

## CHAPTER 1

### THE FUTURE IS FAR FROM HOME

Gatorade. It is as American as baseball and apple pie.

Its 1960s roots can be traced to the sun-scorched University of Florida and its football team — the Gators. Oppressive heat and humidity led the team’s trainers to seek better ways than water alone to quickly re-hydrate players. They turned to the school’s research labs, which came back with a concoction of water, glucose, sodium, potassium, and flavorings. The tasty cocktail sped the replenishment of the electrolytes and carbohydrates that players lost through sweat and exertion.

Even before it became an actual brand, Gatorade got a nice marketing boost from the coach of Georgia Tech. Asked how his team had lost to Florida in the 1967 Orange Bowl, he lamented, “We didn’t have Gatorade.”

It is a great story, and it is wonderfully fitting for an American icon. But there is an interesting missing link, one that leads back to events far from Gainesville, Florida.

Earlier in the 1960s, there were epidemic outbreaks of cholera in Bangladesh and elsewhere in South Asia. The key to keeping cholera patients alive was simple: Keep them hydrated.

According to Dr. Mehmood Khan, Chief Scientific Officer of PepsiCo (which now owns Gatorade), Western doctors who went to help stem the epidemic were surprised to discover a centuries-old local treatment for the severe diarrhea caused by cholera. The concoction included ingredients such as coconut water, carrot juice, rice water, carob flour, and dehydrated bananas. At the time, Western medical opinion held that putting carbohydrates in the stomachs of patients

suffering from diarrhea would cause cholera bacteria to multiply and the disease to worsen. “Yet for thousands of years, this was the normal treatment used in Ayurvedic medicine,” says Khan. “By giving carbohydrate and sugar in the solution with salt, uptake was quicker, and patients re-hydrated faster.”

The success of the treatment was covered in the British medical journal *Lancet*, and it made its way to a doctor at the University of Florida. The doctor saw a common problem in the need for rapid re-hydration. If such a treatment worked well for cholera patients, it would surely work for healthy football players.

The Gatorade story was unusual for its era. It ran counter to the dominant innovation pattern. Innovations typically originated in rich countries and later *flowed downhill* to the developing world. Gatorade, by contrast, swam against the tide. It was a *reverse* innovation. Quite simply, a reverse innovation is any innovation that is adopted *first* in the developing world. Surprisingly often, these innovations defy gravity and *flow uphill*.

Historically, reverse innovations have been rare. Indeed, the logic for innovations flowing downhill, not uphill, is intuitive. Rich customers in rich countries can afford — and indeed they demand — the latest and the greatest. Demand pushes technology forward. In due course, its benefits trickle down across the globe. You can do the innovation math: The United States and Germany have well over three hundred Nobel Prize winners in science and technology. Meanwhile, India and China, with six times the combined population, have fewer than ten. Consequently, people — especially in the West — expect the future to be invented in Silicon Valley or Houston or Munich, but not in Bangladesh.

Thus, it is natural to suppose that developing nations are engaged in a slow and evolutionary process of *catching up with* the rich world, both economically and technologically.

They do not need innovation. They will simply import what they desire from the rich world, just as soon as they can afford it.

Under that set of assumptions, a strategy known as glocalization makes perfect sense. As practiced by multinational businesses, glocalization posits that the work of innovation has already occurred. Emerging markets can be tapped simply by exporting lightly modified versions of global products developed for rich-world customers – mainly de-featured lower-end models.

But the assumptions are misguided. What works in the rich world won't achieve wide acceptance in emerging markets, where customer needs are starkly different. As a result, reverse innovation is rapidly gathering steam — and it will only continue to do so.

On the surface, reverse innovation seems to be a counterintuitive phenomenon. It is easy, after all, to understand why a poor man would want a rich man's product. But why would a rich man ever want a poor man's product? The answer is that, under certain circumstances, it offers new, unexpected, or long-overlooked value. Consider two modern examples.

When the giant big-box retailer Wal-Mart entered emerging markets in Central and South America, it discovered that it couldn't simply export its existing retail formula. It needed to innovate. Specifically, its big box had to be radically scaled down. The company created a version of the Wal-Mart store similar to the more “cozy” retail outlets common in Mexico, Brazil or Argentina.

Smaller stores thrive in those places because shoppers typically lack the liquidity to buy in bulk and maintain a home “inventory.” Moreover, consumers not only don't drive SUVs, they often ride bicycles, mopeds or buses — or else they walk — to do their shopping. There are limits to what they can carry home. Small Wal-Marts matched the needs of the local culture.

