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The art of innovating on a shoestring

DAVID ANGEL

It is often assumed that innovation requires abundant resources, but as companies from developing countries have shown, creativity and a commitment to solving customer problems can be just as powerful a force

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When the topic of innovation arises, more often than not it is companies such as IBM, Sony, Samsung and Nokia that are discussed. These are all excellent companies, of course, and rightly admired for their ability to remain at the frontier of unpredictable industries. They have stockpiled important patents and intellectual property, and their deep pockets afford them the luxury to underwrite research and development laboratories that rival leading universities.

Companies in developing countries enjoy few of these advantages, but we have identified a number that are among the most innovative in the world. These include Haier, China's largest appliance-maker; Cemex, the Mexican cement giant; and Natura, a Brazilian cosmetics company. Each of these businesses has had to overcome a host of factors that impede innovation, including political instability, exchange rate volatility and underdeveloped physical infrastructure. As if this were not enough, they have had to overcome three fundamental obstacles to successful innovation:

1) Most companies headquartered in developing economies lack an established base of intellectual property. Moreover, their host countries rarely provide a solid technology base of trained scientists and world-class research universities.

2) The high cost and scarcity of capital preclude them from building a war chest of cash on their balance sheet to fund basic research and development.

3) Companies in developing countries must eke out a profit while serving customers with little money to spend on their products (on average, per capita gross domestic product in developing economies is one-tenth that of developed nations).

This article focuses on three common strategies that innovative companies in emerging markets consistently employ: they live with their customers; they systematise non-technological innovation; and they spot opportunities locally, but source ideas and resources globally. These strategies, and the examples that illustrate them, may prove helpful to managers anywhere who wish to innovate on a modest budget.

◆ Live with your customer

Innovation, broadly speaking, comes in two varieties: technology-push and customer-pull. Technology-push – introducing new products based on cutting-edge research – is not an option for most companies in developing countries. Instead they must rely on the customer-pull – finding ways to solve customer problems that do not depend on proprietary scientific breakthroughs. Customers in emerging markets, however, are often quite poor, which means that companies must also provide low-cost solutions to serve these customers profitably.

When multinationals enter developing countries, they generally provide slightly scaled-down versions of products tailored for wealthier markets. Their products, however, often miss the mark in solving local customer problems at an affordable price, and managers in distant headquarters lack the local knowledge to understand why. In contrast, the managers who run companies such as Haier and Cemex are deeply committed to understanding the needs of less affluent customers and devising creative solutions to their problems.

Twenty years ago, Haier was rapidly approaching bankruptcy and workers were stripping planks from window sills to take home as firewood. Today, the Qingdao-based company is among the top five appliance makers in the world with 2003 revenues of $9.7bn and the most valuable brand in China. Several factors contributed to Haier's success, but a lynchpin was its ability to understand Chinese customers' needs and tailor products to meet them.

Haier has an extensive distribution and service network throughout China and uses this to gather data on customers. The company's repairmen, for example, discovered that customers in rural areas used their washing machines not only to launder clothes, but to clean vegetables as well. The repairmen relayed this information to the product managers, who asked engineers to make tweaks to existing products, such as installing wider drain pipes that would not clog with vegetable peels. Haier then affixed large stickers on the modified washers, with instructions on how to wash vegetables safely using the machine. This innovation and others (including a washing machine optimised to make goats' milk cheese) helped Haier to win market leadership in China's rural provinces, while avoiding the cut-throat price wars that plagued the country's appliance industry.

Haier's approach to living with its customers has worked surprisingly well abroad, too. In the US, for example, product designers visited the rooms of students to observe how the undergraduates used their refrigerators. They discovered that, in cramped dormitory rooms, students used the small refrigerators as desk and shelf space. Haier responded by developing a model with a fold-out table, which enabled the coolers to double as desks. The new product was a hit.

The Mexican cement manufacturer Cemex provides another dramatic example of living with your customers. Founded nearly a century ago, the company has developed into the third-largest cement company in the world by volume, with 2003 revenues exceeding $7bn.

