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A Reverse-Innovation Playbook

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for emerging markets and then brought them back
home by Vijay Govindarajan**



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When a multinational corporation learns to generate successful innovations in emerging markets and then exports that knowledge and those innovations to the developed world, new business possibilities suddenly burst forth. The limits imposed by its traditional operations become surmountable, and the company can rethink all its products and attack new markets in search of growth.

But few companies experience this kind of renaissance, because reverse innovation—developing ideas in an emerging market and coaxing them to flow uphill to Western markets—poses immense challenges. It requires a company to overcome its dominant logic, the institutionalized thinking that guides its actions. Typically that involves major changes: throwing out old organizational structures to create new ones from scratch, revamping product-development and manufacturing methods, reorienting the sales force.

That is why the reverse innovation in the automobile-infotainment division of Harman International is so impressive. The U.S.-based business, known for ultrasophisticated dashboard audiovisual systems designed by German engineers, developed a radically simpler and cheaper way to create products in emerging markets and applied that method to its product-development centers in the West. (To understand why reverse innovation is on the rise, see “How GE Is Disrupting Itself,” HBR October 2009.)

Harman did this using a two-part approach: radical change from below combined with astute leadership from above. A small team based in India and China set audacious goals, created a new organizational structure, and adopted new design methods, while the chief executive, Dinesh C. Paliwal, rebranded the company’s future, shifted the corporate center of gravity to emerging markets, ensured that legacy units continued to thrive, and averted conflict between old and new.

This approach ultimately enabled Harman to offer an unprecedented range of

products along a continuum of markets, from low-end to luxury. The company is now looking at infotainment systems for motorbikes—a burgeoning market that represents a startling departure from anything Harman has ever attempted before.

Executing Radical Change

When Paliwal became the CEO of Harman, in 2007, its infotainment division, which makes factory-installed systems that integrate GPS navigation, music, video, cell phone, and internet, led in the luxury-car segment. The division had a 70% share of the market and accounted for two-thirds of the company's \$3 billion in revenues. (Harman also has a consumer audio business and a division that makes sound systems for stadiums and auditoriums.) But because the high end had little room for growth or margin improvement, Paliwal sought new opportunities in emerging markets, where India's Maruti Suzuki and other manufacturers had achieved price points that would have been unimaginable in the developed world. Harman had previously tried to move into these markets through glocalization, adapting its premium products for lower-priced segments. (See the sidebar "Reversing the Flow of Innovation.") The scaled-down infotainment systems had performed poorly.

Determined to build a low-cost design and manufacturing platform, Paliwal in 2008 commissioned a project that took an entirely new approach. He understood that innovating for emerging markets would require radical changes in key aspects of the business.

Rethinking location, staffing, incentives, and reporting structure. The company deliberately placed the initiative, named Saras ("adaptable" in Sanskrit), within emerging markets. The team consisted of a software group in India and a smaller hardware group in China. Head count was kept low to ensure flexibility and encourage the members to take initiative.

The project was run by people who were both familiar with emerging markets and deeply rooted in the company culture. The

India group was led by Arvin Baalu, who is Indian, and the China group by Kelei Shen, who is Chinese. Both were leaders with established credibility at Harman. They reported to Sachin Lawande, who had been the chief software architect in the infotainment division, rather than to the head of the automotive section, as would have been usual at Harman. Lawande reported to Paliwal. To maintain connections with the division's traditional product-development centers, the team included three engineers from Germany and three from the United States. To facilitate sharing, the legacy engineering units were compensated for transfers of needed technology.

Setting audacious targets. Lawande saw that the project would require a new engineering culture and approach to innovation, and he challenged his team members to think aggressively. The team set the impossible-sounding goal of creating products whose functionality would resemble that of the division's existing infotainment systems, but at half the price and one-third the cost.

Rethinking engineering processes.