Today, Wal-Mart is doing something that would have been hard to imagine just a few years ago. It is bringing the “small-mart” concept back to the United States. For one thing, its big-box market is saturated. Many U.S. consumers suffer from big-box fatigue. Furthermore, dense urban environments, with constrained space and ultra-high rents, can more easily — and profitably — support numerous small stores distributed around town instead of one or two that are the size of a full city block. A variant of the same logic applies in very sparsely populated rural areas, where a big box simply couldn’t thrive. Wal-Mart will be a powerful rival to small-box competitors, in that it still enjoys vast economies of scale in purchasing and supply chain management even with a small store footprint. Soon enough, it seems, some Americans will be able to buy their South Asia-inspired Gatorade at a New York City Wal-Mart scaled to the dimensions of a village bodega.

Next, consider U.S. efforts to improve the cost-effectiveness of — and access to — health care. Reformers would do well to look to India for new thinking.

Narayana Hrudayalaya Hospital performs world-class open-heart surgery for just \$2,000. This price — 90% to even 99% below rich-world comparables — can only partially be explained by India’s lower costs of labor. The real magic is in process innovation. Narayana Hrudayalaya took the radical step of adapting for use in health care a number of well-understood industrial concepts that have been around since Ford’s Model T: standardization, specialization of labor, economies of scale, and assembly line production.

This may sound simple, but it runs counter to the dominant logic of rich-world health systems. Doctors focus on the most challenging patients, trying to push the envelope on medical science and technology. Cost is not the first consideration, but the last. As a result, Western medicine is organized based on the expensive, and debatable, assumption that every patient is

unique. Innovations in India show that, in many instances, there is another way. In fact, Narayana Hrudayalaya is bringing its innovative business model to the rich world. It is building a cardiac hospital in Cayman Islands (an hour's flight from Miami) to treat Americans with heart disease at 40 percent below U.S. prices.<sup>i</sup>

These are just two of many examples that we will highlight in this book. The dynamics of global innovation are changing.

In his January 2011 State of the Union address, President Obama said that the United States must “out-innovate, out-educate, and out-build the rest of the world.” That’s a fine ambition, but it won’t happen if American innovators focus strictly on American problems.

The new reality is that the future is far from home. If rich nations and established multinationals are to continue to thrive, the next generation of leaders and innovators must be just as curious about needs and opportunities in the developing world as they are about those in their own backyard. Whether you are a CEO, financier, strategist, marketer, scientist, engineer, national policymaker, or even a student forming a career aspiration, reverse innovation is a phenomenon you need to understand. Reverse innovation has the potential to redistribute power and wealth to countries and companies that understand it — and to diminish those that do not. Conceivably, it could accelerate the rise of poor countries<sup>ii</sup> and the decline of rich ones. But it doesn’t have to turn out that way. Indeed, reverse innovation is an opportunity that is open to *anyone, anywhere*, with the ambition to go after it.

The stakes are high. As we will explain, ignoring reverse innovation can cost many companies, *especially* today’s world-class multinationals, much more than a missed opportunity abroad. It can open the door for the so called emerging giants, the rising generation of multinationals headquartered in the developing world, to inflict pain or even severe damage even

in your well-established home markets. There are dozens of such companies now, with names like Tata, Mahindra, Reliance, Lenovo, and Haier. They are here to stay. (See “Invasive Species: Mahindra & Mahindra in the U.S. Heartland”).

Jeffrey Immelt, Chairman and CEO of General Electric, puts it this way: “If we don’t come up with innovations in poor countries and take them global, new competitors from the developing world – like Mindray, Suzlon, and Goldwind – will. That’s a bracing prospect. GE has long had tremendous respect for traditional rivals like Siemens, Philips, and Rolls-Royce. But we know how to compete with them. They will never destroy GE. The emerging giants, on the other hand, very well could.”

Reverse innovation is not optional. It is oxygen.

### **Why Emerging Markets Need a Clean-Slate Approach**

As leaders of multinationals are well-aware, the developing economies are large and they are growing at fantastic rates. A few simple numbers paint the picture.

