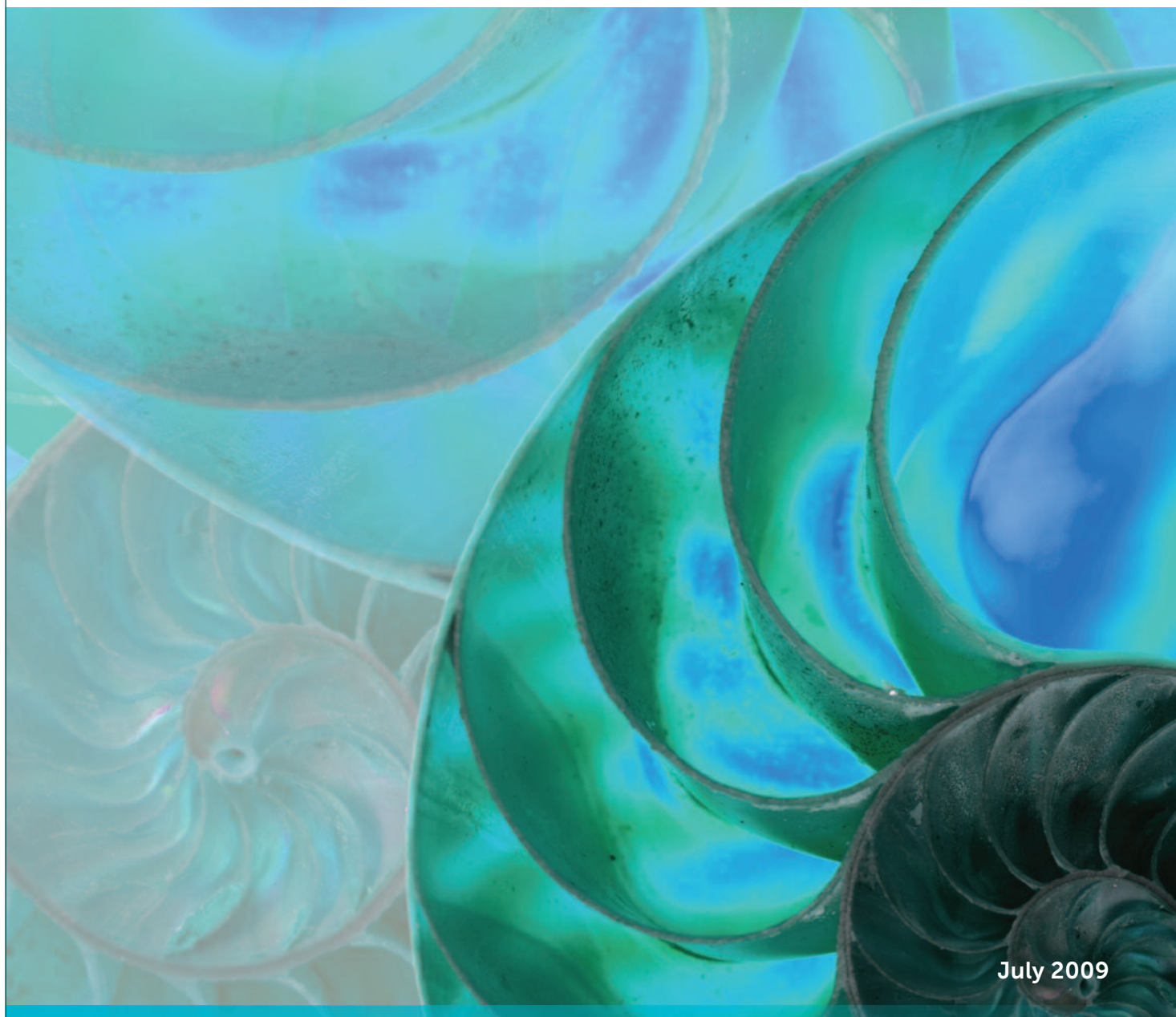


# BASE OF THE PYRAMID 2.0

## Bringing sustainable growth to scale at the BOP through Enterprise ICTs

**Authors:** William J. Kramer, Steven A. Rochlin & Guy Morgan, AccountAbility

**With a foreword by:** Susan Morgan, BT Group



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## About the authors



**Steve Rochlin** is Senior Partner and AccountAbility's US representative. He is co-author of *Untapped: Creating Value in Undeserved Markets* and *Beyond Good Company: Next Generation Corporate Citizenship*. He has consulted to several of the world's leading brands to help them achieve world class global corporate citizenship performance, measurement, strategy, and stakeholder engagement. Steve is currently leading initiatives on the alignment of corporate responsibility with core business strategy; innovative models of collaborative governance; and on the accountability of leaders for sustainable development. Steve is a Senior Research Fellow for The Center for Corporate Citizenship at Boston College.



**Bill Kramer** is a Partner Associate in AccountAbility's North America office. For more than a decade, he has focused on private sector led development. Bill is president of The Global Challenge Network, and Senior Associate of the IESE Platform on Strategy and Sustainability, Barcelona. From 2001 to mid-2007, he worked with World Resources Institute in a variety of posts involved in all aspects of the Institute's work on pro-poor business strategies. Bill is co-author of *The Next Four Billion: Market Size and Business Strategy at the Base of the Pyramid*. He is the author of numerous articles and studies, including *The Role of the ICT Sector in Expanding Economic Opportunity* (Kennedy School of Government, 2007). Prior to joining WRI, he founded a non-profit organisation examining the relationship between new knowledge creation, economic development, and individual well-being. Through his NGO he did extensive project field work in South Africa, Côte d'Ivoire, Kenya, and Central Europe.



