Design Tools for Base of the Pyramid Strategies

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In the recent remapping of global economies and trade flows, China and India have emerged as formidable economic forces, not only as capable providers of products and services but also as nations of consumers with an increasing appetite for goods and the means to buy them. The governments in these nations are making significant economic reforms to spur rapid growth, and this has resulted in three key developments. One, the manufacturing of consumer goods (toys, white goods, electronics, etc.) and the provision of services (call centers, software development, etc.) have largely shifted to China, India, and a few other Southeast Asian countries. Two, multinational corporations (MNCs) are keen on creating new products and services for growing and wealthier middle classes in these countries. Three, a few large local companies in these rapidly developing economies (RDEs) have built sufficient buying capacity through outsourcing and other successes to start acquiring corporations in the West. These developments are changing the socioeconomics not only in India and China, but also all over the world.

The Changing Face of the Global Marketplace

In 1991 the Indian government initiated major economic-policy reforms seeking to attract MNCs to invest in its market. Indeed, such corporations as Intel, Philips, Samsung, Vodaphone, and BP are setting up shop in India's metropolitan cities, hoping to tap an emerging market made up of a very large population, totaling 1.13 billion, eager for goods and services. In addition to the increased presence of MNCs, large Indian corporations with significant capital resources are expanding their consumer offerings to include everything from fresh produce to financial services.

Statistics highlighting India's speedy growth, bulging middle classes, and manufacturing and service industry capabilities have flooded newspapers, books, and business journals worldwide. There is no longer any question of whether India will become a financial giant; the question is how quickly it will happen. In 2005, in a speech at the 30th anniversary of the US-India Business Council, Commerce and Industry Minister Kamal Nath said, "We no longer discuss the future of India: We say the future is India" [1].

Western MNCs are toppling over each other to invest in India, while Indian corporations are vying for Western markets. As India's Tata Motors introduces its brand-new $2,500 Nano under a global spotlight, automobile manufacturers are struggling with sales worldwide; as Indian graduates continue to seek education and jobs in the U.S., American MBA students are turning away from Wall Street for internship opportunities in India. While these forms of rapid economic growth are widely lauded in the financial world, what kinds of impacts will they have on Indian society, its many cultures, socioeconomic systems, and environment? Is this form of growth sustainable, and will it help all segments of the Indian population—the wealthy, poor, and everyone in between?

These new global conditions have led to mixed reactions from the Western world: Fear of being deposed as economic drivers of the world, amazement at the sheer magnitude of growth, and eagerness of reaching new markets are typically the predominant responses. Large MNCs have quickly mobilized resources to take advantage of these new developments to establish operations in the poorer nations and

[1] Buncombe, A. "India at 60: Special Report." *The Independent*, 10 August 2007; http://www.independent.co.uk/news/world/asia/india-at-60-special-report-460994.html/

several small to medium enterprises (SMEs) are following suit. Success does not come easy, though. Corporations need to invest heavily in R&D, understand complex local contexts, deploy appropriate technologies, and build trust. None of these tasks is trivial, but they are all critical for establishing a foothold in these nations.

The Bottom/Base of the Pyramid Theory

While there is a growing middle class in India, it is not just this group of potential consumers that has attracted attention. Books such as C.K. Prahalad's *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits* suggest that India's poor also have buying power and that it is possible for companies to sell products to them while making a profit [2]. (In recent literature, the more positive-sounding "base of the pyramid" is replacing "bottom of the pyramid" to suggest a starting line or a fundamental component of something rather than its lowest level or underside.) Prahalad recommends we consider the world's poor as a large latent market. "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" [2]. In a 2002 article, Prahalad and Hart explained the economic pyramid of the world is built up of four tiers [3]. The top tier represents the richer nations, with 75–100 million people whose purchasing-power parity is more than $20,000, while the bottom tier represents four

billion people with purchasing-power parity of less than $1,500. This latter group survives on less than $2 a day; three-quarters of them live in Brazil, China, India, Indonesia, Mexico, Russia, South Africa, Thailand, and Turkey. They have latent purchasing power, a force, according to the authors, that can be tapped with mutual benefit to the poor and the private sector.

