP markets to be very focused on the efficiency of capital use. MNCs tend to impose their management systems and practices on BOP markets and find that it is hard to make a profit. The choices are simple: Change the management systems to cut costs or lose significant amounts of money. The lessons learned from BOP markets by MNCs are covered in the following sections.

Capital Intensity

The judicious use of capital is a critical element of success in BOP markets. For example, HLL works with negative working capital. It focuses on reducing capital intensity in plants and equipment. By focusing on a judicious mix of outsourcing to dedicated suppliers, it not only reduces its capital intensity but creates several small and medium-size enterprises that can conform to the norms and standards set by HLL. HLL, as the only customer to these suppliers, can and does influence their operations. Second, a senior management focus on logistics and distribution is critical for reducing the capital needs of the business. HLL serves 850,000 retail outlets in one of the most difficult distribution terrains. The sales data from every retail outlet is collected and processed in a central processing facility. All the retail outlets are serviced frequently. Finally, a focus on revenue management allows for reducing the capital tied up in receivables. HLL is able to collect revenues in real time as the goods leave the warehouses of their suppliers. The suppliers might provide credit to the dealers and retailers. HLL as a manufacturer can reduce its capital intensity. The results can be compelling. For example, the system for focusing on capital first initiated with the introduction of the detergent Wheel to the BOP provided evidence of how many more opportunities for value creation can be unearthed by serving the needs of the BOP. A comparison of the financial performance of Nirma (the local competitor), HLL in the top of
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<th>Table 3.1</th>
<th>Economic Value Creation at the BOP</th>
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<td>Sales ($ Million)</td>
<td>Nirma</td>
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<tr>
<td>150</td>
<td>100</td>
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<tr>
<td>Gross margin (%)</td>
<td>18</td>
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<tr>
<td>Return on capital employed (%)</td>
<td>121</td>
</tr>
</tbody>
</table>

**Notes:** The bottom line can be very profitable. Low margins/high unit sales. Game is about volume and capital efficiency. Economic profit vs. gross margins.

**Source:** John Ripley, Senior Vice President, Unilever PLC.

the pyramid market with Surf, and HLL in the BOP market with Wheel, is shown in Table 3.1.

It is important to separate gross margins from return on capital employed (ROCE). The real economic profit is in the effective use of capital.

A similar situation exists at the Aravind Eye Hospital. It uses the most modern equipment available in any facility in the world. It costs are dramatically brought down by its ability to use the equipment effectively, as it specializes only in eye care and everyday doctor and nurse team performs an average of 50 surgeries per day. Only 40 percent of its patients pay. A cataract surgery costs $50 compared to $3,000 to $3,500 in the United States. In spite of these differences, Aravind's ROCE is in the 120 to 130 percent range. Aravind is totally free of debt. The revenues for the year 2001–2002 were Rs. 388.0 million ($86 million) with a surplus (before depreciation) of Rs. 210.5 million ($46.5 million). This would be the envy of every hospital in the United States. The productivity and the volumes at Aravind are the basis for this level of profitability. Every doctor accounts for 2,000 operations per year, compared to a national average of 300 in India. The four locations in the Aravind system process more than 1.4 million patients (including 1,500 eye camps) and perform 200,000 surgeries. They operate with about 80 doctors and a total staff, including paramedics, counselors, and others, of 1,275.

With an ITC e-Choupal, it costs the company about Rs. 100,000 ($2,100) per kiosk installation. The company saves about Rs. 270 per ton on the acquisition of soybeans. The payback period can be as low as one full season. The recovery of that investment requires an acquisition target of about 4,000 to 5,000 tons from a single kiosk (a cluster of villages is supported by the kiosk). Adding additional services such as selling seeds, fertilizers, and crop insurance can enhance the profitability of the system. The economic returns can be significant.

**Sustainable Development**

BOP markets are a great source for experimentation in sustainable development. First, resources such as water, energy, and transportation are scarce and expensive. Automotive and two-wheeler manufacturers are learning that the BOP customers are very attuned to the total cost of ownership and not just the cost of purchase. The miles per gallon—the efficiency of energy use—is a significant determinant of market success. Similar demands are imposed on water use.