Whereas the company's dominant logic dictated that design engineers be oriented toward creating ever more complex, "invented here" systems for luxury markets, the Saras team embraced different principles. Among these was scalability: Harman wanted a new product architecture that could be easily pared down or bulked up, depending on market requirements. To meet the scalability goal as well as the audacious cost target, the team adopted several other principles, including simplicity, modularity, and third-party solutions. It chose to work with standard technologies rather than those invented at Harman, and it abandoned the company's traditional practice of

performing costly after-sale customization. Instead the products would be assembled from a menu of predesigned features and functions. Modularity extended to the systems' software, too, allowing the team to more easily add or subtract features. And by building an architecture that was friendly to third-party solutions, the team could make use of recent technological advances in fields such as smartphone chips.

Lawande defied Harman's dominant logic in other ways, by ensuring that Saras took a cross-functional, unspecialized, experimental, adaptive, and lean approach to its work. In the division's main software engineering group, based in Germany, engineers typically stayed within narrow domains. Technologies were segregated and subdivided, with a team assigned to each subdivision; a given team might know little about an adjacent component. This fine parsing of labor was efficient for making incremental improvements, and it had yielded highly crafted components, but it was rigid and expensive. On the Saras team, by contrast, members organized

When the chief technology officer attempted to scuttle the reverse-innovation project, the CEO supported the project's leader—and made him the new CTO.

themselves around whole functions rather than components. For instance, one group brought together all the competencies needed to tackle the navigation unit.

In less than a year the team had designed a new architecture and used it to build an infotainment system that closely resembled the division's high-end systems in its functioning and met the tough cost and price targets. More important, its products were highly scalable and could potentially meet a broad spectrum of Harman's future requirements.

Overcoming Resistance

Not surprisingly, Saras soon met with internal suspicion. In some corners of the com-

Reversing the Flow of Innovation

pany, the idea spread that its products were inferior—meant only for India and China, and not possibly sophisticated enough for Western markets. Multiple attempts were made to derail the project and take the division down a more conservative path. Paliwal's support was crucial at those times.

After a successful demonstration to the board in 2009, the project entered the commercialization phase. Taking aim at entry-level and midrange cars, Harman approached customers in India and China. But it also approached high-end customers. Some of them initially showed reluctance: Even though they had pressed for changes to the legacy platform, they were caught off guard by how far Saras had departed from what they'd grown accustomed to, and they were concerned about quality. Only after Lawande invited customers to visit the development centers for presentations and demos were they reassured that the new approach was solid.

The company then began to market the new products to developed-world carmakers whose need for simplicity and low cost was similar to that of manufacturers in emerging markets. At first the infotainment division's salespeople didn't share Paliwal's view that Saras innovations could be valuable to Harman's customers in developed markets, and they were reluctant to offer them to those customers. The sales force had achieved success by delivering high-touch service, which forged close customer relationships and helped justify Harman's deluxe price points but also drove up costs and complexity. Salespeople viewed the new systems' modular architecture, which allowed products to be configured and delivered quickly, as an indication of low quality: How could anything made from simple building blocks match the quality of Harman's traditional offerings? They also fretted that simplifying customization would undermine profit margins and hurt commissions. Paliwal and Lawande had to order them to present the new products to customers.

After Toyota accepted Saras, these concerns melted away, and ultimately the sales

For decades *glocalization*, whereby innovations flow from rich to poor markets, has been a key part of multinationals' strategy. Having developed great offerings for home markets, Western companies modify them, often by stripping off many of their features, and then distribute them around the world at lower price points.

Glocalization has proved effective in reaching the top segments of the market in developing nations—buyers with needs and resources similar to those in the developed world. However, most growth opportunities in emerging markets are not at the top but in the middle market and below, where the gaps between customers' needs and those of their developed-world counterparts are enormous. Gradually a new approach is emerging, one that starts with the recognition that if you want to succeed in emerging markets, you must innovate for them.

But that isn't the end of the story. Because the global economy is richly interconnected, innovations developed

for emerging economies can be extended to other markets, including those in the developed world. To do this a company must adopt a reverse-innovation mind-set, which means valuing the products that come out of emerging markets and being willing to rethink the underlying assumptions in its developed-world businesses.

For most multinationals, glocalization will continue to deliver the bulk of profits for a long time to come. Ideally, it will be intertwined with and supportive of reverse innovation, leading companies into new ways of doing business and new areas of growth.

staff recognized that lower prices didn't necessarily mean smaller commissions. With a higher net profit per unit and a much larger volume base, sales commissions stood to rise, too.

