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Innovation's Holy Grail

by C.K. Prahalad and R.A. Mashelkar

Included with this full-text *Harvard Business Review* article:

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Idea in Brief

Affordability and sustainability are replacing premium pricing and abundance as innovation's drivers, but few executives know how to cope with the shift. Companies must make their offerings accessible to a greater number of people by selling them cheaply and must develop more products and services with fewer resources.

Westerners are struggling to tackle this challenge, but some enterprises in developing countries, particularly in India, are showing the way by practicing three types of "Gandhian innovation":

- disrupting business models
- modifying organizational capabilities
- creating or sourcing new capabilities

Companies anywhere in the world can follow suit by striving for inclusive growth, establishing a clear vision, setting stretch targets, exercising entrepreneurial creativity within constraints, and focusing on people, not just profits or shareholder wealth.

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Innovation, after vanishing from corporate priorities during the recent recession, is slowly making its way back onto to-do lists in corner offices. In most companies, though, the innovation process is coughing and sputtering like a rusty old engine. Not unlike internal combustion, traditional innovation is heading for obsolescence—because parameters have completely changed—and it will take unsuspecting organizations with it.

Most innovation programs are built on the assumptions of affluence and abundance. The more, the better. Striving for bigger margins is B School 101. However, we see shaken consumers in the United States and Europe asking for inexpensive or value-for-money products and services. We see billions of first-time consumers in China and India—where economic growth is surging and 2 billion to 3 billion people will join the middle class in the next decade—who can afford only the cheapest offerings. We see the rich and the young in both the developed and the developing worlds demanding environment-friendly products and services. Affordability and sustainability, not premium pricing and abundance, should drive innovation today.

Companies can respond to the challenge by developing strategies that allow them to create more products with fewer resources and sell them cheaply. The search for lower manufacturing costs and fresh sources of talent will increase pressure on them to globalize, leading to more-complex knowledge chains, supply chains, and cross-border interdependencies. At the same time, the new processes will make products and services accessible to a greater number of consumers the world over. Learning to do more with less for more people, we believe, should be the innovator's dream.

While this undertaking is proving to be a nightmare for many Western companies, our research suggests that a few pioneers in developing countries are showing the way. They design inexpensive products and manufacture them with so little capital and on a scale so vast that their prices—1 cent for a one-minute telephone call, $30 for cataract surgery, $2,000 for

a car—are, by an order of magnitude, the lowest in the world. Faced with shortages of capital, technology, and talent, audacious entrepreneurs in emerging markets have had no choice but to overturn accepted wisdom. A potent combination of constraints and ambitions has ignited a new genre of innovation.

Nowhere is this more evident than in India, which was not exactly famous for innovation until recently. Indians used to joke that it was prophetic that a local mathematician had arguably, around 500 AD, invented the number zero—because that was how many innovations Indians developed thereafter. No longer can anyone say that. Smart Indian companies have come up with new technologies and radical business models to penetrate the country's mass markets. They have done this by transforming almost every element of the value chain, from supply-chain management to recruitment, and creating novel business ecosystems.

Some describe this phenomenon as an extension of the Indian tradition of *jugaad:* developing alternatives, improvisations, and make-dos to overcome a lack of resources and solve seemingly insoluble problems. However, the term "jugaad" has the connotation of compromising on quality. We prefer "Gandhian innovation," because at the core of this type of innovation lie two of the Mahatma's tenets: "I would prize every invention of science made for the benefit of all," and "Earth provides enough to satisfy every man's need, but not every man's greed." Affordability and sustainability were Gandhi's touchstones six decades ago, and Indian companies have recently discovered their power.

In the following pages, we will describe the factors that led to this genre of innovation in India, unveil a framework that will help executives understand this approach, and present some ideas that will allow companies everywhere to develop Gandhian innovations.

Three Kinds of Gandhian Innovation

Over the past three years, we have studied how Indian companies and organizations innovate, often backed by the government. Some are established companies, and others are start-ups. They aren't confined to a few industries; they run the gamut of manufacturing and services—automobile manufacturing, drug development, health care, leather finish-ing, mobile communications, oil drilling, retailing, supercomputing, water purification, wind energy—and cover a range of capital and labor intensities. The only common link is that they're all radically innovative.

