



## Is Lean Frugal?

In July 2012, Nesta, the UK's innovation foundation, published a report, *Our Frugal Future: Lessons from India's Innovation System*. Frugal Innovation (FI) is a response to limitations in resources, whether financial, material or institutional which turns those constraints into an advantage. Through minimising the use of resources in development, production and delivery, or by leveraging them in new ways, Frugal Innovation results in dramatically lower-cost products and services. The low cost Tata Nano is frequently cited as the exemplar of this approach.

Although interest in FI has grown this year, the term frugal has quite a history. The expression Frugal Engineering was coined by Carlos Ghosn, the joint chief of Renault and Nissan, who stated in 2006, "Frugal Engineering is achieving more with fewer resources." Frugal Engineering has developed into the science of breaking up complex engineering processes into basic components and then re-building each component in the most economical manner. The end result is a simpler, more robust and easier to handle final process. It also results in a much cheaper final product which does the same job qualitatively and quantitatively as a more expensive complexly engineered product.

The Dacia Logan, the low cost car which is currently made in Romania, Brazil, Colombia, India, Iran, Morocco, Russia and South Africa, is an example of the frugal approach. It was started by Ghosn's predecessor, Louis Schweitzer and developed at the Renault Technical Centre near Paris via a project which started in 1999.

FI has become strongly associated with the Indian innovation system as the recent Nesta publication suggests. The Hindi slang term 'Jugaad' has become the label for a particular approach to FI. Jugaad is also a colloquial Hindi word that can mean an innovative fix or a simple work-around sometimes pejoratively used for solutions that bend rules or a person who can solve a complicated issue. It is often used to signify creativity to make existing things work or to create new things with meagre resources.

This year three leading Indian researchers, Navi Radjou, Jaideep Prabhu and Simone Ahuja published a book about Jugaad which analyses this approach into six fundamental principles. In October 2012 these three authors published a Harvard Business Review blog encouraging CEOs in Western majors to take up FI as an important tool in addressing current global market conditions.

This looks likely to provoke an interesting debate. Capgemini's Global Chief Technology Officer, Andy Mulholland began to explore the relationship between Jugaad and Lean in an article published in January 2010. He commented, 'Every CIO I speak to recognises that there is a lot of Jugaad going on across their business. Readily available virtual machines or platforms, paid for on a per-use basis, have provided increasingly





technology-literate end users with the ability to do it. So is this classic Jugaad? I reckon so. It accomplishes the immediate objective, but ignores the bigger impact that such improvisation can bring.'

He contrasts this phenomenon which clearly concerns him with Lean Software Development which marries the principles of Lean Manufacturing with those of Agile Development. Requirements must be scrutinised to manage out all possible sources of waste. Mulholland suggests that the Lean principle of empowering people matches the FI approach of putting the power to solve problems in the hands of those most closely involved. Mulholland concludes, 'Adding Lean as the bridge from Jugaad to Agile may be the answer.'



The collaborative approach to Jugaad is developed by Rajnish Tiwari and Cornelius Herstatt from the Hamburg Technical University in their article, Frugal Innovation: A Global Networks' Perspective. They consider the links between Lean, Disruptive Innovation and Jugaad. The goal in FI in their view is the development of innovative products and services that "seek to minimize the use of material and financial resources in the complete value chain (development, manufacturing, distribution, consumption and disposal) with the objective of reducing the cost of ownership while fulfilling or even exceeding certain pre-defined criteria of acceptable quality standards".

Looking at the overlap between Lean and FI, they observe, 'One of the core elements of Lean Innovation lies in defining, structuring and prioritizing "values" for specific innovation projects. While frugal innovations undoubtedly seek to rationalize the innovation value chain.... the end outcome of a lean innovation project need not necessarily be a low-cost product. It takes much more than efficient management of the innovation process to come up with a successful disruptive, game changing innovation.'



The Lean concept of the value chain is likely to emerge as an essential tool for the frugal approach. Lean holds that value always exists in the eye of the customer. With frugal projects this remains true but the boundaries of who the customer might be are extended, usually so that newer poorer customers in expanding emerging markets are brought into the aims of the project. Within a global organisation the best understanding of the values of the target segment for a frugal project may well be well away far from the technical HQ - near the bottom of the organisation. The most disruptive innovations may well come from the front line, the part of the organisation that is closest to the customer.

Developing this thought, Bernhard Doll observes that 'designing and delivering "Frugal Innovation" requires a certain skill set, which is not quite common in many R&D departments of companies across Europe. The starting point is to really understand the customer's job a new product or service should try to get done. Doll recommends that observing the world, understanding



contextual constraints, listening to customers to learn and finding the right blend of embedded value and reduced waste in the product or service to be designed, are all key activities in the “frugal” innovation process.



He explains that ‘a new (human) work culture is required to successfully design “frugal innovation”. Social prototyping, ethnography, realtime collaboration, co-creation, crowd-sourcing, running projects in 5 weeks rather than 5 months are just few examples of effective methods in this domain.’

Approached from this point of view, FI has similarities to another methodology which Nesta have developed and promoted this year – Radical Efficiency (RE) – which has been identified from a series of case studies. RE has been developed in the UK public sector and aims to achieve a dramatic change in value for money in public services which face serious resource challenges. This is achieved by a ruthless focus on the core values of users and a dramatic reduction in cost mostly achieved through a complete overhaul of processes.

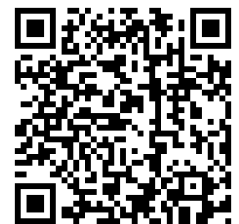
Savings are achieved by:

- Stopping services that have little or no impact
- Identifying and developing new resources especially through user energy and involvement
- Identifying and addressing core problems rather than simply tackling symptoms

The RE approach stresses the importance of building a multi-skilled team which may include ethnographers, a discipline which has also been of value in FI projects. To get a fresh perspective on the core challenge, a variety of tools may be used – horizon scanning, data mining and resource audits

The idea of improving the value stream is at the heart of most of the projects undertaken by Industry Forum. This core approach can be adapted to a wide variety of different contexts. IF Engineers are experts at generating improvement suggestions from right the way across an organisation, including from the basic operational level and customer-facing staff. We also have experience of applying these approaches on a global scale.

Author: Iain Cameron, SMMT Industry Forum



scan with smartphone