BOP markets can also represent an emerging problem. Single-serve packaging is advantageous to create the capacity to consume at the BOP but can also lead to a major environmental problem. More than 13 billion single-serve packages are sold annually in India and this trend is growing rapidly. Although plastic bag appear attractive, they are not biodegradable. MNCs involved in the BOP markets have the ability and the motivation to find solutions to the problem of packaging in emerging markets.

**Innovations**

As we discussed in depth in Chapter 2, the process of innovation for the BOP forces a new set of disciplines. First, the focus is on price performance. Innovations must become "value-oriented" from the consumer's perspective. The BOP should focus on both the objective and subjective performances of the product or service. Markets at the BOP also focus on the need for 30 to 100 times improvements in price performance. Even if the need is only for 10 to 20 times improvement, the challenge is formidable. The BOP can become a major source of innovations. Consider, for example, the need for user-friendly interfaces. Biometric authentication systems such as fingerprint and voice recognition are emerging from the BOP markets, as we saw in the case of PRODEM FFP in Bolivia and Elektra in Mexico. Logistics and distribution requirements are an integral part of the innovation process at the BOP.

Serving the BOP forces a new business model on MNCs. Management systems developed for a price performance level cannot be fine-tuned to cope with the demands of the BOP markets. Although MNCs are slowly
adapting to the needs of the BOP, very few have consciously focused attention on examining the implications of their own operations in the BOP for their global operations. So far the attention has been on outsourcing from the more cost-efficient locations such as China, Taiwan, Thailand, the Philippines, and India. A $50 CD player is not just about wage rates, but a totally different way of approaching manufacturing.

The I curve has different implications for scaling. The timing of investments, investment intensity, and the pace of market and distribution development become crucial, as is the rate at which costs must be brought down to fuel growth of the market.

The Costs of Managing

ICICI Bank manages, with 16 managers, a portfolio of 200,000 customers at the BOP. The entire network of management consists of a hierarchy shown in Figure 3.3.

There are only 16 managers (employees) from the ICICI side. Each project manager oversees the work of 6 coordinators. Coordinators are women who are experienced in the development of self-help groups. They are identified and are asked to be coordinators. They helped project managers in approval of loans and help develop new SHGs. The coordinator oversees the work of promoters. The primary responsibility of the promoters is the formation of new SHGs. She must form 20 groups per year. She is financially compensated for the successful formation of new groups. The promoters understand the village culture because they are part of it. They carry credibility because they have been part of a successful SHG. They speak the language of the groups that they deal with. They are also identified from the local communities. As a result, the organizational system that is built in this case is quite unique.

1. The basic unit of analysis is the SHG with 20 members. Loans are given to the SHG and the group decides how to partition the money it receives as loans. The SHG is responsible for paying back the loan and the interest. The bank does not lend to individuals. As such, the credit-worthiness of the SHG depends on how well it can enforce compliance among its members. They all understand that what is at stake is the access to cheap and reliable capital, compared to all the alternatives including the local moneylenders. Therefore, the SHG does credit analysis, project evaluation, monitoring of the use of funds, collection, and reinvestment. The control is totally local and the SHG is empowered. From this perspective, ICICI Bank takes little risk.

2. Market development is also handled by SHG veterans. The promoters are from SHGs and their territories are clearly demarcated. As a result, the person promoting the idea is closest to the community that the bank wants to reach. The promoters are paid an incentive based on the number of SHGs formed by them in good standing.

3. The regional managers or coordinators are also from local communities in which they work. Their work is primarily focused on training and supervising the promoters and evaluating the quality of the SHGs as they are formed.

4. The concept of the structure and the management process is built from the bottom up. There is distributed leadership. The role of the company employees in the day-to-day running of the SHG is minimal. The general sales and administration costs of this system are about 5 to 10 percent of the costs of a typical bank. That makes the system cost-effective and makes small transactions profitable. Further, this also allows for rapid scaling. ICICI increased from 2,000 SHGs in 2002 to 10,000 in 2003.