Paliwal's guidance helped prevent the reverse-innovation initiative from faltering—or tearing the infotainment division apart. The company used the ideas from Saras as a blueprint, and the team's new thinking spread throughout the organization in a measured and constructive manner. As of late spring 2011, 18 months after launch, Saras had generated more than \$3 billion in new business—a good chunk of its five-year target of \$5 billion—during one of history's most hellacious economic periods. Harman's share price rose nearly fourfold from 2009 to 2011.

Having innovated for automakers in emerging markets and then offered Saras products to developed-world manufacturers of midpriced cars, Harman has entered the third stage of its reverse-innovation initiative: Its new modular and scalable design and production methods are moving into traditional luxury markets, a transition that is expected to be complete in 2014. Even-

tually the Saras approach will become the company standard.

Change from Below and Above

Harman's management of reverse innovation shows that the two-part approach—with local teams generating radical change from below and CEOs orchestrating companywide changes from above—helps organizations bypass traditional thinking and integrate new logic into product offerings.

Project-level actions. Ideally, the parent company gives the local growth team the freedom to function with all the energy and imagination of a start-up and encourages it to:

Establish radical goals. "All the features at half the price and one-third the cost." That's a goal that will get people's attention. Harman's traditional R&D methods could never have achieved such an objective, but aggressive goals and the daunting constraints they imply can spark novel ways of succeeding.

Practice clean-slate organizational design. You don't get clean-slate innovation without clean-slate organizational design.

Ultimately, Saras's whole-function approach to design not only helped shatter the dominant logic in the project's early days but also showed the rest of the division that its new organizational structure was as good as or better than the company's traditional siloed one.

Leverage global resources. Innovation teams in emerging markets must not isolate themselves. They must make full use of multinationals' extensive assets and continue to interact with legacy units. By recruiting several of Harman's German engineers to join his team, Lawande was able to tap into Harman's global expertise in navigation technology. But he was also able to facilitate the spread of Saras's approach: The German engineers, although initially resistant to the project's philosophy, eventually saw its value and helped build bridges to the traditional engineering group. They became change agents.

Choose team leaders without conflicting interests. The team should be led by an executive whose highest, if not only, priority is the project. Otherwise the project will be poisoned by traditional thinking, which inevitably aligns with the company's dominant revenue stream. When project teams report to executives who are accountable for quarterly revenue goals, those executives are tempted to divert team members to core initiatives with nearer-term impact. To create future value, resources should flow in the opposite direction.

Lawande, rather than the leaders of the automotive section, directed the team, insulating Saras from decision making that could have compromised its work or threatened its access to vital resources. Moreover, an automotive-section leader might naturally have evaluated Saras using criteria that made sense for an established business but not for an emerging venture.

Top-level actions. The CEO is responsible for supporting project-level actions and ensuring that they have a constructive impact on the company—specifically, by:

Rebranding the company's future. Denial and resistance flourish in the absence of clear communication from the CEO, so he or

she must use the bully pulpit to create a new picture of where the company is going. To spur the integration of the Saras approach, Paliwal repeatedly stressed that Harman's traditional markets were saturated and that growth must be found in completely new ones. In essence, he made it clear that the company's future *lay elsewhere*. Often, the best form of communication is bold action, so Paliwal sometimes took highly visible steps to settle disputes and help change the company's mind-set and culture. For example, when the chief technology officer, who had roots in the German engineering group, attempted a coup against Lawande in order to scuttle the project's reverse-innovation methodology, Paliwal supported Lawande—and made him the new CTO.

Shifting people and power to emerging markets. You cannot change the dominant logic without changing the people and the hierarchy. To help initiate Saras, Paliwal hired two high-profile executives, one from Bosch and one from Philips, and put them into newly created positions overseeing sales, marketing, and distribution for India and China. Each had full P&L responsibility and reported directly to Paliwal. He challenged and empowered them with aggressive goals—such as 10-fold revenue growth over five years—that he knew could never be achieved through glocalization.

Increasing R&D spending in emerging markets and focusing it on local needs. Paliwal shifted the engineering function's center of gravity from Germany and the United States to key emerging markets, where local carmakers' needs were apparent every day.