In its quest to gain a better understanding of the needs of Mexico's less affluent customers, Cemex assembled a team of employees who spent ten hours each day in an extremely poor neighbourhood in Guadalajara. Over the course of a year, the team collected insights into potential customers that would not have emerged out of traditional market research. They noticed, for example, that poorer consumers generally bought cheaper powdered cement in bags, rather than pricier ready-mixed concrete delivered by trucks. In these neighbourhoods, cement is a consumer product. This observation led Cemex to market powdered cement like powdered soap, through consumer advertising and sponsoring local football clubs.

The team also gained insight into the subtle psychological benefits of building that supplemented the obvious functional benefits. Home improvements not only added space, they learned, but also conferred an important psychological satisfaction by creating *patrimonio* – something of enduring value that customers could pass on to subsequent generations. The insight that buildings represented more than simple utility helped the company position cement by appealing to consumers' aspirations to create an enduring legacy that their children and grandchildren could enjoy.

The Cemex team also identified social customs that consumers used to fund home improvements. They discovered that poor Mexicans raised capital for building by organising a lottery in which a collection of families contribute a set sum to a pool. Although the winnings were intended for building, they were often diverted to other purposes. Cemex worked with local community leaders to establish similar financing pools where the winners received building materials (including cement) instead of cash. Cemex also provided the winners with construction advice and blueprints to improve building quality. The programme has helped tens of thousands of families fund construction projects and the company plans to extend it to 800,000 families in the next five years.

◆ Systematise non-technological innovation

Companies such as Novartis or IBM that rely on technology-push can systematise innovation through their management of corporate R&D labs. In contrast, customer-pull innovations generally come from elements of the business model that surround the core technology, including manufacturing, logistics, distribution and finance. Executives pursuing customer-pull innovation must stimulate experimentation across all components of the business model, select the most promising innovations and disseminate them quickly and widely. However, systematising experimentation, selection and dissemination across the disparate elements of the business model poses daunting challenges.

Although its core product has gone centuries without a major shift, Cemex has continuously sought to pursue innovation systematically in other aspects of its business model. In 2000, the company's Mexican unit instituted an innovation committee to stimulate creativity across all aspects of the business. The committee, which includes three vice-presidents, three directors and one outside consultant, has a broad mandate. Rather than simply exhorting employees to be more creative and hoping for the best, the innovation committee follows a structured approach (see table 1).

One example of this is a process called "ping-pong". A team is split into two groups. One proposes an idea, the second improves on the idea, the first further refines it, and so on. The two groups bounce the idea back and forth until they can see no further improvements. The team then structures its final proposals to the innovation committee using a pre-set template that clearly articulates the targeted segment, spells out the practical and psychological (recall the *patrimonio*) benefits to the customer, and quantifies the bottom-line impact through lower costs or higher revenue.

◆ Identify opportunities locally, source ideas globally

Haier and Cemex excel at seizing opportunities that satisfy local customer needs, aspirations and constraints. While these companies serve local customers, they eagerly scour the globe for new ideas. These managers do not simply copy something that worked elsewhere, but instead take pieces of practice or technology and recombine them in novel ways to solve their local customer problems.

Consider the challenge of delivering ready-made concrete to builders, which is a very different market than selling bags of dry cement to individuals. Contractors frequently change their orders at the last minute and Cemex found that, on average, it took three hours between the receipt of a changed order and the time when they could deliver the concrete to the building site. These delays were costly to contractors, who had to delay other activities while they waited for the concrete. Cemex executives realised they could increase their market share and charge a premium to time-conscious contractors (as well as reduce their costs by decreasing unused concrete) if they could reduce delivery time on changed orders.

The team studying the opportunity brainstormed that police, firefighters and paramedics faced a similar problem of reacting quickly to urgent requests from unpredictable locations. To learn more, they visited call centres in the US and studied how they consistently dispatched paramedics within ten minutes despite unpredictable traffic patterns and varied destinations. Based on their research, Cemex equipped most of its concrete-mixing trucks in Mexico with global positioning satellite locators and implemented processes that allowed dispatchers to cut average response time for changed orders from three hours to 20 minutes.