**Guy Morgan** is a Principal within AccountAbility's service delivery team in Boston, USA. He conducts strategy and stakeholder engagement work for clients in the ICT, pharmaceutical and construction sectors and consults with multilaterals, including the World Bank, on global sustainability standards. He also manages research and service delivery for the Global Leadership Network, a landmark collaborative initiative to advance performance excellence in corporate responsibility. In the past, Guy has conducted research and consulting on the governance and operational management elements of corporate responsibility and is lead author of, *Leading corporate citizenship: governance, structure, systems*, published in the *Journal of Corporate Governance*, January, 2009.



# Foreword



Companies that don't serve consumers in emerging markets have seen the potential for creating sustainable growth at the Base of the Pyramid, but it is often far from clear what their contribution could be, given the focus to date on the consumer angle. BT has worked with AccountAbility on this paper as a way of stimulating discussion and debate on the issue, using our industry as a backdrop to the investigation.

We live in uncertain, volatile but potentially exciting times with the opportunity for landscapes to be redrawn in the coming years. Market saturation in developed economies; small, but growing income levels in emerging markets which are substantial when aggregated; and international efforts to achieve the Millennium Development Goals all point to the possibility for positive change in the livelihoods of literally billions of people at the base of the economic pyramid. Access to health, education and information will be central to the achievement of this.

The last few years have seen an explosion in activity in Base of the Pyramid (BOP) markets as these trends start to mature. Whilst still challenging and uncertain in some areas, the business and development agendas are becoming better aligned. Businesses are seeing the direct connection that can be made between doing good business and doing good. Much of the activity has been innovative, experimental and difficult to categorise, with multiple models, funding approaches and partnerships all being tried out.

There are three key challenges for the next stage of development at the base of the pyramid. The first, achieving scale is not new. But it continues to be critical and difficult to achieve. Here we believe that



communications technology is essential to help operators in BOP markets achieve the efficiencies and productivity gains businesses in developed markets already feel from the extensive use of IT, and the transformational role of information provided by those services.

Secondly, there is the critical role of business to business activity in BOP markets. Many of the case studies and examples of work at the BOP until now have focused on the consumer angle. But to achieve the economic transformation of people at the BOP requires the active participation of entrepreneurs in these markets in a way which enables sustainable livelihoods.

Finally, until now, the social, economic and environmental aspects of sustainability have too often been considered in isolation. As the connections become increasingly apparent, the integration of environmental considerations and challenges into issues which have until now been focused primarily on economic and social development will be critical.

Much has been written about the fact that operating in BOP markets is anything but business as usual. I have little to add to this. Apart from thinking that the biggest opportunity here is to see the possibilities for innovation, disruption and learning as something that will ultimately be of benefit not only in BOP markets, but in developed ones too.

**Susan Morgan**

Head of CR strategy, policy and business planning  
BT Group



## About this paper

Business-to-consumer (B2C) information and communications services at the economic “base of the pyramid” (BOP) are a true success story. Innovative business models and customer-driven products in companies large and small, global and local, have generated significant revenue and profits by engaging BOP consumers. Evidence suggests that both individuals and entire economies have benefited. The BOP ICT sector has supported market growth, entrepreneurship, education, and improved quality of life; all are hallmarks of development. Success is not limited to communications alone, but is now spreading to other sectors, such as financial services, transacted over mobiles.

The experience paves the way to create business and development opportunities at scale through business-to-business (B2B), or “Enterprise ICT”, services at the BOP.

By Enterprise ICTs we mean two inter-related toolkits: first, more, and more sophisticated ICTs to help manage small and growing businesses; and, second, stronger ICT linkages between large firms and small.

The BOP represents multiple and highly variable markets comprising in total around four billion unserved, and underserved, individuals. BOP populations are found in accessible urban settings, as well as in more remote rural areas. Most observers of developing economies agree that the lack of ICT capacity is a critical development bottleneck. We are convinced, however, that even within the constraints of today’s patchwork mix of low, medium, and high bandwidth network options, creative ICT companies, can transform service provision,



value chain integration, goods distribution and data-to-knowledge transformation in vital sectors as diverse as health, food, energy, education, finance, logistics, transport, and consumer goods. The potential benefits are clear: further expansion of productivity gains; provision of vital, affordable services to all, but critically, to disadvantaged populations; building the engines of new business and job creation; and reduction in energy consumption, manufacturing waste, and emissions that contribute to climate change.<sup>1</sup>

Demographic projections show fast growth among less developed and emerging markets (and flat growth, or absolute declines, in the developed world). These emerging markets possess the greatest number of consumers, the largest labor forces, and most entrepreneurs. Yet billions of lives are blighted by lack of access to health services, and inadequate diets, poor sanitation, and antiquated agricultural practices. This we know: existing aid models, philanthropy, and charity cannot meet these demands. Rich countries and philanthropies will never provide subsidies big enough to meet the gap, nor should they. The solution requires massive collaboration to innovate new, highly productive models that can satisfy demand through the creation of vibrant local economies with healthy private sectors and functioning, equitable and inclusive markets.

Such revolutions in productivity rely on ICTs, which are acknowledged to be key enablers of productivity; they are increasingly used at the community level in social networks, to facilitate commerce, and to improve knowledge dissemination – all of which contribute



to a stronger civil society, and improve the lives of individuals. In scale business, they are indispensable operational tools.