When we devised a framework to help other enterprises innovate along similar lines, we found that two variables merit analysis. One is, of course, the source of the technologies involved. They can be bought; adapted or synthesized in a fresh way; or built ab initio. The other key factor is the organization's capabilities, by which we mean the competencies, knowledge, and skills that the company must apply in order to be successful. At one end of this spectrum, companies can disrupt business models by using existing capabilities but at a lower cost. At the other, they can create entirely new capabilities. Those in the middle modify capabilities. (See the exhibit "Innovations in India.") The two-way classification, we find, leads to three types of Gandhian innovation.

Disrupting business models. Several Indian companies have used Western technologies but created business models that have completely altered an industry's economics. For instance, IT-based software and service providers such as Satyam, Wipro, Infosys, TCS, and HCL use off-the-shelf hardware, but they deploy new talent-based business models to be globally competitive. They have crafted methodologies for partitioning work so that much of it can be done off-site, which allows them to enjoy the lower costs of talented engineers in India. Outsourcers worldwide account for only about 6% of the global software business, but they have changed the industry's dynamics. (Indian outsourcers have also added new capabilities over the years—first offering lower costs, then creating better-quality processes. They are now trying to provide novel end-to-end business solutions.)

Modifying organizational capabilities. Other Indian companies have synthesized several technologies and, as a result, altered their capabilities—such as design skills or speedy deployment of resources on a large scale. For example, in 2007, Computational Research Laboratories (CRL), part of the Tata Group, developed the world's fourth-fastest and Asia's fastest supercomputer, Eka, by coming up with a whole new design using standard components. (Eka was the world's 26th-fastest su-

C.K. Prahalad was the Paul and Ruth McCracken Distinguished University Professor of Strategy at the University of Michigan's Ross School of Business. He wrote this article, his 16th for HBR, before he passed away on April 16, 2010. **R.A. Mashelkar** is a CSIR Bhatnagar Fellow at the National Chemical Laboratory in Pune, India, and a former director general of India's Council of Scientific and Industrial Research. He serves on the boards of Reliance Industries and Tata Motors, one of the companies cited in this article.

percomputer as of November 2009.) CRL engineers created a near-circular layout for the computing core, instead of alternating hot and cold aisles, and used off-the-shelf servers, dual data-rate fiber optic technology, and the Linux operating system—all supercomputing firsts. This reduced the cost of developing the machine to just $20 million. Moreover, the cost of the cooling equipment is 50% lower than it is for other supercomputers, and the operating cost is 20% lower. Incidentally, CRL is one of the first organizations to offer supercomputing as a service; 40 companies, such as Boeing and Tata Motors, rent Eka's services every year. CRL is now working on an Eka++ project to increase the supercomputer's processing power fivefold.

Creating or sourcing new capabilities. Indian entrepreneurs have focused not only on building disruptive business models and honing existing capabilities but also on creating or acquiring new capabilities to solve problems, which often requires technology development or a collaborative approach to obtaining technical expertise. That's how Tata Motors came up with the $2,000 Nano car. It worked with several multinational and Indian companies to make components that would fit its specifications: Tata turned to Germany's Bosch for a new engine-management system; Italy's I.DE.A. Institute and Trilix for styling and exterior design; India's Sona Koyo for lightweight steering shafts; America's Johnson Controls for the seating system; Japan's Toyo for the engine-cooling module; Germany's Behr for the heating, ventilating, and air-conditioning system; and India's Madras Rubber Factory for tougher-than-normal rear tires.

The three kinds of Gandhian innovation defy the traditional innovation categories: product, process, packaging, and pricing. They tackle all those areas in new ways at the same time, rendering irrelevant the discrete categories into which many executives pigeonhole innovations, as we shall show next.
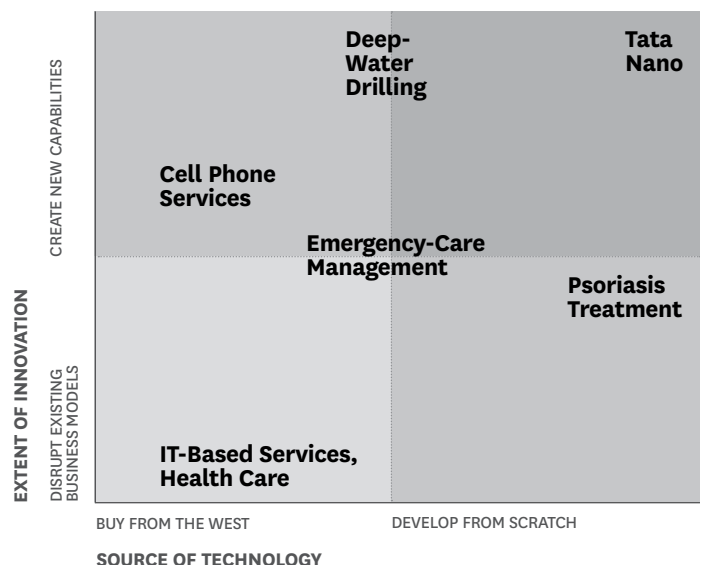
Innovations That Change Business Dynamics

