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Innovation Trickles in a New Direction

Products traditionally are created in rich nations and repackaged for emerging ones. But General Electric, Nokia, and others are reversing the process

By Reena Jana

This month, General Electric's (GE) health-care division will begin marketing a first-of-its-kind electrocardiograph machine in the U.S. Although packed with the latest technology, the battery-powered device weighs just six pounds, half as much as the smallest ECG machine currently for sale. It will retail for a mere \$2,500, an 80% markdown from products with similar capabilities. But what really distinguishes the MAC 800 is its lineage. The machine is basically the same field model that GE Healthcare developed for doctors in India and China in 2008.

As such, the diagnostic tool exemplifies a way of thinking that may be ideally suited to dealing with the widening recession: creating entry-level goods for emerging markets and then quickly and cheaply repackaging them for sale in rich nations, where customers are increasingly hungry for bargains. The term for this new approach is trickle-up innovation.

The process turns conventional product development on its head. Over the years, multinationals have prospered by turning out premium-priced products for the world's affluent. Rather than also designing products for poorer people elsewhere, many businesses found they could simply pass yesteryear's models down, as if they were unloading fleets of used cars. Lately, big companies such as Microsoft (MSFT), Nokia (NOK), and Procter & Gamble (PG) are discovering that they can profit by targeting the world's masses first. And they can score again by selling these low-priced products elsewhere.

Topsy-Turvy Tack

"The dominant logic holds that innovation comes from the U.S., goes to Europe and Japan, then gravitates to poor countries," says C.K. Prahalad, a strategy professor at the University of Michigan's Ross School of Business and author of *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*. "But now we're starting to see a reversal of that flow."

This topsy-turvy approach could even stir demand in markets that seem tapped out. GE Healthcare dominates the market for big-ticket diagnostic machines, selling 34% of ECG machines now used in hospitals and clinics in the U.S. While some of these customers may also buy a MAC 800, the smaller, cheaper machine will be pitched to a new set of medical professionals—primary-care doctors, rural clinics, and visiting nurses—who need a device they can easily tote or simply can't afford the pricier models. The company projects first-year sales of \$2.5 million in the U.S.

That's a revenue rivulet for GE, which boasted a record \$182.5 billion in sales in 2008. But the company needs every extra dime to meet Chief Executive Jeffrey R. Immelt's pledge to return to

double-digit growth by 2010 and rescue GE's shredded stock, which has fallen 80% from its 52-week high. To conserve cash, the company just slashed its dividend by two-thirds, the first reduction since the Great Depression.

The idea to bring the MAC 800 to the U.S. trickled up from inside GE Healthcare. Last June, Veronica Chew, a GE Healthcare global project manager, had just finished doing market testing in China for the MAC 800. After returning to Waukesha, Wis., where GE Healthcare's U.S. operation is based, she started telling her customers about the new device. After a nurse at a clinic in nearby Menomonee Falls said she could use such a machine, Chew tipped off the executive team of GE Healthcare Clinical Systems. The company began holding focus groups across the U.S. last fall to help it decide whether it made sense to adapt the MAC 800 for the U.S.

Who Wants a Yugo?

In the past, developing an ECG machine from scratch took GE Healthcare up to five years and cost as much as \$2 million. By merely adding a few new features to the Chinese prototype—USB, ethernet, and telephone ports so patient readings can be uploaded—the company slashed its U.S. development costs to \$225,000 while shrinking the time to market to a few months. The MAC 800 could become a prototype for other parts of GE, says Vice-Chairman John Rice, CEO of GE's Technology Infrastructure group. "Often, the trap is thinking that innovation is about making the next iPod or BlackBerry. But maybe it's a simpler, lower-cost version of those. The innovation in all of our businesses now is bringing costs down."

Selling emerging-market hand-me-ups in the U.S. or Western Europe carries risks. The biggest is that the less-expensive products may cannibalize sales of higher-priced goods with bigger markups. Philips Electronics (PHG), for example, is intrigued by the concept of taking low-cost, solar-powered lighting it designed for Ghana and marketing it throughout the developed world. But CEO Gerard J. Kleisterlee has held off to protect Philips' existing product line. His concern, he says, is "hurting margins if you go too far down."

Also, low-priced offerings for lower-income regions often carry a stigma. Even a quarter of a century after the Yugo was introduced as the cheapest car in the U.S., the brand name remains synonymous with shoddy materials and workmanship, and is a reminder that quality is as important as price in industrialized nations. "The Yugo example has stopped so many people from doing this," says Harold Sirkin, a senior partner at management consultants Boston Consulting Group and co-author of *Globality: Competing with Everyone from Everywhere for Everything*. "The key is that these products need to be what the U.S. market wants."

sending innovation managers abroad

Still, the success of basic products in Asia and Africa and the collapse of the Western consumer are prompting more companies to try their hand at trickle-up innovation. Nokia recently researched how young people in Ghana and Morocco share handsets to listen communally to conversations. The company's aim was not only to come up with a more practical phone for Africa but also to work out where to put powerful speakers in the 5800 Express phones released in the U.S. in late February, enabling owners to share MP3 music and YouTube (GOOG) videos with others. "There has been a pull from emerging markets as much as a push into them," says Alastair Curtis, chief designer at Nokia.

Other companies are creating formal processes to streamline ways to borrow from emerging markets. In February, Xerox (XRX) hired two researchers the company calls "innovation managers" who will hunt for inventions and products from Indian startups that Xerox might adapt for North America. And Hewlett-Packard (HPQ) is using its research lab in India to see how it can migrate Web-interface applications for mobile phones in Asia and Africa to developed markets.

At Microsoft, 15-year company veteran Amit Mital heads a similar effort. The impetus was a realization that its Windows XP Starter Edition might have wider applications. The software had always been intended for tech-unsavvy customers in poor areas of the world with low-end PCs.

Microsoft now is incorporating the Starter Edition's simplified "help" menu, with its easy-to-follow how-to videos, into future U.S. editions of its Windows operating system.

Some makers of consumer goods are finding new markets for their developing-world products, too. For Nestlé ([NSRGY](#)), it was taking its Maggi brand dried noodles—a popular, low-fat meal created for rural Pakistan and India that sells for about 20¢ a serving—and repositioning it in 2008 as a budget-friendly health food in Australia and New Zealand. For P&G, it was expanding the customer base of its Vicks Honey Cough cold-remedy syrup beyond Mexico to Western Europe and the U.S.

As GE Healthcare has found with its MAC 800, though, trickle-up innovation requires balance—retaining emerging-world prices while winning over customers spoiled by an abundance of options. To reduce both its weight and cost, the new ECG machine does not have a built-in keyboard. Instead it has a large, 12-button keypad like those used to send text messages on mobile phones. "It's risky," says Michael J. Barber, chief technology officer of GE Healthcare. "But it's an exciting and challenging trade-off."

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