This new business model rests on three suppositions: One, the BOP (base of the pyramid) does actually represent a latent market, and the world's poor can be transformed into consumers, eradicating poverty through appropriate business development; two, the BOP presents new opportunities for growth and innovation; and three, the BOP becomes a key target market for firms rather than a recipient of charity or corporate social responsibility (CSR) funds.

Prahalad lists 12 specific principles of innovation that have to be considered for BOP markets and offers suggestions that corporations can adopt to be successful. The following list is summarized from a longer discussion that appears in the book [2].

• Products and services in this market have to demonstrate superior price performance.

• Products and services have to appropriately incorporate emerging technologies and practices into existing ones.

• Corporations have to rethink the notion of scale: these markets are large, and they bring a set of unique challenges that are uniquely local.

• All resources have to be wisely used with a focus on minimizing waste.

• Both function and form have to be actively and accurately considered in the design of products. As contexts of use are different; Western models often do not succeed in BOP markets.

• Product innovation has to be accompanied by process and service innovation, which may utilize existing infrastructures

[2] Prahalad, C. *The Fortune At The Bottom Of The Pyramid: Eradicating Poverty Through Profits*. Upper Saddle River, NJ: Wharton School Publishing, 2010.

[3] Prahalad, C. and Hart, S. "The Fortune At The Bottom Of The Pyramid." *Strategy+Business,* 26 (2002): 2-14.

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or signal the need to develop new ones.

• The labor force is largely unskilled or semi-skilled, a factor that has to be taken into account when new manufacturing facilities are set up.

• As in any new market, customer education is central to the success of goods and services.

However, in BOP markets, traditional channels of television and print advertising may not always be available.

• It is often significantly more challenging to design products for BOP markets due to environmental conditions such as heat, noise, and dust, as well as uneven infrastructural conditions of power supply, water supply, etc.

• Interface design should take into account the specific needs of populations with varying levels of literacy and variations in language use.

• Urban and rural markets may not be easy to reach due to challenges of geography and

[4] Landrum, N. May 21. "Advancing the 'Base of the Pyramid' Debate." *Strategic Management Review* 1,1 (2007); http://www.strategic-managementreview.com/ojs/index.php/smr/article/view/12/18

[5] Karnani, A. "The Mirage Of Marketing To The Bottom Of The Pyramid: How The Private Sector Can Help Alleviate Poverty." *California Management Review* 49, 4 (2007): 90-111.

[6] Burke, K. *Permanence and Change: An Anatomy of Purpose.* Berkeley, CA: University of California Press, 1984.

density, and distribution networks will need to be robust enough to handle both.

• Rapid updates to product features and functions are often necessary, and therefore platform solutions that allow for quick design changes may be necessary.

While the goal of eradicating poverty has tremendous merit, there has been growing concern that BOP strategies may be somewhat misguided and may not produce the results they promise. Landrum offers an overview of some of the critiques of Prahalad's arguments, citing several authors and their reservations about the BOP strategy [4]. Central to these concerns is the assumption that converting the poor into consumers will somehow eradicate poverty. Higher rates and volumes of consumption of goods made available by MNCs do not necessarily translate into reduced poverty. Karnani, who refers to the fortune at the bottom of the pyramid as a mirage, suggests a different strategy. "Rather than viewing the poor primarily as consumers, an alternative approach is to focus on the poor as producers and to emphasize buying from the poor. The only way to alleviate poverty is to raise the real income of the poor" [5]. In addition, several authors question the size of the BOP market (which Prahalad estimates at four billion), pointing out that it is in fact much smaller, with much lower purchasing power. In other words, there may be no fortune to be made. Aneel Karnani also questions whether MNCs are best suited for this task, as BOP markets do not

involve economies of scale; he suggests that SMEs might more appropriately handle this challenge [5]. In addition, Landrum warns of a Western, ethnocentric approach that focuses on ideals of success and development, which may not necessarily be suitable for other parts of the world [4]. These issues raise doubts about the viability of Prahalad's model of "eradicating poverty through profits."

India Today

The fast-growing Indian economy inspires as much awe as it does doubt. The awe may be attributed to the scale of demand and the speed of growth, while the doubt to the evident chaos in everyday life and the seemingly irreconcilable contradictions. India is urban and rural, rich and poor, educated and illiterate. The past and the present are simultaneously visible and continue to cohabitate in people's homes and in the streets. While guarding its traditional roots, India also embraces new technology. Such a dialectic may be perceived as paradoxical, but it in fact represents a kind of hybridity that is not uncommon. Understanding how Indians negotiate these conditions in everyday life can be critical to operating in this vast subcontinent.

