

JUGAAD INNOVATION: TAKING INTERNATIONAL PRODUCT LIFE CYCLE TO REVERSE INNOVATION

Dr. Alka Jain*

ABSTRACT

Jugaad innovation is entirely need based innovation, that means innovated and invented as and when required to satisfy an individual or a group's needs. Jugaad innovations are an outcome of creative brains. The word is originated in Hindi meaning an innovative fix; an improvised solution born from ingenuity and cleverness; resourceful. It is also known as 'zizhu chuangxin' in China, 'gambiarra' in Brazil, 'D-I-Y' in the United States, 'Jua kali' in Africa and 'systeme D' in France. The research has been done by Navdeep Rajdou in the book- 'Jugaad Innovation' coauthored by two more- Jaideep Prabhu and Simone Ahuja. They have defined Jugaad innovation as " Innovation based on ingenious solutions, consisting of overcoming limitations and finding effective, often improvised solutions with limited resources "I would like to salute the authors for thinking of the unthinkable and taking jugaad up from the level of mere contempt to the level of innovations and treat it as a subject of management. Though this journey, - from 'mazaak' to 'management' has been very tough for Jugaad. Jugaad is still considered to be a technology of poor or of the community that cannot afford to pay for the rich resources, but the creativity behind this concept has always been ignored until the book has been authored and published in USA and has a place in the library. The author wishes to take the journey of jugaad innovation a little further and establish its relationship with frugal innovation and reverse innovation. A few models have been developed in the paper, which throw light on the future journey of 'Jugaad' in the international market. Difference from frugal innovation has been analyzed and a path to reverse innovation has been predicted.

KEYWORDS: *Jugaad, Reverse Innovation, Indian Innovation, Frugal Innovation, Jugaad Engineering.*

Introduction Jugaad Innovation

Jugaad may seem as a weird strategy as sophistication may be a little less or missing at all, but there is broad scope for the innovation and it can be developed as an art which becomes the basis of a breakthrough growth strategy. Jugaad is a clever as well as resourceful solution to the problem of rising needs of economy. But this is a highly unstructured approach as of now, to commercialize these jugaad innovations, the economy needs to structure and develop an international marketing mechanism for such innovations. Jugaad innovations are less expensive and at the same time, less resource consuming. The jugaad innovations have maximum amount of flexibility in engineering. Jugaad innovators can give more output with fewer resources. They seek opportunity in adversity, and that too with high amount of simplicity. Jugaad innovations are an outcome of scarcity of resources. The society also accepts it as it fulfills their needs. We can see that these individual jugaad innovations are not a threat to the existing market of the original product as these innovations are not marketed as of now at large scale. Their market covers a very small geographical area. But once they are supported with the kind of R & D required, they can swipe out the expensive and less eco friendly product away from the market. In the words of Frederic Giron, VP Research Director, on his blog, "Of the few Hindi words I learned during my stint in India, there is one that I am particularly fond of: "jugaad," which can be translated as "making things work." This is one way to summarize what India is all about - and why India works as an economy, in spite of the gods and despite all of the challenges that India currently faces as a society."

* Professor, Taxila Business School, Jaipur, Rajasthan, India.

Background of the Research

While teaching international business/marketing in a management school in India- a developing country, I was supposed to explain the concept of international product life cycle to the students. The assumption that innovations will start from developed countries only, used to hit the Indian minds and the question was frequently asked in the classes, "Why cannot developing countries like India innovate a product?" This was not in fact a question; this was the frustration of the citizens of a developing country and as a teacher I was continuously looking for a way out to this frustration. 'Jugaad'- the innovative way of fixing up either the damaged things or to produce entirely new object from the parts/spare parts which were produced for some other production purpose is itself an innovation of poor or developing countries to survive with limited resources. The paper attempts to establish a connection between jugaad and reverse innovation.

Methods and Materials

Study of some jugaad innovations from India will be the primary method of data collection for the study. Secondary data will be collected from books and other literature on jugaad and reverse innovations. The frame work of the study will be developed in such a way that a model on 'Journey of Indian Economy- from Jugaad to reverse can be developed. This model will be the final research outcome which will contribute to the uplift of the Indian economy if implemented by the decision makers.

