



How “India Inc.” Can Own Frugal Innovation

India’s homegrown innovation culture has the potential to become a globally relevant business methodology.

In our **previous post**, we discussed how Elon Musk’s approach to product design embodies classic frugal engineering principles. Of course, frugal engineering is not an idea often associated with Western markets. The exact constraints that gave rise to products such as the Tata Nano car generally don’t apply in developed economies. In a “first-world” context, and with a market cap of around US\$27 billion, why would Tesla chase frugal solutions?

The answer is that such solutions are fertile soil for disruption, as Musk demonstrated when his company PayPal made a complacent banking industry sit up and take notice. Disruptive innovators across the globe face challenges analogous to the rigors of the Indian market, where companies are working against very harsh resource and demand constraints. The logic of a low cost airline like Southwest as well as “hard discounters” like Aldi are not very distant from frugal engineering thinking. Would-be innovators, start-ups and incumbents alike, would do well to look closely at the frugal engineering practices emerging in markets like India, because these ideas have legs that can carry them a long way, if adapted creatively.

In our book **India Inside**, we argued that India may be missing a trick because a lot of innovation today

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by globally branded MNCs embeds Indian involvement somewhere or other in its value chain, but this is invisible to end consumers. Intel is able, through its “Intel Inside” branding to signal its critical contributions to the products it embeds (in fact, a play on the same idea gave us the title for our book).

The Next Six Sigma?

We also argued, and believe even more strongly today that frugal engineering has the potential to go from forming a part of “must know” practices for MNCs entering emerging markets, to a full-fledged methodology for business improvement à la Six Sigma, Total Quality Management or Zero-Based Budgeting.

Let’s be clear: we are not talking about cute stories of people using washing machines in roadside restaurants to make beverages or hooking up their water pumps to bullock carts to develop a new mode of motorised (well, sort of) transportation. Colloquially, North Indians use the term “Jugaad” to describe such improvised quick fixes or repurposing of solutions from other domains, in response to constraints. Frugal engineering is different: it is a systematic approach to changing the constraints by reframing the problem. It’s the difference between “making do” and “doing more

with less”.

For instance, when Ratan Tata and more recently Carlos Ghosn set an extraordinarily low price target for a car for the Indian market, this meant their engineers couldn't try to make an existing model cheaper, they had to start from scratch by challenging all current methods of car production to achieve the price. Not only have their efforts changed the market, they have also changed how automakers around the world approach car design.

To us, no country is better qualified than India to introduce frugal engineering principles to the world and to take the lead in refining it and disseminating it globally. This is because it is a crucible in which many of the key ingredients for frugal innovation — low purchasing power, deep technical talent, aspiring global firms, and demanding customers — all come together. This is where the Indian government can play a crucial role.

What India's policy makers can do...

Indian Prime Minister Narendra Modi has repeatedly said he aspires to make India a global innovation leader. He has made promoting entrepreneurship and skill development a priority for his new government, and has also appointed a minister for entrepreneurship. Perhaps one of the first orders of business for these new initiatives should be tapping into frugal engineering as a linchpin of India's homegrown innovation culture.

The government can play a critical role in creating a set of standards, a body of knowledge, and a community of practitioners around the concept. Institutes to encourage research and training in codified frugal-engineering practices could be set up, possibly within existing educational establishments. Perhaps it is time for Indian universities to investigate offering master's degree programmes in frugal engineering and related design thinking disciplines. These graduates would be uniquely fitted to be evangelists for this revolutionary method within global companies.

Organisations that master this way of thinking — whether you choose to call it frugal engineering or “first principles” thinking — could be well-equipped to handle a world of disruptive innovation. The question is: Will “India Inc.” step up and brand it?

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