After India opened up to foreign investment and technologies, in 1991, some companies altered the economics of fledgling industries not by developing state-of-the-art technologies but by creating new business models. They set inexpensive price performance points and changed the way consumers could access offerings. Some products and services needed a new infrastructure for development and delivery, so these companies also built unique innovation ecosystems.

Perhaps the most striking illustration of this type of innovator is Bharti Airtel, which won a government tender in 1995 to launch mobile telecommunication services in Delhi. Like its rivals, the company had to pay the government a huge sum of money for the spectrum license and invest heavily in towers, telecom networks, and support systems such as billing and customer care centers. Partly because of these

Innovations in India

Gandhian innovators solve problems in two key ways: by acquiring or developing technologies and by altering business models or capabilities. In India, IT-based software and service providers used off-the-shelf hardware from the West but devised new ways of organizing work. Tata Motors focused on technology as well as capabilities when it set out to create the world's cheapest car: It worked with several companies to develop components that would fit the Nano's specifications.

EXTENT OF INNOVATION — CREATE NEW CAPABILITIES / DISRUPT EXISTING BUSINESS MODELS

SOURCE OF TECHNOLOGY — BUY FROM THE WEST / DEVELOP FROM SCRATCH

- Deep-Water Drilling
- Tata Nano
- Cell Phone Services
- Emergency-Care Management
- Psoriasis Treatment
- IT-Based Services, Health Care

large fixed costs, which it funded mostly through debt, Bharti Airtel charged subscribers a high price for many years. By 2002, it was running out of money even as new rivals were entering the industry.

Top management realized that the premium pricing strategy would not allow Bharti Airtel to expand its subscriber base rapidly and defray sunk costs. The company had to innovate. It reckoned that in India, the average revenue per user (ARPU)—the key metric tracked by every cellular company and analyst in the world—was not the right indicator of a customer's attractiveness. Even if the ARPU were tiny, Bharti Airtel would generate large revenues if it got millions, rather than thousands, of consumers to sign up. To do that, it would have to reduce prices drastically, so it started thinking of itself as a factory that produced wireless minutes. It then focused on three measures: gross revenue and profit, the ratio of operating expenses to gross revenue (to track operating efficiency), and the ratio of revenue to capital expenditure (to ensure capital productivity). When it shifted its focus from the ARPU to gross profit, the company stopped targeting only a few segments and expanded its potential market to the entire Indian population.

Bharti Airtel had to find a way to grow without worrying about financial resources in a capital-intensive industry. One way of doing that, senior executives decided, was to outsource all functions save for six—customer management, people motivation, financial management, regulatory affairs, brand management, and strategy creation—instead of

being a vertically integrated company like other cellular carriers. For example, in 2004, Bharti Airtel outsourced its IT services to IBM, promising to pay the provider a percentage of monthly revenues and guaranteeing a minimum monthly payment. By tying IBM's compensation to its own growth, the Indian company gave its supplier skin in the game. Beyond a certain point, if revenues continued to grow, IBM's percentage would fall, allowing the buyer to share in the economies of scale.

Similarly, Bharti Airtel chose to pay its telecom network equipment vendors, Ericsson and Nokia, by the erlang—a unit of telecom capacity—rather than for the equipment used to generate erlangs. The company decided when and where it needed fresh capacity while the vendors installed, maintained, and operated the "boxes," encouraging them to ensure maximum coverage with less equipment. Bharti Airtel owned the equipment once Ericsson and Nokia had installed it, which gave it an incentive to use the capacity it had commissioned. It measured network quality in terms of dropped calls, blocked calls, network accessibility, and voice quality. It thus converted fixed costs and capital expenditures into variable operating expenses, greatly reducing its dependence on capital.