Figure 3.3 The cost of management.
The SHGs and the direct distribution system we have described, such as Shakri Amma, represent an extraordinary innovation that both cuts costs and risks for the firm and at the same time creates an empowered group of new entrepreneurs with sustainable, rising income opportunities. Business management skills, technology, and contacts are pushed down to the local grassroots level. The SHGs perform several of the functions that the firm would have handled in the traditional approach to managing. For example, the SHG, by validating the individuals who will get the loan, by checking the nature and viability of the project, and by taking responsibility for monitoring the progress of the project is, in essence, an extension of the traditional firm. The SHG helps co-create value for the firm—in this case, ICICI. The bank does not have direct contact with the individuals, but monitors the loan indirectly through the SHG. This represents a new model of relationship between the firm and its consumers. The quality of the SHG is the guarantee of the investment. However, the SHG, being so close to its members—same village, same group, frequent meetings, visibility of progress of projects, and, most important, the ability to assess behaviors—is in a great position to alter the risk profiles of the loans. The large bank gains local responsiveness capability at low (or no) cost. The same is true of the Shakri Amma system. The local entrepreneur knows her village and its needs and can also influence the buying decisions of the villagers. She is at once the salesperson, the supplier, the trusted advisor, and the educator for the village. She is the one who can convince the villagers that iodized salt will be a healthy option for the family. HLL is now experimenting with connecting these individual distributors through an Internet network. The I-Shakti project will create the most dramatic opportunity for the BOP consumers to influence the firm and its decisions regarding product features, costs, availability, and the business model in general.

What we see here is the convergence of the traditional roles of the firm and the consumer and the distributor and the consumer. Functions such as advertising, credit management, risk analysis, and market development are assumed by the consumers-entrepreneurs and the consumer-entrepreneurial community (SHG). The boundaries of the firm expand beyond its legal parameters and begin to engage and empower the large and heretofore economically isolated segment of developing country societies known as the “informal sector.” The resources that are available to the firm expand even more dramatically. Access to the 10,000 SHGs is, in its simplest form, a huge resource multiplier to the firm. Whether it is resource leverage through selective access, local knowledge, risk reduction, or reduction in capital needs, the firm benefits. This is at best a win-win situation. The local communities take charge of what they want. They make their own decisions and choices. They are accountable and therefore feel a sense of empowerment and self-esteem. They know they can deal with the large firm on an equal basis. Although the resources are limited for the SHG, the bank cannot unilaterally make decisions. In that sense, there is less asymmetry in power.

Learning to Live in a Network of Relationships

MNCs working at the BOP learn rapidly that they have to learn to live with a wide variety of relationships with a large number of institutions. For example, in the case of selling iodized salt, HLL learned very fast that its efforts would impact public policymakers and officials in the health department. NGOs focus on local communities and in many cases conflict with industry practices. HLL had to learn to cope with the agendas of the various parties that might be involved and work with them effectively in a cooperative mode. The case of soap, intended to reduce diarrhea, was more interesting. HLL had to deal not only with state governments and NGOs, but also with the World Bank, which wanted to partly fund the program of education and distribution. It also wanted to be involved in the evaluation of results. As such, the firm had to learn to cope with the differing priorities, time scales, decision cycles, and perspectives of both the causes of the problem and the nature and efficacy of the solution. The reactions of the various groups can vary from open hostility toward the MNC to a willingness to cooperate. At the end of the day, however, MNCs learn how to transform their ideals of good corporate citizenship and social responsibility into their core business of delivering value on a day-to-day business basis. Social sector organizations learn how to scale their still-marginal efforts at “social enterprise” into viable business models serving a mass market.

BOP markets represent 80 percent of humanity. It is reasonable to expect that 4 billion people in search of an improved quality of life will create one of the most vibrant growth markets we have ever seen. Private-sector involvement in development can be a win for both the BOP consumers and the private sector. All of us can learn. The flow of ideas, knowledge, and innovation will become a two-way street—from the
developed countries to the developing as well as the reverse. MNCs can help BOP markets to develop. They can also learn from BOP markets.

In the next chapter, we discuss how the large firm can create a private-sector ecosystem and act as a nodal firm. This ecosystem is a prerequisite for developing markets at the BOP.

Endnote