Contribution

Jugaad- a creative innovation has not been respected till today by the marketers and the consumers for its utility in the resources scarced economies like India, where sophisticated products only fail to satisfy the needs of hundred percent consumers as affordability is an issue for middle or poor sections of the society. By developing theories, based on jugaad innovation and showing future hopes for the innovation, then this will be an encouraging step for non-professional or may be illiterate jugaad innovators who are not recognized till now.

Frugal innovation and Jugaad Innovation

When trying to define jugaad innovation, one should not be mistaken to take it as frugal innovation or frugal engineering. These two terms sound similar but are somehow very different from jugaad. Frugal engineering or frugal innovation is defined as the process of reducing the complexity and cost of a goods and its production. (Wikipedia). Moreover, it is meant to supply the products to less developed countries at a lower cost. In this process some luxurious or less important product features can be removed to control the price. The product is also made to last durable at the same time. But jugaad innovation does not aim at supplying to developing or less developed countries, in stead it is originated from less developed or developing countries and these innovations can be supplied to advanced or developed countries. A Jugaad may or may not be very durable but it ensures the completion of the task for which it is innovated. Difference between Jugaad innovation and frugal innovation can be understood better from the following table:

Table 1: Difference between Jugaad and Frugal Innovation

Parameter	Jugaad innovation	Frugal innovation
Durability	May or may not be long lasting	Long lasting and durable
Place of origin	Developing/less developed countries	Developed and advanced countries
Can be supplied to	Developed countries	Developing/less developed countries
Cost control mechanism	Features are not removed but replacement, displacement and fixing up with spares from some other machine is the main mechanism	Features of the innovating product are removed to control the cost
Qualification of innovators	From minimum to maximum level of literacy	Engineers/professionals
Complexity	Very simple	Less complex
Trend	Very old	Increasingly fashionable
Performance	Satisfactory to good	Good enough
Acceptance by universities as a course	No	Yes
Purpose	Survival	Business

Source: Author's analysis

Since India is a developing country and the country's resources are scarce, Jugaad innovation is automated by the needs of the residents of the country. Till now, the jugaad innovation was meant for short term goal achievement for an individual need satisfaction. Now is the time when the importance of jugaad innovation should be recognized and due credit should be given to the Indian 'Jugaad innovators. Indian society has been looking at these jugaad innovators with an eye of contempt rather than respecting and appreciating their genius brains. Moreover, such genius ideas should be commercialized and if required should be patented to stop further exploitation of jugaad innovators. If due consideration is given to brilliant jugaad innovative ideas, the following path of seven steps can be opened for Indian economy in the international markets. You just need to make these jugaad innovations sustainable with a little support and see that international horizon is open for them.

Levels of Jugaad Innovation

Jugaad is not always fixing up the things, but the definition can be advanced further to the following level where fixing up stands at one or may be zero level. The following three levels can be understood when we talk about jugaad innovation.

- **First Level:** Any how to survive is the purpose/the basic need is to be satisfied anyhow. Spares from the waste can also be taken or from more sophisticated products can also be extracted. These 'jugaads' may or may not take an exit to the commercial market.
- **Second Level:** Reassembling/reusing the spares from various machines (which were not meant for the purpose of need satisfaction which the jugaad product is hinting at) for a better need satisfaction with minimum resources. Indra Nooyi is considered to be a jugaad innovator of this category by the authors of the book- 'Jugaad Innovation'
- **Third Level:** The need is thought to be unsatisfied for long and engineers of the production industry have not yet been able to produce a product for the particular need satisfaction and a non-professional provides with a solution. An entirely new concept is born out of the minds of jugaad innovator. A live example has been given Vijay Govindrajan of a clay fridge invented by an Indian villager in a desert, which does not need any electricity.

Opportunities for Jugaad Innovations in International Markets

Jugaad, if treated as a real innovation or innovated product for marketers, then the following path may be seen as its journey in the markets internationally:

- Country resources are scarce and this leads to automated jugaad innovations. If the jugaad innovation is successful,
- Develop Jugaad innovations for domestic market
- Market the jugaad innovation in other developing and developed countries
- Manage demand and supply of jugaad products/services
- Control and manage the demand and supply mechanism
- Foreign currency and innovating reputation in the international market

The steps can be better understood in the model given below.