Bharti Airtel also created the Airtel Open Developer Community, making its application platform accessible to a large number of software companies. It set up processes for vetting potential developers, providing them with data, and managing the life cycles of value-added services. Bharti Airtel doesn't purchase applications outright; it pays developers on the basis of the revenues their services generate, which allows it to source a large number of applications at a low cost.

Although the corporation recognized that distribution would be critical for future growth, it didn't have the time to create its own channels. It decided to piggyback on distributors for consumer product companies such as Godrej and Unilever, which had operated in India for more than a half century. The enterprise gave around 10,000 distributors specific territories and barred them from selling other carriers' products there. The distributors paid the company up front but provided credit to retailers, who could sell products from competing carriers. More than 1 million shopkeepers in India sold Airtel prepaid and postpaid

Three Kinds of Innovation

Change Business Dynamics
When it shifted its focus from average revenue per user to gross profit, Bharti Airtel stopped targeting only a few customer segments and expanded its market to the entire Indian population.

Synthesize Technologies
The Emergency Management and Research Institute has woven together the latest telecommunication, computing, medical, and transportation technolo-

gies to provide mostly free emergency services in tribal, rural, and urban areas.

Create New Technologies
The pharmaceutical company Lupin reversed the usual drug development process—that is, it gathered clinical data before running lab tests—to create an affordable treatment for psoriasis. It came up with an effective formulation for a fraction of the money and time it would have normally taken.

telecom cards in 2009, and that number will double by 2012. To penetrate rural India, Bharti Airtel teamed up with India's largest microfinance institution, SKS. The partnership enables customers to take out a loan for the Nokia 1650 and pay for it through 25 installments of 85 rupees a month. Bharti Airtel also works with a fertilizer manufacturer, IFFCO (Indian Farmers Fertiliser Cooperative), which sells cobranded subscriber identity module cards through its retail outlets. Every day, farmers get three free voice updates on market prices, farming techniques, weather forecasts, and fertilizer availability.

Bharti Airtel even collaborates with competitors in order to save capital. As it expanded into rural India, putting up passive infrastructure such as towers, air-conditioning, and generators became a large expense, especially in sparsely populated areas. This wasn't going to be a differentiating factor, so the company mooted the idea of merging its infrastructure unit with those of two other cellular service providers, Vodafone and Idea. By December 2007, the companies had struck a deal to set up Indus Towers, in which Bharti Airtel and Vodafone each own approximately 42% of the equity and Idea owns the remaining 16%. This structure allows the three companies to share the cost of setting up passive infrastructure and reduces the investment that each of them must make to expand operations in India.

Thanks to its unique business model, Bharti Airtel is able to charge 1 cent per minute of talk time—compared with 2 cents in China and 8 cents in the U.S.—making it the world's most affordable mobile telephone service. In 2009 the company had signed on approximately 100 million subscribers, and it plans to double that number by 2012. The company's ability to scale has quickly paid dividends: Its operating margins increased from –2.25% in 2003 to 28.3% in 2008. Despite an intensely competitive market, Bharti Airtel reported revenues of $7.25 billion in 2008, and its revenues grew 43% from 2004 to 2008. While the ARPU in India was $5.95 in 2009, compared with $50 in the U.S., the Indian enterprise was one of the world's most profitable wireless carriers last year, with a 27% return on capital employed, $2.04 billion in earnings before interest and taxes, cash reserves of $963 million, and zero debt. Companies in every industry

"Earth provides enough to satisfy every man's need, but not every man's greed." Mahatma Gandhi

worldwide are trying to emulate Bharti Airtel's formula for success.

Innovations That Synthesize Technologies

Some Indian organizations have combined cutting-edge technologies to create new capabilities, in certain cases for the first time in the world. They are scaling rapidly but keeping costs low by using innovative financing methods such as public-private partnerships. These companies often draw on the knowledge base of specialized institutions overseas and set the standards in India even as they develop unique research capabilities.