The Indian market is by no means singular, unified, or cohesive. Indeed, one may argue that no market ever is, but diversity, fragmentation, and divisions are probably more keenly manifested in India. It is also important to recognize that the polarities of rural and urban or rich and poor lie on a continuum, with several hybrid

models scattered between them. The terms "semi-urban," "developed rural," "close to urban" and "ural" are just a few that refer to the shades of gray between the black and the white. Perhaps a vision that makes more sense and is closer to the reality on the ground is "India as composition of many Indias." For instance, the city of Pune in the state of Maharashtra in western India, boasts a young and hip crowd with growing special economic zones, IT parks, malls, and McDonald's restaurants. A quick road trip in the city also reveals bottlenecked traffic and severe pollution, as well as slow and endless construction. Successful farmers markets, thriving local entrepreneurship, and historically significant traditions survive in this environment with grocery chains and malls. It is not uncommon in India to find islands of contrasting socioeconomic development coexisting in near vicinity. The fact that these contradictions cannot be reconciled into one comprehensible whole does lead to confusion.

Perhaps this may be understood better through Kenneth Burke's "perspective by incongruity," a notion that finds meaning in the simultaneous and close juxtaposition of seemingly opposing viewpoints [6]. In other words, it is the very presence of the contradicting ideas that gives rise to a new meaning, a new way of understanding the world. Such a metaphor is potentially the best means by which to make sense of what is India.

What Can Design Do?

Since the publication of Prahalad's book, the BOP market has gained significant atten-

tion, and corporations across the world are developing strategic plans to capitalize on its promise. However, it is evident from the critiques above that the strategy has certain flaws that need to be addressed if it is to offer any form of relief to the poor. As global businesses pursue this strategy of creating new markets at the BOP, it is critical that they address the true needs of "consumers" in this group. MNCs interested in the Indian market's profit potential are establishing research groups to better understand people's needs and means, aspirations and lifestyles, demographics and statistics. Ambitious business plans with growth strategies are being discussed in boardrooms. Pilot programs, dubbed "innovation strategies," are being launched to sell consumer goods designed for the BOP. But if these are not created in response to and in view of the context within which this consumer group exists, the results may not meet expectations. Many programs designed with the best intentions are not as successful as expected due to fundamental flaws in perspective. Excessive corporate desire, poor research insights, lack of local perspective, and unfamiliarity with the consumer are a few of the reasons for these failures.

If MNCs are destined to enter this space, can design intervene and help guide the outcomes for positive impact? Perhaps design's tools-of-the-trade, if appropriately brought to bear on this problem, might assist all the stakeholders achieve their goals. Through "designerly ways of knowing, acting and thinking" [7], human-centered research, an emphasis on local context,

systems thinking, and other strategies, it is possible to create true value for this segment of the human population. However, this requires a serious commitment from corporations who are keen on establishing a presence in emerging markets such as India. When done well, design serves as an effective facilitator and mediator between the needs of people and the capabilities of organizations. Designers can assist stakeholder engagement in systems thinking by focusing not only on specific artifacts but also on the entire product-service systems. Design's emphasis on the total consumer experience might guide corporations in committing to the creation of long-lasting (holistic and systemic) value, rather than providing short-term, incomplete (product-only) solutions.

Very often, governments and corporations expect to find success in the power of high-tech solutions, regardless of appropriateness or acceptability. Instead of struggling with the issue of low-tech devices versus high-tech devices, companies will need to carefully examine the context and recommend the most appropriate technology. Appropriate technology takes into account the social, cultural, economic, ethical, and environmental contexts of the location for which designs are being created. These solutions often have a higher chance of being accepted easily by communities, they may require lower capital investments, they are often easier to maintain, and they are therefore generally more sustainable.

Sometimes emerging markets leapfrog through technologies, skipping more expected evolu-

tionary steps in the process. For instance, until the year 2000 there were 34.7 million landline connections and 3.6 million mobile phone users in India. Since then, mobile phone usage has ballooned in urban and rural areas, even in cases where there may be little or no access to electricity. According to the Telecom Regulatory Authority of India (TRAI), by July 2010 the mobile phone subscriber base had reached 652.42 million, whereas landline subscription had dropped to 35.6 million. By 2012 India's projected teledensity is estimated to reach 1 billion, or 84 percent of its population [8].