The evidence is growing that, both financially and technologically, it is increasingly possible, not just to imagine but also realize the benefits of pervasive ICTs, and to knit them together at the enterprise level to tackle game-changing issues of climate, poverty, water, health, and food production. While the immediate climate for investment is constrained, the past decade and a half has seen a wave of investment in key “facilitating” sectors of developing economies. The ICT sector is the most obvious, but other basic infrastructure components, such as harbors, railroads, air transportation, power generation, and roads, have all seen significant investment, particular in the fast-growing economies of South and East Asia. With virtually all economists, we believe that this down cycle will end, and that BOP investments will take off again, and continue the deepening of the financial sector, and initiate a real boom in investments in education and healthcare.

The paper addresses three concerns: the benefits to business, and to low-income communities for working at the BOP; some basic approaches to the market; and several recommendations on ways to start.



## Benefits to Business: Now is the time for Enterprise ICT at the BOP

Infrastructure build-out, improving cost and revenue projections, and customer awareness and uptake – are bringing ICTs to a near-term tipping point. BOP phone market penetration trails high-income countries by only 10 years. Internet penetration in developing countries is around 15%, as compared to nearly 60% in the developed countries, but the pace of growth is so fast that, over the next two or three decades, the gap will close substantially. The cost of hardware – from mobile phones, smart phones, other handheld devices, and laptops are declining rapidly to much more affordable levels. The network infrastructure to support rapid data exchange on these devices remains a concern. “Last mile” problems in the BOP are an obstacle, but WiFi, WiMax, satellite systems, buried optical fibre, and a host of other solutions are creating medium to high bandwidth networks accessible to low-income communities. We believe that the existing – and soon-to-be-rolled-out infrastructure can support the application of Enterprise ICT solutions at the BOP.

What can these ICT solutions do? They can help enhance business models that are proving successful at the BOP. Conventional wisdom dictates that serving the BOP will demand low margins and yield profits only at high volumes, often turning non-consumers into consumers of newly-available services, a phenomenon seen in the mobile market and in many fast-moving consumer goods, such as the single-serving detergents and soap markets in India.<sup>2</sup> But, in our experience, many markets in emerging economies offer multiple variants, including attractive margins in the case of “not-yet-good-enough” services.<sup>3</sup>



Embedding ICTs in all areas of execution holds the potential to generate increasing profits through greater efficiencies and innovative delivery channels. Through conscious effort and collaboration with a variety of partners, good operating margins and inclusive development benefits can go hand in hand. At a macro level, studies also show that countries that invest in ICT see GDP grow upwards of half a percentage point or more on an annual basis.<sup>4</sup>

<sup>1</sup> ***Enterprise ICTs will make BOP value chains more productive.***

Proven BOP business models demand first and foremost, an unrelenting emphasis on price. Low per-unit margins demand a high volume of transactions, which means the activity must scale. To be successful at scale, business operations require a level of efficiency which only ICTs can provide. Many sectors – agri-business, for example – rely on extended supply chains and distribution networks that stretch into poor villages and communities. Companies in such diverse areas of economic activity as agricultural production and trade, fast-moving consumer goods, basic foods, and financial services use creative application of ICT tools to increase productivity, quality, speed of distribution, and even compliance with stricter ethical expectations. For example, in Central America, Cargill uses integrated ICTs to make supply chains for small-scale tiendas more efficient from the point-of-sale back through the distributors and manufacturers.



<sup>1</sup> ***Enterprise ICTs will make the BOP a proving ground for transformative productivity gains.***

In sector after sector, BOP markets are leading, not following. One sees this in the explosive expansion of mobile telephony in the developing world. Growth curves of the China and India markets are now the bellwethers of the entire industry worldwide. But the story is not just about the macro trends; it is also about how new customers create new uses, drive future technologies and business models, and change markets everywhere. Mobiles are a startling example of two distinct, but often related impacts: one is that the innovation drives deeper into socio-economic strata as costs drop and applications proliferate, and another is an “upwards” movement to richer market segments. The second process has been labeled “blowback.”<sup>5</sup> For example, the convergence of mobile technology and financial services has been driven, in large part, by the needs of the BOP segments of the “developing” economies (as with Vodafone/ Safaricom’s MPESA in Kenya). Provision of mobile financial services may have been designed originally to “bank the unbanked,” but the value proposition is so obvious and compelling that it is attractive to the “already banked” within developing economies and to many market segments in the “advanced” economies.

Consider health. Enterprise ICTs hold the potential to drive down the cost of medical information, diagnostic review, and supply of medicines. Entrepreneurial initiatives such as Aravind Eye Hospitals have been providing advanced eye care in India for over 30 years, utilizing Enterprise ICTs to expand access to quality health services



while radically lowering costs. New ventures, such as Proteus Biomedical takes advantage of wireless connectivity, the Internet and the low-cost microelectronics to create “intelligent medicine products.” Such products combine “pharmaceutical and device therapies with physiologic sensors and in-body computers connected to a wireless network – promising personalized care that is structurally more cost-effective than conventional approaches.”<sup>6</sup> Aravind’s innovations are moving from south to north, and Proteus’ from north to south, redefining and reshaping health delivery services in both.