Consider medical emergency management—in particular, the 911 service in the U.S. that prompts an ambulance to arrive at your doorstep the moment you need it. Several ambulance companies operate in large cities like New York and Los Angeles, and while they serve people well, they remain small and invest little in innovation. Because no such private entity existed in India, the Raju brothers—now in jail for embezzling funds from Satyam Computer Services—set up the Emergency Management and Research Institute (EMRI) in 2004. Taken over by GVK, another Indian business group, EMRI has woven together the latest telecommunication, computing, medical, and transportation technologies to provide affordable (read: mostly free) emergency services in tribal, rural, and urban areas.

Given India's environment, the organization has innovatively tackled the physical, cultural, and language barriers that impede its ability to deal with emergencies. Getting Indians to recognize an emergency and call 1-0-8 for assistance is a major hurdle. For example, when a woman goes into labor in India, seeking medical care may not always be the knee-jerk response, since many women give birth at home. Through its research, EMRI has learned that 10% of Indians face emergencies but either don't recognize them as such or have nowhere to call. In addition to providing a number to call, the organization has developed programs to teach Indians to recognize and react to emergencies.

Unlike its Western counterparts, EMRI has designed its ambulances, trained its paramedics, and most important, built a unique information and communications technology infrastructure. At the heart of that infrastructure is

a computer network supported by a call center in each state, where 200 operators receive 1-0-8 emergency calls and direct 4,000 field staff members to respond to them. The Emergency Relief Operators follow a clear process to determine if a call is an emergency and, if so, whether it is a medical, police, or fire emergency. The goal is to help victims survive the golden hour, the first 60 minutes, since 80% of deaths in hospitals take place in the first hour of admission.

India doesn't have reliable GPS-based mapping, so the primary critical task is to pinpoint the emergency's location. The Emergency Relief Operators route ambulances using dynamic optimization algorithms based on the nature of the emergency, its severity, and the ambulances' locations. After an officer dispatches an ambulance, she or he calls the medical technicians in it to give them health-related data, connects one of the technicians with the caller, and leaves them talking so the distraught caller is never alone before the ambulance gets to the spot. The operators execute this task in 80 to 90 seconds, but the organization hopes to reduce that time to 60 seconds. EMRI keeps innovating: One recent experiment consists of sending a team ahead on a two-wheeler, which slides through traffic faster than an ambulance could, enabling critical care to start sooner.

EMRI started out on the assumption that a public-private partnership would be essential for its functioning. In India, the government owns most hospitals, so EMRI has to work with the state as well as the fire and police departments. Furthermore, it recognizes the importance of government support in educating people. To ensure that policy makers and bureaucrats don't interfere, EMRI is a private foundation in legal terms, although 95% of its funding comes from state governments. Partnerships and alliances are a strategic focus. EMRI collaborates with organizations in the U.S. such as the National Emergency Number Association, the American Association of Physicians of Indian Origin, Carnegie Mellon University, Shock Trauma, the American Academy for Emergency Medicine in India, and Stanford University (with which EMRI has developed a two-year postgraduate degree in emergency care), as well as Singapore Health Services and Germany's Geomed Research.

Thanks to its unique business model, Bharti Airtel is able to charge 1 cent per minute of talk time—compared with 2 cents in China and 8 cents in the U.S.

Over the past four years, EMRI has expanded rapidly, offering its services to 366 million people in Gujarat, Uttarakhand, Goa, Chennai, Rajasthan, Karnataka, and Assam, which makes it the world's largest emergency-management entity. EMRI handles 60,000 to 80,000 calls a day, has a fleet of 2,600 ambulances, attends to 7,000 emergencies a day, saves 110 lives a day, and employs 11,000 people. Against a target of reaching patients in 30 minutes, EMRI reports an average response time of 14 minutes in cities, 31 minutes in rural villages, and 28 minutes in tribal areas. EMRI spent only 50 cents per person treated to build the infrastructure in India, compared with $100 in the United States. The expense per ambulance visit is less than $15, versus $600 to $800 in the United States.

As the only emergency responder in the world with a research institute, EMRI is at the forefront of identifying ways to improve knowledge and practices and is becoming the best source of information for emergency care. It archives all the calls it gets and has analyzed the data to compile regional public health profiles. For the first time in India, data on the seasonality, timing, and nature of medical emergencies are available. EMRI is also developing ways of passing information from ambulances to hospitals before victims arrive, particularly in the cases of cardiac problems, traffic accidents, pregnancies, snakebites, and suicide attempts. Indeed, its research capabilities are changing the way many countries think about emergency-care management.

