Chapter **Three**

Types and Patterns of Innovation

Innovating in India: The chotuKool Project

Godrej & Boyce, founded in India in 1897, sold a range of products to the Indian market including household appliances, office furniture, and industrial process equipment. In recent years, international competitors such as Haier and Samsung were cutting deep into Godrej's market share for household appliances such as refrigerators, washing machines, and air conditioners, and management knew that to preserve the company would require innovative solutions.

One such solution was the chotuKool, a small, portable refrigerator. Though around the world refrigeration was considered a mature technology, in rural India as many as 90 percent of families could not afford household appliances, did not have reliable access to electricity, and had no means of refrigeration. This significantly limited the kinds of foods they could eat and how they could be prepared. Finding a way to provide refrigeration to this segment of the population offered the promise of both a huge market and making a meaningful difference in people's quality of life. As noted by Navroze Godrej, Directed of Special Projects at Godrej, "We imagined we would be making a shrunken down version of a refrigerator. Make it smaller, make it cheaper. And we had preconceived notions of how to build a brand that resonated with these users through big promotions and fancy ad campaigns."

These assumptions would turn out to be wrong. First, as Godrej's team looked at the options of how to reduce the cost of a conventional compressor-based refrigerator, they quickly realized that they could not reduce its cost by enough to make a meaningful difference.[a] Second, they discovered that having the refrigerator be lightweight was more important than they had previously thought because many rural Indians lived migratory lives, moving to follow the availability of work. Third, because of the lack of refrigeration, most people were in the habit of cooking just enough for the day, and thus had relatively low refrigeration capacity needs. Fourth, of those few rural Indians that did have refrigerators, many did not plug them in for most of the day for fear of

them being damaged by power surges. As Godrej notes, "We were surprised by many things, we were shocked by many things . . . we realized our original hypothesis was quite wrong."[b]

Based on these insights, the company designed a small and portable refrigerator based on thermoelectric cooling (rather than compressor technology). Thermoelectric cooling was the cooling method used in laptops; it involved running a current between two semiconductors. It was far more expensive on a per-unit-of-cooling basis, but it had much lower power requirements and could be used on a much smaller scale than compressor cooling. This enabled Godrej to make a very small, lightweight refrigerator with a relatively low price (35–40 percent cheaper than traditional refrigerators). It also lowered the power costs of operating a refrigerator, and made the refrigerator able to operate for several hours on a 12-volt battery, making it much more adaptable to situations where power was unreliable.

In Godrej's initial plan for the chotuKool, the refrigerators would be cherry red and look like coolers. Soon, however, managers at chotuKool realized that if the refrigerators were just perceived as inexpensive alternatives to refrigerators, they had the potential to be stigmatizing for consumers who, in turn, would not talk about them to their friends. This was a serious problem because the company had counted on word of mouth to spread information about the refrigerators deep into rural communities. To get people to talk about the coolers they needed to be aspirational—they needed to be *cool*.

Godrej decided to revamp the design of the coolers, giving them a more sophisticated shape and making them customizable (buyers could choose from over 100 decorative skin colors for the chotuKool).[c] They also decided to market the refrigerators to the urban affluent market in addition to the rural market, as adoption by the urban affluent market would remove any stigma associated with buying them. To attract this market they positioned the refrigerators as perfect for picnics, parties, offices, dorm rooms, use in cars, and so on.

To get the chotuKool to rural customers would require a dramatically different distribution system than Godrej had traditionally used. However, building out a distribution system into rural communities would prohibitively raise the cost of chotuKool, potentially rendering the product nonviable. The development team was initially stumped. Then one day G. Sunderraman, vice president of Godrej and leader of the chotuKool project, happened to inquire with a university official about obtaining college application forms for his youngest son and the official pointed out that Sunderraman could get the forms at any post office. At that moment, Sunderraman realized that the post office, which had offices in every rural area of India, could be an ideal distribution channel for the chotuKool.[d] It was a very novel proposition, but India Post agreed to the collaboration and soon chotuKools were available in all post offices in the central region of India.[e] As Sunderraman noted, "The India Post network is very well spread in India and is about three or four times larger than the best logistic suppliers."[f]

The chotuKool won several design awards in its first years, and after selling 100,000 units in its second year *Fast Company* gave Godrej its "Most Innovative Company" award. Godrej and Sunderraman were disappointed to discover that it was not as rapidly adopted by rural poor households as they had hoped; the roughly $50 price was still too expensive for most poor rural families in India. However, the chotuKool turned out to be much more popular than anticipated among hotels, food stalls, flower shops, and other small stores because it enabled these small stores to offer higher valued products (such as cold drinks) or to keep products fresh longer, thereby increasing their profits. The chotuKool also became a popular lifestyle product among the urban affluent population who began to widely use them in their cars.

Godrej's experience developing and launching the chotuKool had provided many lessons. They had learned that to radically reduce the cost of a product might require completely rethinking the technology—sometimes even in ways that initially seemed more expensive. They learned that customers who had adapted their way of life to the lack of a technology (like refrigeration) might not adopt that technology even if it was made markedly less expensive. Finally, they learned not to underestimate the value of making a product work for multiple market segments, including those that might not be initially obvious as customers. Though some people considered chotuKool a failure because it had not achieved its original objective of wide adoption by the rural poor, Godrej (and many others) considered it a success: the product expanded Godrej's market share, penetrated new market segments in which Godrej had not formerly competed, and demonstrated Godrej's innovative capabilities to the world.

Discussion Questions

1. What were the pros and cons of attempting to develop a refrigerator for India's rural poor?
2. What product and process innovations did the chotuKool entail? Would you consider these incremental or radical? Architectural or component? Competence enhancing or competence destroying?
3. Did the chotuKool pose a threat of disrupting the traditional refrigerator market? Why or why not?
4. Is there anything you think Godrej should have done differently to penetrate the market of rural poor families in India?
5. What other products might the lessons Godrej learned with chotuKool apply to?

[a] McDonald, R., D. van Bever, and E. Ojomo, "chotuKool: 'Little Cool,' Big Opportunity," *Harvard Business School Case 616–020* (June 2016), revised September 2016.

[b] Furr, N., and J. Dyer, "How Godrej Became an Innovation Star," *Forbes* (May 13, 2015).

[c] www.chotukool.com, accessed June 26, 2018.

[d] Furr, N., and J. Dyer, "How Godrej Became an Innovation Star," *Forbes* (May 13, 2015).

[e] Nadu, T., "chotuKool Offer in Post Offices," *The Hindu* (June 9, 2013).

[f] "chotuKool: Keeping Things Cool with Frugal Innovation," *WIPO Magazine,* (December 2013).