The International Monetary Fund<sup>iii</sup> regularly ranks nations by various economic metrics. In population, for example, China is #1 and India is #2. A whopping 85% of the world’s citizens, 5.8 billion people, live in poor countries.<sup>iv</sup> In measures of total gross domestic product (GDP), China is #2, India #4, and the total GDP of poor countries is roughly \$35 trillion, nearly half of world GDP.<sup>v</sup>

Furthermore, projected GDP growth rates for China and India are at least double those of rich countries. Indeed, growth in poor countries has already outpaced growth in rich ones for several years running. The sharp recession triggered by the 2008 financial crisis made the growth gap look more like a chasm, and the uncertainty created by the U.S. and European debt crises in

2011 has widened the chasm even further. Poor countries are likely to account for *at least two-thirds* of world GDP growth for decades to come!

It is an enormous opportunity, but it will not be easy for companies with rich-world legacies to capture. Winning in emerging markets requires far more than simple geographic expansion. As a mere starting point, it requires intense curiosity about how the needs of the developing world are different from those at home.

You can get a preliminary sense of these deep differences simply by considering just one more basic statistic: GDP per capita, the annual income of each nation's average citizens. This is a ranking that looks little like the population or the GDP lists. The United States still ranks high, sixth in the world, first among countries with a population greater than 10 million citizens (a handful of small-but-very-rich countries top the list). But how about China and India? Scroll down... Keep going. Keep going. There! According to the IMF in 2010, China is #94 (between Bosnia-Herzegovina and El Salvador); India is #128 (between the Cape Verde Islands and Vietnam).

The point is simple. Developing economies are different. They are not just a little bit different, they are night-and-day different. In the rich world, there are a few people who each spend a lot; in the developing world, there are a lot of people who each spend a little. Either way, total spending is vast. China and India are *mega* markets with *micro* consumers.

This implies a starkly different business challenge. One person with ten dollars to spend has a completely different set of wants and needs than ten people each with one dollar to spend. That's why it's unrealistic to expect rich-world products and services to have much of an impact in poor countries. Doing more business in high growth hot spots — a.k.a. poor nations — requires much more than ramping up sales, distribution, and production.

It requires innovation. *Reverse* innovation.

### **The Purpose of This Book**

In this book, we will focus on what *you* – and we assume that most readers are leaders of, and leaders within, multinationals corporations headquartered in the rich world – must do to stay strong and shape the future. Leaders within the upstart challengers, the emerging giants, will also value this book for its inside view into exactly what the established multinationals have to overcome in order to compete effectively in the developing world. Emerging giants can use the book's concepts and ideas to drive reverse innovation strategies of their own in their global expansion.

The purposes of this book are twofold: first, to help you grasp the theory and precepts underlying reverse innovation, including the significant strategic value achievable through its application; and, second, to provide you with highly practical guidance on how to execute successful reverse innovation initiatives. In other words, you will learn both to set strategy and to *act*: to identify right opportunities, build and support local teams, find creative inspiration in constrained circumstances, surmount internal and external obstacles, and avoid potentially lethal traps.

Part 1 of the book contains our recommendations in three categories – at the strategic level, at the organizational level, and at the project level. Strategy is our focus in chapter 1. We will explain why you must rethink global strategy, creating room, specifically, for a reverse innovation strategy. Such a strategy must be rooted in a deep understanding of the profound differences between emerging market needs and rich country needs, and the dynamics that can make emerging market innovations flow uphill. In chapter 2, we will explain how you must reshape your global organization by shifting people, power, and resources to emerging markets,



creating distinct business units with distinct scorecards in emerging markets, and creating a reverse innovation mindset throughout the company. Finally, in chapter 3 we will show how to pursue specific reverse innovation projects. You must assess needs, design solutions, and design teams from scratch, while still making it possible for these teams to leverage global resources. And, these teams must run disciplined experiments.

We summarize these recommendations in our *Reverse Innovation Playbook*, which you'll find right after this introduction.

Part 2 of the book, chapters 4 through 11, consists of eight in-depth case studies that, taken together, showcase the entire Reverse Innovation Playbook. Based on interviews with key principals, all of the stories include many of the challenges and frustrations teams and their leaders faced along the way.

Frustrations are, of course, inevitable. The tapestry of geographies and cultures in which you will pursue reverse innovation efforts is likely to demand considerable adaptation, sometimes even improvisation. The case examples in Part 2 show that you can be both disciplined and flexible in pursuit of reverse innovation's rewards.

After a brief Call For Action (chapter 12), we offer two appendices. The first is a toolkit that you can use to shape conversations about reverse innovation in your own company. The second, directed at academics, explains how this book builds on past work and suggests important new directions for future research.