Indeed, all the companies I have studied dramatically increased their emerging-market investments in head count, business processes, and infrastructure. As part of the integration of the Saras approach, Paliwal created Phoenix, a cross-organizational engineering team to bridge the divide between the old guard and the “upstarts” (as the wider organization saw them). Its goal is to combine the learning achieved through Saras and the deep experience and competence of the legacy team to achieve a single coherent strategy and technology platform.

Demise of the Dominant Logic

In the span of just a few years, Harman International overcame its institutionalized thinking, developed innovative products for emerging markets, and imported the knowledge it gained in those markets to its existing business.

Early 2000s

Relying on proprietary technology and extensive after-sale customization, Harman is comfortably dominant in the market for luxury automotive-infotainment systems.

2007

Dinesh C. Paliwal becomes Harman's CEO after 22 years at Switzerland's ABB. He wants Harman to succeed in emerging markets and in the middle market segment in the West.

2008

Harman sets up an innovation team in India and China to build low-cost information displays and audio systems. The five-year target: \$5 billion in orders.

2009

Despite the economic downturn, Harman maintains its commitment to change, and Toyota becomes its first customer for the team's products. The new methods begin to move to Harman's product-development centers in the West.

2012

The product innovations account for 40% of the division's \$10.9 billion in new business. Harman is working on products for motorbikes and very small cars.

The Future

The innovation team's approaches will displace many of the company's traditional practices.

Bulking up on emerging-market knowledge and expertise. Shattering the glocalization mind-set and integrating reverse innovation are often impossible at Western multinationals unless leaders fully understand the great potential of emerging markets. CEOs can cultivate curiosity about and increase knowledge of emerging markets by including leaders with deep experience in the developing world on boards of directors and top management teams. They can give developed-world executives short immersion experiences in developing countries and hold board meetings, senior management meetings, and executive education programs there. Harman assigns key managers to two-year stints in emerging markets for personal and professional growth, fostering the sharing of expertise between legacy units and Saras.

Ensuring that legacy businesses continue to thrive and calming fears of product cannibalization. Managing glocalization and reverse innovation within a single enterprise and resolving the resulting conflicts are central organizational challenges. Although the unified platform of the Saras approach will ultimately displace many traditional practices of the division's product-development engineers, Paliwal has made it clear that Harman will continue to serve the luxury market, and the German engineering team will continue to add features and functionality to serve luxury customers. Moreover, the company sets annual performance targets and financial incentives to enhance strategic alignment and reduce friction between the Saras team and the legacy units. Answers to the question "How well did you support our company's project teams in emerging markets?" count heavily in annual performance reviews. Even the engineers who were most resistant to Saras have come around.

ALTHOUGH THE TERM "reverse innovation" is common in discussions of Western multinationals' role in emerging markets, not everyone realizes that it refers as much to a state of mind as to a best practice. Beyond taking products designed for emerg-

ing markets and selling them in developed countries, it means reversing the way companies approach innovation. For managers stuck in the old dominant logic, it can be frightening. But ultimately it is liberating.

Having created a simplified, inexpensive architecture that can be configured for all the division's customers, Harman is as eager to move further toward the low end as it is to maintain its hold on the high end. The Saras team, now grown to 50 people, is working on a design for the Tata Nano, the world's most affordable car. Its goal is to dramatically lower the Nano system's cost—to between a quarter and a fifth of the high-end system's—while sustaining three-quarters of the performance. Because most drivers use only their system's core features, the infotainment experience in a Nano won't be all that different from what it is in a Mercedes.

And then there's that motorbike market, vast and mostly unexploited in India, China, and Southeast Asia. For this opportunity Harman plans to create an entirely new platform, to be designed in India, that will use the processing power of drivers' cell phones. The initiative has an ambitious price target of just \$20.

Spurred by the energy and urgency of emerging markets, Harman seems intent on pushing the boundaries of its capabilities. Because it balances the radical thinking of local growth teams with measured guidance from the C-suite, the company is well positioned to keep putting its emerging-market innovations to good use across a spectrum of markets worldwide. It won't be surprising if, in a couple of years, Harman finds itself considering another significant advance in its product-development methods and rethinking how it does things yet again. ♥

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