<sup>1</sup> ***Enterprise ICT can meet the BOP’s green business needs.***

While BOP countries account today for only a small percentage of global carbon emissions, they will disproportionately bear the consequences of climate change. Whatever global climate deal emerges will involve extraordinary levels of financing to help developing countries address the consequences of climate adaptation, deforestation, energy production, effective use of lands for agriculture and alternative energy, and transitioning away from polluting commodities. Global enterprises will increasingly pressure extended supply chains to go green and reduce energy consumption. This represents both a valuable opportunity and important role for ICTs to play. They can contribute new, clean solutions to reduce energy consumption, resource inputs, and waste. Ambitions are vast. Cisco’s planetary skin could revolutionize the monitoring of climate issues, and support the enforcement of global climate treaties.



<sup>1</sup> ***Enterprise ICT can improve business climates and good governance.***

Well-functioning markets need rules: policing, refereeing, and oversight. Without transparent enforcement, contracts are suspect, capital dries up, and entire economies are crippled by multiple forms of rent-seeking. In too many instances, this is the story of the BOP. But there is increasing evidence that the reverse is also true: building vibrant businesses in low-income markets leads to better governance at every level: internal to the corporation, and externally at all levels of society. The ICT sector is familiar with this process on a global level: international harmonization of policies and standards are an essential ingredient to the sector's explosive growth over the past generation. ICT brings openness, transparency, and a flow of information. ICTs do not provide the whole solution set, but they do facilitate more trusting, reliable, transactions. And the demand for such transactions comes not just from companies (in order to manage their own enterprises and external relationships and transactions), but from customers, too. This isn't just a matter of protecting the "little guy." Innovations in chipsets and tracking devices, for example, can radically alter the ability of oil and gas companies to combat smuggling, or big pharma to reduce drug counterfeiting. The company Authentix for example, combines "nano-markers" with network monitoring for these purposes in the pharma, oil and gas, and consumer goods industries. Finally, ICTs help make the business climate more accountable and predictable. When companies do BOP business the "right" way, everyone benefits: the companies through increased revenues and



profits, and customers through lower prices, greater access, and higher quality (counteracting the “BOP penalty”).<sup>7</sup>

<sup>1</sup> ***Enterprise ICT make BOP collaboration more cost-effective.***

BOP Business is B2B, B2G, and “B2P”. Effective linkages to the BOP are done through partners, whether those partners are components of a multinational corporation (MNC), a local company, government agencies, civil society organizations, or, as often is the case, multi-stakeholder partnerships among some, or all of the above. In the past decade, a hybrid organization has evolved, purpose-built to address a complex, trans-boundary problem, such as malaria, or vaccination against early-childhood diseases, or HIV-AIDS. These innovative global partnerships are made up of large philanthropies, civil society organizations, the private sector, and government. Focused on the BOP, they are revolutionizing approaches to development. Partnerships revise whole systems of aid – such as radically improving delivery of life-saving treatment, or facilitating entrepreneurial opportunity through microfinance, or underwriting community-building alternative energy systems. These partnerships rely on private sector engagement not only for their resources, but also for their ability to help design and implement permanent, market-based solutions. Scaled-up solutions require systems integration. Information and data must flow from individuals, to intermediaries, to government bodies, to donors, to marketing and product managers in business. To achieve the greatest impacts, the partners must coordinate strategies, implement activities, assess results, and correct course – all without cessation of activities. ICT makes it possible to reduce



the operating expenditure, and to analyze program performance required to reach the large-scale ambitions these partnerships pursue. We call this the “B2P” (business to partnership) opportunity. Surprisingly, however, there is little focus within these global development partnerships on integrated ICT, and one can find only a relatively few examples. In Brazil, though, data acquisition and mining are used to analyze the vital needs of favelas. This removes guesswork, and reduces opportunities for misuse of aid funds. The Cities Alliance,<sup>8</sup> a multi-donor, transnational partnership is working to transfer this knowledge and application of ICT to major urban centers with large BOP populations. Much more remains to be done to maximize effectiveness of current operations and to lay down the ICT tracks that can be used “after” the start-up partnership funds run out.

<sup>1</sup> ***BOP businesses need data, which ICTs can provide.***

Good data turn a potential market into a vibrant commercial reality with a diversity of investment opportunities. Good data enable governments and donors alike to target development policies that create sustainable growth opportunities. ICTs for data collection are ubiquitous in the rich world. It’s a good bet that many companies and marketing firms know more about your health, spending preferences, and lifestyle than you likely do yourself. At the BOP ICTs have been largely absent from the picture: too expensive, and the business case has been thin. But, now, there is a virtual explosion of activity. Voxiva, for one, uses all manner of technologies, from landlines to mobile to Internet, to support data collection on disease outbreaks and to provide complex health information to and from the field.<sup>9</sup> MobileMetrix



uses mobile devices to collect and analyze market-priming data at the BOP.<sup>10</sup> Cell Bazaar is using mobile phones to create vibrant “craigslist-like” commercial activity across Bangladesh, and in the process creating a web of market data that can facilitate many other business activities.<sup>11</sup> They are pioneers in a market space that will grow exponentially more rapidly as more firms join them. These are a few, certainly not all, of the basic elements that comprise a basic business case for B2B (and B2G and B2P) ICT services.

Despite these benefits, businesses investing in the BOP are overlooking ICT systems. As more industry leaders venture into the BOP, they assume that ICT systems and processes applied in the developed world will not apply. This is a mistake. Consider the example of pharmaceutical companies, among them Pfizer and GlaxoSmithKline, who are launching initiatives to turn what has been a problem of access to medicine into an opportunity for new business generation. Creative application of ICT can do everything from reducing distribution costs to helping to make diagnosis, treatment, and government health care subsidies cost-effective.