In 1998 the government of India launched a project called the Warana Wired Village Project in a rural district where a sugarcane cooperative serves approximately 70,000 farmers across 75 villages. More than 50 computer kiosks were established in this entire region to connect 40,000 farmers across a network of villages at a cost of 2.5 crore Indian Rupees (US$ 500,000) [9]. This project, while successful in many ways, also had problems. The original goals were to provide Internet access to farmers who would then check market prices and utilize crop information to competitively sell their produce at the best price. A Microsoft Research India team, in conjunction with researchers from the University of Berkeley and the London School of Economics, undertook a large scale ethnographic research project aimed at understanding local conditions and patterns of use of these kiosks. They surveyed 300 kiosks, interviewed 100 kiosk operators, conducted participant observation of 30 kiosks in use, and

[7] Cross, N. "Designerly Ways of Knowing: Design Discipline versus Design Science." *Design Issues*, 17, 3 (2001): 49-55.

[8] Telecom Regulatory Authority of India. Press Release, 7 September 2010; http://www.trai.gov.in/WriteReadData/trai/upload/PressReleases/756/pr7sep.pdf/

[9] Toyama, K. et al. "Research on Rural PC Kiosks" 3 June 2007; http://research.microsoft.com/en-us/um/india/projects/ruralkiosks/

used several other ethnographic research techniques [9], only to discover that due to intermittent access to electricity, lack of technological familiarity, tough rural conditions, and high costs of maintenance the kiosks were not used for the proposed purposes. Instead the cooperative had started to use the kiosks for remote book-keeping.

As a response Microsoft launched a pilot program, appropriately termed Warana Unwired and introduced the mobile phone as a data communication device into the system. Farmers could now use mobile phones to access agricultural pricing information and other data without having to go to a kiosk. The system was accessible from anywhere at any time of day or night. Mobile phones were familiar devices to the farmers and were therefore perceived as being much more accessible than the kiosk computers. The Microsoft team estimated a saving of more than one million Indian Rupees (US$22,000) per year if the cooperative adopted this system [9]. This solution of leapfrogging and appropriate technology demonstrates that in-depth ethnographic research is critical for success.

Corporations will need to recognize that for any solution to be adopted and diffused by a social group, it will need to be localized to suit a set of cultural experiences unique to that group. In other words, satisfactory experiences in a certain geocultural situation may entirely fail in others, and local knowledge will be critical for success. Culturally appropriate design that relies on a classic notion of goodness rather than a trendy notion of fashion might have better acceptability

[10] Eames, R and Eames, C. (2008), *The India Report*, http://homepage.mac.com/ranjanmp/.Public/Eames_IndiaReport.pdf/

and durability in these situations. Though this may seem at once obvious and simplistic, enduring designs are those that embody the aesthetic and cultural values of contexts for which they are designed. "Of all the objects we have seen and admired during our visit to India, the *lota*, that simple vessel of everyday use, stands out as perhaps the greatest, the most beautiful. The village women have a process which, with the use of tamarind and ash, each day turns this brass into gold" [10]. This quote from "The India Report" by Ray and Charles Eames exemplifies the classic success of good design. Recreating the timeless design of a lota might be a difficult challenge, but certainly not an impractical goal. The traditional, qualitative tools of design research such as field observations, in-depth interviews, role playing, shadowing, etc., can help in the development of the kind of insights critical to understanding context.

Conclusion

As the rush to capitalize on all the (real or exaggerated) wealth that appears to reside at the BOP picks up momentum, there will be several successful corporations and a large number of casualties. A sustained interest in the BOP market, genuine desire to change lives of the poor, commitment to sustainability, and a good design sense will be the landmarks of companies that prevail. Understanding emerging markets will require higher R&D efforts, careful scrutiny of failed as well as successful projects, and an active presence on the ground. It will be critical for MNCs to establish goals

outlined by the triple bottom line of sustainable development: economic prosperity, environmental responsibility, and social equity. Design's tools can certainly help shape this in a way that truly benefits people, society, and the environment.

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