Innovations That Yield New Technologies

Many Indian companies have invested in developing new products or services, but their goal is usually to create inexpensive offerings on shoestring budgets. They succeed only because they challenge conventional techniques.

Traditionally, the development of pharmaceuticals starts in a laboratory and moves to a clinic through a complex system of validation and testing, as we all know. This can take 10 to 12 years and can cost more than $1 billion. In order to identify medicines more quickly and cheaply, Indian policy makers and scientists are trying to reverse the process. They are asking what would happen if, instead of going from laboratories to clinics, companies went from clinics to laboratories and then back to

clinics. The idea is to use clinical and qualitative data to develop target formulations that undergo preclinical and clinical research trials.

For example, around 2% of the world's population suffers from psoriasis—a recurring inflammatory skin disorder—and patients spend approximately $5 billion a year on treatments. Monoclonal antibody treatments, which cost $15,000 to $20,000 for a course, are effective but beyond the reach of most Indians. When Lupin, one of India's well-known pharmaceutical companies, announced its interest in developing herbal-based medicines, a practitioner of a traditional branch of Indian medicine called *Siddha* approached the company with a cure for psoriasis. On the basis of knowledge handed down in his family for generations, he claimed that the juice of the *Argemone mexicana* (Mexican poppy) would cure the disease completely.

There was no clinical evidence for the claim, but Lupin collaborated with the practitioner, developed a formulation, and started the first trials in early 2000. Dermatologists used quantitative measures such as the Psoriasis Area and Severity Index to assess success. Patients who took the herbal medicine not only were cured but also did not suffer a relapse for the next three years. In January 2003, the government offered to fund the next stage of the project and arranged partnerships with two state-owned research organizations, the Central Drug Research Institute and the National Institute of Pharmaceutical Education and Research.

These organizations developed the drug in three phases, according to U.S. Food and Drug Administration guidelines. The first step was to identify the active elements to gain insights into how the treatment worked and to create a safe oral antipsoriatic formulation that would lead to curative and preventive therapy. Once the safety and toxicity studies were complete, the Drug Controller General of India approved the drug for trials. The key objective at that point was to determine the right dosage levels. The drug went through a clinical study that used healthy adults in the first phase. In the second phase, which ended in April 2007, the safety and efficacy of three different dosages were tested on patients with moderate to severe psoriasis. Lupin completed the third phase—the final multicentric, randomized, parallel-group studies—in March 2010, and it

As the world's only responder with a research institute, EMRI could become the best source of information for emergency care.

plans to launch the drug before the end of the year.

So far, the Indian company has spent $10 million and eight years to develop a cure for psoriasis—a fraction of the money and time it would have normally taken. Moreover, treating the disease with Lupin's drug will cost $100 per patient, compared with $15,000 in the U.S. In general, the Indian market is large in volume and low in value compared with the U.S. For example, Pfizer sells Lipitor for 90 cents in India, as opposed to $2.70 in the U.S., because the Indian equivalent, Ranbaxy's Atorvastatin, sells for 90 cents. Unsurprisingly, reverse pharmacology is gaining ground, with local companies chasing multiple leads for treating cancer, arthritis, hypertension, diabetes, and osteoporosis, among other health problems.

Rules for Gandhian Innovation
Contextual factors have undoubtedly facilitated the growth of Gandhian innovation in India. One, the country's political leaders experimented with socialism for more than four decades, which kept out foreign capital and technologies, particularly from the U.S., but spurred local invention. Indian engineers, backed by government funding, developed nuclear weapons, rockets, imaging techniques, supercomputing, and weather modeling by depending only on their own ingenuity. Two, the Indian economy didn't start growing until the 1990s, so local companies are small. For example, in 2008 India's then-largest pharmaceutical company, Ranbaxy, made $800 million in revenues—60 times less than the $48.2 billion Pfizer brought in, and nine times less than what the U.S. giant budgeted for research. Indian entrepreneurs have a penchant for undertaking small projects and using capital carefully. They've changed their approach to scale since 1991, but they maintain an unwavering focus on capital efficiency. Three, local companies know that while India has both rich and poor people, catering only to the rich limits their market. Most target the aspiring middle class family, which lives on $5,000 a year. As a result, they're forced to develop value-for-money products and services by changing the price-performance equation. And four, entrepreneurs, the most important driver of India's innovation mind-set, have had the audacity to question received wisdom. With increasing frequency, these leaders are

rejecting established ways of doing business in favor of new practices. The mix of minuscule research budgets, small size, low prices, and big ambitions has created the need to think and manage differently.