These general notions of Enterprise ICT value can be illuminated by their application in actual business strategies, which we will briefly examine next.



## The BOP Strategy for Enterprise ICT

This paper addresses the capacity of ICTs to enable rapid beneficial change across multiple sectors of BOP economies. However, it is no accident that the ICT sector itself is both the poster child for rapid sectoral change and for success in doing business at the BOP, and we learn a great deal from the sector's experience. The linkage comes with pluses and minuses. The pace of change in ICTs means that large profit margins on new products are fleeting; product life cycles are short. No matter how innovative the new technology or service is, numerous competitors can, and often will, quickly match – and exceed – today's performance and application. As a result, there is a high premium on the ability to go rapidly to scale; size and ubiquity are prized, and projects that do not show potential to generate significant revenue will not be undertaken in large companies. In these circumstances, business decisions are particularly sensitive to market conditions and the comfort level of decision makers with particular markets. In big companies, BOP markets have been, traditionally, far away and out of mind.

At the same time, the constant advance of technology often is realized "at the fringes", in smaller companies, and in smaller markets. On the one hand, this allows for experimentation and proof-of-concept piloting. On the other hand, apart from the BRICs – Brazil, Russia, India, Indonesia, and China – and a few others, not many BOP markets are big enough (or attractive enough for other reasons) to warrant persistent, close attention. Second, the experience to date is that, no matter their size, BOP markets require patience. This is a quality in short supply in big companies in the best of times, and particularly scarce today. SMEs (small and medium size enterprises) and both large and small locally grown companies are often the sources of breakthrough business models, products, and services.





Regardless, however, of where the game-changers originate, large companies are crucial to the potential for broad impact and sustainability of operations for Enterprise ICT.

Here we address opportunities that have the capacity to scale, regardless of the size of company that undertakes them. The size of the addressable markets of the BOP, the nature of the companies that can provide solutions, and the nature of the outcomes desired all demand it. IBM, as a component of its “smarter planet” corporate branding, has designed the world community grid, demonstrating the power of networked computing to apply super-computing power across every human activity. As their website describes it, “If we can connect the systems that run our world, we can make our planet smarter: with less traffic, healthier food, cleaner water, safer cities.”<sup>12</sup>

A growing body of evidence suggests that successful companies behave in particular ways. They see, and address, the markets comprehensively, and build networked business ecosystems to support the markets. They focus on BOP consumers as serious economic actors, and create products and services that meet their (often brand-new) customers’ desires, not just needs, a critical distinction overlooked by philanthropically motivated development professionals. And finally, they are designed from the outset to generate profit, although experience of the past decade has shown that external support (delivered through government, or public-private partnership subsidy, or philanthropy) is necessary at the outset for a high percentage of opportunities, and for different reasons.<sup>13</sup>



With these factors in mind, we can offer a number of recommendations on how best to engage with BOP markets, and examples which illustrate these approaches.

### **1) Build backwards from the consumer to the enterprise**

For the ICT sector, this is perhaps the most immediate, and obvious, opportunity. Mobile telephony is already well established in most BOP markets, especially in urban and peri-urban areas; remote regions and “the last mile” are still problems, but solutions are within reach and infrastructure exists that can support Enterprise ICT applications today.

Two potential strategies stand out. The first is to improve the efficiency of services provided to the consumer. Enterprise ICTs can speed up the delivery and accuracy of distribution services. This can translate into life-saving provision of health care, delivery of education and training curricula, access to consumer goods, and expanded access to financial services.

The second is to deepen knowledge of the market and BOP customer. The B2C part of the business ecosystem for the BOP is maturing. The business case to obtain, analyze, and apply consumer data to new, and increasingly more sophisticated and integrated purposes is compelling. To be certain, companies offering B2C products and services at the BOP have developed many of the B2B support systems required for profitable operations; most, however, are naturally focused on internal operations. Few mobile operators have ventured far from basic voice and texting service for the BOP. We believe they will. When



they do, the greater levels of complexity will require stronger B2B capabilities, and enterprise level ICT to go “horizontal” – broadening the range of services, into e-commerce, e-health, e-government, and e-agriculture.

As the authors of The Next 4 Billion report and others have noted, so long as the BOP remains vague, undifferentiated business territory, firms will not venture into these domains, and market research data is thin. ICTs serving the BOP are almost uniquely qualified in the developing world to map the BOP landscape.

## **2) Support global value chains to extend further into the BOP**

In the consumer goods field, many companies have long served low-income communities; it is part of the historical heritage of such global companies as Unilever, Coca-Cola, P&G, and Nestlé. In recent years, these firms have worked strenuously to develop BOP-specific products, including localized versions of vitamin-, mineral- and nutrient-enriched foods; detergents which use less water; low-cost household water purification systems; “penny sachets” of a wide range of their offerings, and more. They have created ways to employ local women in distribution and marketing.

As innovative and effective as these efforts have proved to be, in our view the missing element is broad and sustained use of ICTs to amplify impacts. The box below compares three agriculture sector projects that touch on BOP engagement along value chains in production and distribution, with varying levels of – and potential for – Enterprise ICTs. Although only three examples, they are reasonably representative of the types of programs that dot the MNC and large company BOP landscape.