Another example of spotting opportunities locally, but scouring the globe for resources, comes from Natura. Approximately 40 per cent of the company's 2003 revenues of $467m were derived from products introduced within the past two years. Natura achieved this result with an R&D staff of approximately 150 and a budget totaling 3 per cent of net income. Compare this with L'Oréal, the cosmetics group, which spends about one-third of net income on R&D and employs nearly 3,000 researchers worldwide.

Natura follows a customer-pull innovation strategy. The company focuses on serving the particular needs of Brazilian women, an ethnically diverse population with different skin types who live in a sunny and humid climate. The combination of diverse skin types and climatic conditions means that cosmetics developed for homogeneous populations in temperate climates rarely met the demands of local women.

Natura has established close links with research centres and universities in France and the US to license the necessary technology to serve its customers' needs. The company also tracks patenting activity globally to identify ingredients that it can license for use in its own products.

One example of Natura's innovation was its Mother/Baby product line, launched in 1993. At that time, Johnson & Johnson dominated the baby product market, with a 90 per cent share of the market for shampoos, soaps and creams for babies. Natura executives identified an opportunity to link their offering with the Shantala method, a popular technique in Brazil for strengthening the bond between mother and infant that is based around the use of gentle massage. The Natura Mother/Baby line outlined the benefits of practising the Shantala method and provided detailed instructions on massaging infants. The products drew on existing ingredients, some of which Natura licensed from abroad. The unique Shantala positioning allowed Natura to capture significant market share quickly despite Johnson & Johnson's existing market dominance and strong brand name.

Natura holds a monthly meeting between the company's three presidents, its marketing director and the R&D director. The executives use this meeting to generate and discuss new product ideas and any recent technological advances that they have discovered. Natura uses its network of over 200,000 direct sales consultants (similar to the sales representatives who sell Avon cosmetics) to present customers with new ideas or trial products and gain immediate feedback. Consultants call clients shortly after they buy a trial product to determine whether they liked the new item and to solicit suggestions for improvement. This real-time feedback allows Natura to modify products before a full launch, or drop an item that receives negative feedback.

Managers sometimes excuse limited innovation by complaining of insufficient funds, technology or price-sensitive customers. But as the examples here demonstrate, creativity can be just as important a source of innovation as plentiful resources. Moreover, managers can innovate on a shoestring by adopting the practical tools of living with their customers, systematising non-technological innovation, and spotting opportunities locally, while sourcing ideas globally.

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Table 1: The Cemex structured committee approach

■ The committee begins by defining a small set of innovation themes for each year. These themes, called platforms, provide direction to innovation efforts and ensure alignment with corporate priorities. Recent examples have included manufacturing breakthroughs, integrated construction solutions for affordable housing, promoting regional development and making it easier for customers to do business with Cemex. Note that Cemex is not trying to revolutionise the product. Rather, the themes are chosen to stimulate creative thinking in the other elements of the business model.

■ Each year, the committee then selects four to six teams of eight to ten people to identify three significant opportunities consistent with one of the themes, the goal being to generate 12 to 18 potential big innovations annually. For three or four months, the teams devote approximately one-quarter of their time to the project. The exposure to top executives attracts employees throughout the company to apply for these postings. Team members are often asked to implement promising ideas, and these professional opportunities also attract talented employees (and increase their incentive to develop a realistic implementation plan).

■ The committee also structures the innovation process itself. Standardised processes help team members identify market gaps, generate creative solutions and develop actionable implementation plans. The company has developed a set of proprietary tools for stimulating creativity.

Your guide to **Mastering Innovation**

Week 1 September 17
- Introduction
- Identifying opportunities that fit
- Women and innovation
- Discontinuous innovation

Week 2 September 24
- Innovation: myth and reality
- Networks
- Innovation in services
- Innovation in emerging markets

Week 3 October 1
- External corporate venturing
- Innovating for competitive advantage
- Resonance marketing
- Intellectual property

Week 4 October 8
- Customer-focused innovation
- Innovation and the supply chain
- Managing innovation
- Measuring the success of innovation

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