



The man who wrote the book on Frugal Innovation describes the pressure consumers are putting on business to do better.

Interview by Carolyn Drebin

What is 'Frugal Innovation', and why did you decide to write a book about it?

My co-author, **Jaideep Prabhu**, and I wrote a previous book in 2012, called *Jugaad Innovation*, based on the quick and flexible innovation we were seeing in emerging markets like India, Africa and China. These are places where people have big problems but very limited resources, and that combination leads to improvisation and frugality that generate ultra-affordable solutions. For example, \$1,500 heart surgery, a \$2,000 car, a \$200 home solar system and a \$100 school-in-a-box. Jugaad is a Hindi word meaning, 'the ability to improvise a clever solution' in adverse conditions. It's basically the 'MacGyver spirit.' Our research indicated that this clever ability to do more with less was also highly relevant in the West.

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Talk a bit about the demand for Frugal Innovation.

Consumers in developed economies are becoming more value-conscious as well as more *values*-conscious, and this is putting pressure on companies to find ways to do more — and better — with less. Frugal Innovation has two dimensions: From the customer's perspective, people want to buy products that are affordable, easy to use, and eco-friendly; and from the company's perspective, the product must be frugal to develop, using fewer resources (capital, energy, time). The end result is greater value for the customer, the company, society and the environment.

Tell us a bit more about the criteria that define Frugal Innovation.

There are five criteria. The first is Affordability. Since the recession, people have become more thrifty. The next is Simplicity. Everyone wants to simplify their lives. Many people, especially Millennials, are embracing a lifestyle of minimalism. Sustainability is the third criterion. As indicated, people want products that are environmentally sustainable and socially responsible. The fourth criteria is Quality. Just because an innovation is frugal, that does not mean that quality can be compromised, especially in sectors like healthcare. In addition to these four tangible criteria, a frugal solution must embody a Purpose: it must contribute to the well-being of our society.

Can you give us an example of these elements working together in harmony?

One great example is the clothing company **Eileen Fisher**. In a time of fast fashion, this company is pioneering 'frugal fashion': It wants its customers to buy fewer but longer-lasting

clothes and it has a proactive plan to become one of the most sustainable and socially-responsible fashion companies.

In the apparel industry, 97 per cent of garments today are made overseas by poorly-paid workers crammed into squalid factories. But Eileen Fisher is keeping 25 per cent of its production in the U.S. Across all of its manufacturing activities at home and abroad, the company is investing in organic materials, and is trying to eliminate chemical dyes. It is also using processes that rely less on water, paying its contract workers better and offering employees self-development opportunities. Additionally, the company is introducing programs to incentivize people to bring back their old clothing to be 'up-cycled' or re-used. They are even hiring young designers to re-use the fibres from old clothes to craft beautiful new garments.

How does the traditional model of R&D change when companies innovate frugally?

You don't need a big R&D lab and a billion-dollar budget to innovate. Under the old model of product development, it would take years to create, test and launch a product. Frugal Innovation uses a much more targeted and economical approach: Companies zero-in on what customers really want, introduce that product to the marketplace quickly, and continually improve it, based on customer feedback.

Another change in the R&D world is the concept of Open Innovation, which entails sharing knowledge between departments, partnering with start-ups, re-using technologies and recycling knowledge — even amongst competitors. Imagine taking some existing intellectual property and applying it to a whole new domain. For example, **General Electric** took ultrasound technology developed in its

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medical division and applied it to the energy sector, as a tool to inspect oil and gas pipelines.

Another great example is **Ford Motor Company**, which set up a TechShop in Detroit — a do-it-yourself prototyping studio where employees can go to tinker in their spare time. It's basically a playground for adults that is open 24/7. This facility is equipped with 3D printers and advanced tooling equipment, so if an engineer has a disruptive idea, she can go in there, rapidly prototype it, and then show it to her boss and say, 'This is what I was trying to explain to you'. This approach leads to faster approvals than a PowerPoint presentation ever could. Within three years of setting up this TechShop, Ford boosted its patentable ideas by over 100 per cent — without having to invest any more in R&D.