### ICTs and Agriculture in India: Three Cases

#### *BT/Cisco/OneWorld LifeLines India*

Since November 2006, this partnership, started as an exercise in corporate responsibility, has been designing and deploying an agricultural and veterinary, and now education information service built on Cisco's Unified Messaging Platform with Interactive Voice Response functionality. From any phone, a user, paying a nominal fee, can pose a question in a local language with a high likelihood that it can be recognized and answered in that same local language within 24 hours from the database of more than 200,000 frequently-asked-questions. Human experts are available to answer any question that the FAQ database cannot. Local companies have been integral to system design and implementation. The project has paid close attention to impacts, and has repeatedly surveyed users as to outcomes; they have consistently found that users report significant productivity and income gains. In 2009, the partnership is exploring how best to assure long-term business sustainability for the service. While not linked to a single company in the farming sector, LifeLines clearly has a positive impact on value chains, whether highly localized, or not.

#### *Hindustan Unilever Shakti*

These three well-regarded, and unquestionably successful, initiatives are **1)** a network of direct-to-home women entrepreneurs (Shakti Ammas) in HUL's distribution chain; **2)** the



Shakti Vani sanitation and health awareness network; and **3)** the iShakti rural community portal program. All use some IT elements – for managing operations, for dissemination of information, and for HUL’s business-building. The iShakti program utilizes a proprietary “dialogue-interactive” technology developed by Unilever. Users can access information from existing databases on topics including agriculture, health, education, and legal procedures, or pose questions that are subsequently answered by experts. The principal access points are village kiosks, but the system can also be accessed through handheld PDAs. Of the Shakti programs, the largest is home distribution system, which, at the end of 2007 (the last published figures), included 100,000+ villages across 15 Indian states, and 45,000 Ammas. The hygiene program has reached 50,000 villages, by HUL’s reckoning. According to the former head of the Shakti programs, it has scaled up to more than 10,000 villages. iShakti is characterized by the ability to work robustly in IT-constrained environments and multiple languages, and to scale both vertically and horizontally – that is, continuously to deepen its range of offerings from an up-gradable platform, and to be planted in new geographies. Income generation, information on job opportunities, BOP market research, and IT infrastructure build-out are all components of the program’s architecture.

#### *ITC e-Choupal*

E-choupals are a study in ambition and patience. The parent company, ITC, a socially-responsible diversified Indian



conglomerate, challenged its agricultural trading division, which faced stiff international competition, “to use IT to change the rules of the game,” as a business case study from the World Resources Institute put it.<sup>14</sup>

The company’s intentions were clear: be consumer-focused, be comprehensive in approach, be patient, and be transformational while, at the same time, building from experience. In mid-2003, e-choupals were serving 11,000 villages and one million farmers, impressive for a program less than five years old. In 2009, according to ITC’s e-Choupal website,<sup>15</sup> e-Choupals reach four million farmers in 40,000 villages, through more than 6,500 village sanchalaks, or community-empowered local representatives. The web access made possible by the e-choupals has created “virtual buying cooperatives,” allowed for adoption of agricultural best practices, and better risk management by farmers. Starting with a single commodity, the system now encompasses more than eight crops and aqua-products. ITC’s ambition to be “the Wal-Mart of India” is underway. ITC now has a physical retail presence, with plans for 100 modern rural marketing hubs called “Choupal Saagar” centers within a year. The stores include many farm-related services, plus medical and clinical services, food, and gasoline. Its vision of activating a two-way positive loop through IT has been largely achieved: through the web, farmers buy inputs, FMCGs, durable goods, automotive products, and banking and insurance products (accounting



for 10% of the entire national weather insurance market); and sell their farm products into the market, to ITC, and to others. The ITC vision is comprehensive, taking in ecosystem rehabilitation (forests, water, and soil), farm productivity through modern sustainable methods, creation of rural, non-farm livelihoods, and physical and institutional infrastructure for education, health, and sanitation.

None of these efforts would be nearly as successful had not ITC continuously invested heavily in, or partnered up for, rural ICT connectivity. Even before the first e-Choupal was installed, the company had an expansive vision of a customer-centric, but comprehensive e-commerce ecosystem, in which ITC would be a central player, but never a monopoly. Further, the company was, and remains, driven by its definition of the social benefit role of business: the facilitator and enabler of wealth creation not just for itself, but for its customers and partners as well.

The global textile and garments industry is another case in point. The total value of international trade in textiles and garments is around \$500 billion, and the trade in both plays a central role in many developing countries. As a recent World Bank report puts it, “The use of ICTs is no longer an optional extra for developing country manufacturers wanting to compete effectively in a global textiles and garments market where speed-to-market and price are key determinants.”<sup>16</sup> In the sector, the increasing importance of just-in-time manufacturing, low margins dictated by a high



degree of competition, and the need for coordination along the supply chain all demand “accurate and timely information flows” which can only be achieved with ICTs. More specifically, only Enterprise ICTs can deliver the full range of modern requirements for market success – computer-aided design and virtual prototyping, electronic resource planning, electronic data interchange, integrated supply chains, virtual tracking along the distribution chain, and vendor managed inventory.