**SIDEBAR #1:****Invasive Species: Mahindra & Mahindra in the U.S. Heartland**

In 1994, when Mahindra and Mahindra (M&M) arrived on American shores, it was already a powerhouse in its native India. The company, founded as a steelmaker in 1945, had entered the agriculture market nearly 20 years later, partnering with International Harvester to manufacture a line of sturdy 35-horsepower tractors under the Mahindra name.

These tractors became very popular in India. They were affordably priced and fuel efficient, two qualities highly valued by thrifty Indian farmers, and they were sized appropriately for small Indian farms. Over the years, M&M continued to innovate to perfect its offerings, and its tractors proliferated throughout India's vast agricultural regions. The Mahindra brand became well established and respected. By the mid-1990s, the company was one of India's top tractor manufacturers — and it was ready for new challenges. The lucrative U.S. market beckoned.

When Mahindra USA (MUSA) opened for business, Deere & Company was the dominant brand. Deere's bread and butter was enormous machines ranging as high as 600-horsepower for industrial scale agribusiness. Rather than trying to develop a product that could compete head-on with Deere, M&M aimed for a smaller agricultural niche, one in which it could grow and make the most of its strengths.

Mahindra figured its little red tractor would be perfect for hobby farmers, landscapers, and building contractors. The machine was sturdy, extremely reliable, and priced to sell. With a few modifications for the U.S. market — such as supersized seats and brake pedals to comfortably accommodate larger American bodies — Mahindra was good to go.

But it was far from home, and hardly a household name. The few Americans who had heard of the brand thought of it variously as “red,” “foreign,” or “cheap.” Even domestic competitors were barely aware of the newcomer. Deere gave more of its attention to Case and New Holland than to Mahindra. Flying below the radar, MUSA decided to make its mark through personalized service.

It built close relationships with small dealerships, particularly family-run operations. Rather than saddle dealers with expensive inventory, MUSA allowed them to run on a just-in-time basis, offering to deliver a tractor within 24–48 hours of receiving the order. MUSA also facilitated financing. In return, Mahindra benefited from the trust the dealers enjoyed in their communities.

MUSA also built close relationships with customers. Some 10 to 15 percent of M&M tractor buyers got phone calls from the company's president, who asked whether they were pleased with the

buying experience and their new tractors. The company also offered special incentives — horticultural scholarships, for example — to neglected market segments such as female hobby farmers.

This high-touch strategy paid off handsomely. MUSA's U.S. sales growth averaged 40 percent per year, from 1999 to 2006. This prompted David C. Everitt, president of Deere's agricultural division, to remark, "Mahindra could someday pass John Deere in global unit sales." (*BusinessWeek*, July 31, 2006).

Deere responded with short-lived — and seemingly desperate — cash incentives to induce Mahindra buyers to trade for a Deere. This had the unintended effect of promoting M&M's brand ("And we didn't even pay for it," says Anjou Choudhari, CEO of M&M's farm equipment sector during 2005-10). Mahindra fired back with an ad featuring the headline, "Deere John, I have found someone new."

As Mahindra enjoyed growing success in America, Deere struggled to gain a foothold in India. Unlike Mahindra, which had innovated both its product and processes for the U.S. market, Deere tried to tempt Indian farmers with the same product that had underwritten its success at home. The strategy didn't work, and Deere was forced to reengineer its thinking as well as its product (see chapter 7).

"We gave a wake-up call to John Deere," notes Choudhari. "Our global threat [was] one of the motivations for Deere to design a low-horsepower tractor — in India, and for India."

In the meantime, M&M has become the number one tractor maker worldwide, as measured by units sold.

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<sup>i</sup> For more, see Tarun Khanna, "Narayana Hrudayalaya Heart Hospital," HBS Case, 2011.

<sup>ii</sup> We will use the term *poor country* only in the narrow sense that the World Bank uses it — to describe a nation with a low GDP per capita. We will use *poor people* in the same way — only in the strictest economic meaning of the word *poor*.

<sup>iii</sup> We used the International Monetary Fund's 2010 World Economic Outlook Databases, published in October of 2010 and available at [www.imf.org](http://www.imf.org).

<sup>iv</sup> We defined rich countries as those with at least \$23,500 of income per person per year at purchasing power parity, about one-half of the per capita income in the United States.

<sup>v</sup> We have used GDP data adjusted for purchasing power parity.