However, it would be wrong to conclude that only companies in India can develop Gandhian innovations. Enterprises anywhere in the world can do so by modifying the philosophical underpinnings of their innovation processes. CEOs must follow five cardinal principles to get innovation right today. They must say:

My goal is inclusive growth. CEOs must develop a deep commitment to inclusive growth, which will force them to think of unserved customers, be they rural poor who don't have access to telephones or urban poor who don't get emergency medical services. A focus on inclusion challenges executives to push price-performance envelopes to ensure affordability, and to think about increasing scale to lower costs. The starting point has to be the desire to serve *more* people, though. Companies often start by asking: "Given our cost structure, which segments can we serve?" They should ask: "Given that we need to cater to the unserved, what should our cost structure be?"

My vision should be unambiguous. Leadership is crucial to building Gandhian innovations in organizations. In all the cases we've studied, leaders such as Ratan Tata (Tata Group), Sunil Bharti Mittal and Manoj Kohli (Bharti Airtel), and D.B. Gupta (Lupin) have articulated clear visions of what they want to accomplish. In addition, their visions always have a human dimension: for example, helping poor Indians travel safely and affordably with their families; using connectivity to improve people's work and lives; and enabling patients to buy cheap medicines. These leaders also engage with project teams constantly, providing a safety net that protects the teams from self-doubt during despondent times and moderates overconfidence.

I must set stretch targets. CEOs must establish ambitious goals and clear time frames for achieving them. Companies should ask: "What is our man-on-the-moon project?" Or, as they do in India's boardrooms: "What is our Nano project?" By creating aspirations that lie beyond the company's existing resources or current approaches to the delivery of products,

CEOs will compel executives to be innovative and entrepreneurial. The mismatch between aspirations and resources is the essence of entrepreneurship. Executives then have only two choices: Leverage existing resources in new ways, or change the rules of the game entirely. This process of setting ambitious goals is what C.K. Prahalad has called strategic intent (see "Strategic Intent," coauthored with Gary Hamel, HBR May–June 1989).

We must learn to innovate even when faced with constraints. Gandhian innovators start by accepting that there are constraints that won't go away. For example, the Tata Nano team assumed several strict parameters—about price, safety and environmental standards, space, and design. Taken together, these formed the Nano's "innovation sandbox": the space within which the design and development teams had to exercise their creativity. (For more on the innovation sandbox, see *The New Age of Innovation*, by C.K. Prahalad and M.S. Krishnan.) Leaders must force project teams to work within self-imposed boundaries that stem from a deep understanding of consumers. That will result in a novel, outside-in view of innovation.

Our focus should be on people. None of the innovators in our research explicitly discussed shareholder wealth or profit maximization. Their innovation projects had to be profitable and build shareholder wealth, of course, but the focus was always on customers. The language inside their organizations was about consumers as people, suppliers as partners, and employees as innovators. Consider one constant managerial complaint: "At the price levels in these markets, we cannot make profits." This assumes that companies can't lower cost structures, that they can't reduce operating margins, that there's no price elasticity, and that poor people don't have much use for high-tech products. The Indian innovators simply said: "What if we change the way we operate to reduce costs and focus on return on capital employed, not just on operating margins? If we reduce prices enough and make our products available to the poor, won't there be explosive growth as they quickly find uses for and buy our offerings?"

Metrics influence managerial behavior. Gandhian and traditional innovators, we find, use very different measures to evaluate their per-

Getting Innovation Right

1. Develop a deep commitment to serving the unserved.

2. Articulate and embrace a clear vision.

3. Set very ambitious goals to foster an entrepreneurial spirit.

4. Accept that constraints will always exist, and creatively operate within them.

5. Focus on people, not just shareholder wealth and profits.

formance. Most companies focus on profits, operating margins, net present value, time to profit, ownership and control, manufacturing efficiency, intellectual-property-based profits, and known markets. Innovators in developing countries track profits and losses, balance sheets, return on capital employed, cash flow, capital intensity, access and influence, innova-

tion efficiency, volume, and costs—and they concentrate on creating new markets. Which of these two types of companies do you think will win in the new age of global innovation?

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