### **3) Provide the ICT backbone for multi-sector partnerships (MSPs)**

Starting in April 2009, with the emergence of the AH1N1 flu virus as a looming threat, the world has witnessed a real-time drama illustrating the need for Enterprise ICTs as they relate to world health. While only 79 deaths and 9830 cases in 33 countries had been confirmed as of May 19 2009, a fraction of the usual hundreds of millions of cases and half-million annual deaths from standard influenzas, the mere potential for a pandemic cast a deep shadow on the world economy shutting down schools in numerous countries; nearly paralyzing one country, Mexico; choking off international travel (particularly in already hard hit developing countries); and generally intensifying a global recession by further contracting economic activity. Whether this virus actually results in a substantial number of fatalities remains to be seen. What is not in question is that the world faces a host of proven killer diseases, and ICTs are central to their monitoring, treatment, and eradication. The UN Global Alliance on Infectious Diseases (UNGAID) puts it this way: “The use of ICT for health, or e-health, is fundamental in health care delivery and public health



practice. It has particular value in responding to shared global health challenges such as emerging epidemics or the health consequences of natural disasters. It is well documented that ICT is sorely lacking in countries that need it most: those countries most vulnerable to threats from diseases, disasters and poverty. Numerous country projects show the potential for improving use of ICT in public health, but the ability to plan and implement eHealth on a large scale, while adapting it to local health problems, presents a huge challenge particularly in countries in conflict and transition. Beyond the technology and financial challenges, countries need support in policy, priority setting and governance of ICT partnerships, which can be designed to benefit more than one sector.<sup>17</sup>

Global MSPs are a logical market for Enterprise ICTs. They are large; they are well funded; they deal with complex problems in dispersed and often remote geographies. Importantly, they are supported by highly sophisticated organizations, most of which are fully aware of, and engaged in, activities to facilitate “digital dividends” in other economic sectors, whether agriculture, or education, or financial services. That these organizations have not yet applied ICTs, at scale, to their disease programs, is something of a mystery. The need is obvious, and the circumstances for application of Enterprise ICTs are ideal.

Such efforts are underway, in various pockets. For example, the World Health Organization is creating an electronic atlas of communicable diseases, gathering together in a single platform all available data, harmonizing and analyzing them, and deepening



the data evaluation with demographic, socioeconomic, and environmental factors. The WHO atlas is a “perfect fit” with the work of the global alliances, as it will cover all the major BOP diseases: malaria, HIV/AIDS, and tuberculosis, as well as most of the widespread tropical diseases, and the epidemic illnesses which so often accompany natural disasters, such as cholera.<sup>18</sup> The atlas will be no better than the data which populates it. Its accuracy, timeliness, and utility are entirely data-dependent, and the data will be no better, or worse, than the tools that are employed to collect them, and the capabilities of those responsible for managing the system. Enterprise ICTs are central, therefore, to the project’s success.

In addition, the United Nations Foundation and Vodafone Foundation are together ramping up an effort to develop a roadmap and global partnerships to support emerging digital technologies to improve public health. Their report, *m-Health for Development* outlines strategies and technologies that can be deployed now.<sup>19</sup> In yet another collaborative effort, the Rockefeller Foundation and many partners, are taking the issue even further, exploring transformational changes in health systems with particular attention to eHealth standards and protocols for digital management of health data.<sup>20</sup>

Yet another MSP, comprised of 180 large healthcare and technology companies, the Continua Health Alliance, is a non-profit, open industry organization “dedicated to establishing a system of interoperable personal health solutions.”<sup>21</sup> The partnership includes many of the largest pharmaceutical



companies, medical device manufacturers, and the firms providing technology to the ICT sector. While its target geographies are the advanced industrial countries, the solutions that may emerge from the collaboration will either migrate to the developing economies, or, potentially, be adopted in the BRICs before they are able to be implemented in the crowded, and contentious, healthcare systems of the advanced economies.

These, and the many other similar efforts not mentioned here lead us to believe that the era of hyper-focus on specific diseases may be nearing its apogee, and that these more broadly scoped efforts will be central to future work of the disease-based PPPs and form, as well, the basis for meaningful Enterprise ICT application.



# Recommendations & Conclusion

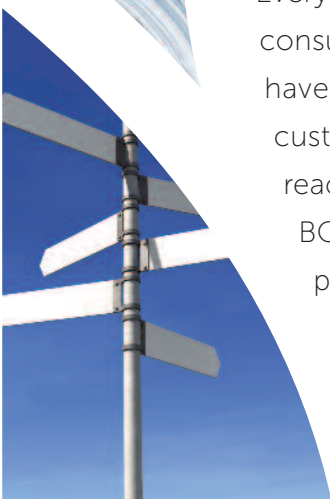
Companies face significant challenges when they try to engage in new activities, especially when such activities are directed toward markets with little disposable income, and are in places without strong institutional support systems to make doing business predictable. Even recognizing these constraints, there are practical steps that companies can take. In our view, the recommendations which follow have certain virtues, as they:

- 1 Build on core activities, competencies, and relationships
- 1 Enlarge the “catchment” area for opportunities
- 1 Spread risk broadly
- 1 Open the firm to multiple new ideas and approaches
- 1 Expand the firm’s utility within their extant business ecosystem

We offer, then, three specific ways companies might explore this terrain.

## 1) Fish where the fish are biting

Every company has its universe of relationships. Whether you are in a consumer-facing business, or are working mostly with other businesses, you have customers. And they have customers. And, the customers have customers. Unless you are selling Ferraris, somewhere down the line you reach low-income markets. Those companies that are already advancing a BOP initiative or full-scale strategy can benefit from application of Enterprise ICTs. Those providing Enterprise ICT services have an opportunity to forge new and deeper relationships, potentially starting as small scale experiments, that can growth into large scale mutually profitable partnerships. That said, the authors have worked with many large companies throughout the world. Almost universally,





they have only a superficial understanding of how their products or services might benefit, or be made accessible, at the BOP. Since most of the “good” examples of BOP business are B2C, companies usually believe that it’s a requirement that they be B2C as well. That the firm’s offerings are, or are not, consumer facing is irrelevant. So, too, are the immediate negative responses: Too expensive. No distribution. Too complicated. Not profitable.