The old model of mass production has become so wasteful that you believe today's companies must 'flex their assets'. Please explain.

Your company's assets should not only create value in terms of new products and services: they should also be operating at optimum levels. For example, older buildings that leak energy and contribute to emissions need to be optimized for efficient energy use. New technology allows existing buildings to be reconfigured to save energy — for example, by having the lights and air-conditioning turn off automatically when a room is empty.

We still have the legacy of centralized mass production, whereby something is built in large quantities in a big factory and shipped in massive containers around the world. What if we 'flexed', or optimized, not just assets like equipment or buildings, but the whole supply chain? The idea is that supply chain assets could be distributed so that, instead of having one centralized factory, you might have several 'micro-factories'. These smaller production units could be

linked to smaller distribution units ('micro-stores'). As a result, a company could sense and respond faster to its customers' needs in a localized way, while saving resources and emissions.

For example, big-pharma company **Novartis**, in partnership with MIT and the FDA, has created micro-factories no bigger than a container, which allow them to make drugs up to ten times faster, reduce operating costs by 50 per cent, and emissions by up to 90 per cent. They also have better traceability for their products and are far more flexible. Many other industries are now adopting the concept of micro-factories—from automotive to bio-medical.

What does it mean to 'hyper-collaborate'?

This is a very radical idea. Today we are seeing an expanding sharing economy for consumers, including car sharing, bike sharing and home sharing. The next phase of this will be business-to-business sharing. The idea is that multiple companies will come together to share resources — and that one company's waste is another's raw material.

In Denmark's Kalundborg Eco-Industrial Park, for example, waste coming from a steel company is used by another company to make cement. Companies can even go beyond mere waste and asset sharing and share their employees, and even their clients and customers. This is a holistic 'integrated ecosystem' approach that recognizes that companies have more to gain by sharing than by competing.

A very advanced level of hyper-collaboration is sharing intellectual property. Electric car company **Tesla** has opened up its patents so other companies can use them to accelerate the transition to electric cars. I think whatever trend starts out as B2C (business to consumer) soon becomes B2B. When you look at Millennials, they don't see a separation between how they act as a consumer and as an employee.

They car share, apartment share — so why not share at work? This is already happening in start-up incubators, and in the next decade, Millennials will rise to power in companies and radically change the corporate culture.

Frugal Innovation is an optimistic way of looking at the global economy. Is it at odds with our current geo-political climate?

We need to take a global view. Emerging markets are growing in confidence. There is a big void left by the Americans when it comes to global leadership, and other players such as China and India are eager to take the centre stage. Frugal Innovation is more relevant than ever today. With climate change, we all need to learn how to do more with less. When faced with adversity, there is even more motivation. We in the West can't afford to be complacent — especially now.

What lies ahead for Frugal Innovation?

In the past, people were brought up to think in a linear fashion — linear supply chains, linear career paths — but Millennials are far more mobile in their approach, and future generations will be even more fluid. That must be taken into consideration by anyone considering a frugal approach. We all have to become more adaptable.

Also, as indicated, companies are slowly starting to share their assets and resources, especially when it comes to sustainability and value creation. Innovation is being democratized. The 'jugaad mindset' says, instead of investing in a Skunkworks-style innovation project, why not just unleash the creativity and ingenuity of your employees and engage with customers and suppliers to co-create a frugal solution? **RM**

From the Landfill to a Spiral Economy

- Turn waste into wealth
- Design multi-purpose products
- Digitally enrich physical products
- Create products that adapt to evolving customer needs
- Get ecosystems to embrace sustainability

6 Principles of Frugal Innovation

1. Engage and iterate
2. Flex your assets
3. Create sustainable solutions
4. Shape customer behaviour
5. Co-create value with 'Prosumers' (consumers who want to be involved in the design of a product or service).
6. Make 'innovative friends'

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