An internal audit aided by the perspective of those who have worked on this issue with firms, is a good first step. But, it is just a first step. Necessary corollaries are, first, to define and document existing (and potential) BOP applications; and, second, to empower appropriate employees – business relationship managers in most cases – with that knowledge. This leads to the second recommendation.

## **2) Find new fishing holes, with your customers**

In flush times, or lean, a company that doesn’t add value to its customers will not be a supplier for long. BOP markets are the future. Evidence is mounting that companies that wait for the market to come to them will be too late. The landscape will be crowded. In the BOP space, patience and perseverance are rewarded; spreading risk can create that space. Your customers, if not you yourself, can only benefit if present and active. And your newly BOP-educated business managers will be ideally positioned to co-create value propositions. Almost invariably in such situations, the process of collaboration itself will result in innovations that neither firm (or group of companies) would have imagined separately.



### **3) Lead, don't follow**

The world confronts a set of demographic and environmental trends that hold the potential to be game-changing. These are well-known, from climate change, to population booms in poor countries, to increasing risks of health pandemics, to water scarcity, to conflicts. Game changing issues create global impacts. Their ground-zeros often reside at the BOP. There is no alternative but for a mix of public and private actors to find solutions. Those that do will not only deliver a remarkable and lasting service to the world, but will very likely be rewarded handsomely for it. Whatever solutions emerge, they will require the ability to acquire and analyze large amounts of data, share knowledge immediately, and deliver solutions consistently and precisely and on time through extended value chains. Enterprise ICTs will serve as a necessary element of these solutions. The opportunity exists today to take leadership to start innovating game-changing solutions.

We believe that the thickening and deepening of the web of business relationships, starting with and building on existing B2B relationships, will inexorably push Enterprise ICTs down toward the BOP.

The challenge is not merely defined by corporate responsibility or moral imperative, but rather by the smart pursuit of business opportunities. Considering Enterprise ICT as the province of wealthier countries both excludes BOP regions from valuable development opportunities and robs shareholders of both near and longer term growth opportunities. Those who today trumpet the power of networked ICT boast of their capability to change the world. The BOP represents an overdue opportunity to do just that.



## Footnotes

- 1 With some modest exceptions, this article focuses principally on B2B services in the private sector; however, it should be kept in mind that in developing economies, the largest and most “accessible” market for ICT firms may, in fact, be the public sector. Most, if not all, of the value propositions to be described in the following paragraphs apply with equal value to the public sector, with appropriate adaptation. A growing segment of the development community argues forcefully for government as a *consumer* of ICT services, and not the *owner*, as a matter of speed of deployment, efficiency in operations, and overall cost value.
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- 4 Patrick Bongo, *The Impact of ICT on Economic Growth*, available at [129.3.20.41/eps/dev/papers/0501/0501008.pdf](http://129.3.20.41/eps/dev/papers/0501/0501008.pdf) , and the various studies referenced therein.
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- 9 [www.voxiva.org](http://www.voxiva.org)
- 10 [www.mobilemetrix.org](http://www.mobilemetrix.org)
- 11 [www.cellbazaar.com](http://www.cellbazaar.com)



- 12 [www.worldcommunitygrid.org](http://www.worldcommunitygrid.org) and [www.ibm.com/ibm/ideasfromibm/us/smartplanet](http://www.ibm.com/ibm/ideasfromibm/us/smartplanet)
- 13 These characteristics were hypothesized early in the BOP literature, but are now more fully elaborated in Ashish Karamchandani et al, *Emerging Markets, Emerging Models: Market-based solutions to the challenges of global poverty*; Monitor Group, 2009. Available at [www.mim.monitor.com](http://www.mim.monitor.com)
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- 15 [www.itcportal.com/rural-development/echoupal.htm](http://www.itcportal.com/rural-development/echoupal.htm)
- 16 Kerry McNamara, editor. *The Global Textile and Garments Industry: The Role of Information and Communication Technologies (ICTS) in Exploiting the Value Chain*; infoDev, Washington DC, 2008. Available at <http://infodev.org/en/Publication.582.html>.
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- 19 [www.unfoundation.org/press-center/publications/mhealth-for-development-1.html](http://www.unfoundation.org/press-center/publications/mhealth-for-development-1.html)
- 20 <http://ehealth-connection.org/>.
- 21 [www.continuaalliance.org/about-the-alliance.html](http://www.continuaalliance.org/about-the-alliance.html)



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The economy-driving role of information and communications technology (ICT) firms – large and small, national and global – is growing larger in these early decades of the 21st century, and the potential for impacts is expanding right along with it. This paper looks in particular at the role ICTs have played in serving low-income (base of the pyramid, or BOP) communities over the past decade, and draws some lessons from this broad record of experience with regard to ICTs and future growth prospects, both for the firms themselves and for the economies they serve. Evidence suggests that the time is now ripe for achieving both business and development goals, utilizing what the paper calls “enterprise ICTs” – tools to help small firms to grow bigger more rapidly, and tools to link firms of all sizes more efficiently.

**Author**



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