Diagram 1: Process of Marketing of Jugaad Innovations



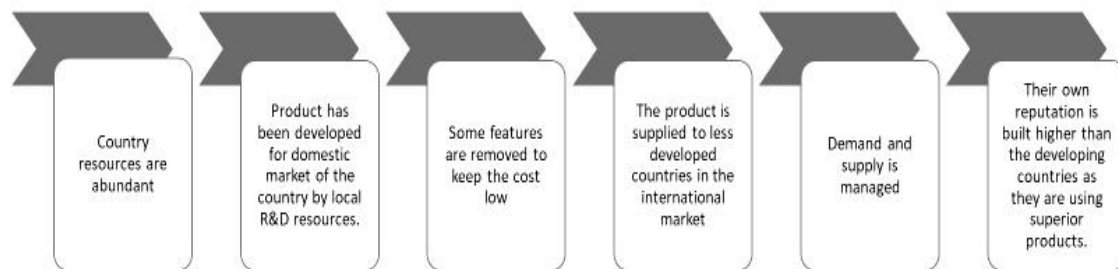
Opportunities for Frugal Innovations

Whereas for frugal innovations the journey will be different, because the origin is different for frugal innovations:

- Country resources are abundant
- Product has been developed for domestic market of the country by local R&D resources.
- Some features are removed to keep the cost low
- The product is supplied to less developed countries in the international market
- Demand and supply are managed
- Their own reputation is built higher than the developing countries as they are using superior products.

These steps have been shown in the following model:

Diagram 2: Process of Fugal Innovation



Source: Author's analysis

The above analysis gives us a hint that jugaad innovation will work for harmony and equity in the global corporate world, whereas frugal innovation will raise the gap between less developed and advanced countries. Frugal innovations will differentiate the country in terms of the quality of the products. Hence frugal innovation should not be encouraged, rather jugaad innovations should be encouraged to follow the path of reverse innovation in the international market.

Reverse Innovation

According to Vijay Govindarajan and Chris Trimble research innovation shows leaders and senior managers how to make innovation in emerging markets happen, and how such innovations can unlock opportunities throughout the world."

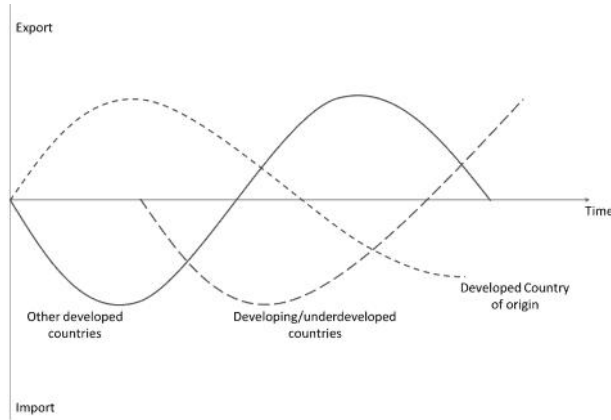
Vijay and Chris have noticed five paths of reverse innovation.

- **The Performance Gap:** because of their low incomes, customers in poor countries are prepared to make significant sacrifices in performance.
- **The Infrastructure Gap:** Rich world infrastructures are fully built; emerging economy infrastructures are under construction. Indian telecoms are leapfrogging to wireless technology in the absence of land line phones.
- **The Sustainability Gap:** Poor countries face many of the most daunting sustainability challenges on the planet, but poor countries are often more eager than rich ones for next generation environmental solutions. For example, electric cars in China
- **The Regulatory Gap:** New products may pass through regulatory hurdles in poor countries faster than developed countries.
- **The Preferences Gap:** Each country has distinct tastes and preferences, for example prevalence of lentil-based foods in India.

While keeping jugaad innovation in mind, we should note that these five paths are not gaps they are infact the yardsticks. Actual reasons of growth of jugaad innovation are low level of income, a smaller number of manmade resources, plenty of natural resources, the psychology of using, reusing and reusing before finally sending it to dustbin. Infact Indians do not have this concept of 'trash', as everything can be reused as per their life style and social psychology. Even after throwing it to a dustbin does not make the object completely useless. Not a very good sign, but the objects are taken away from the bins for reuse by lower sections of the society.

To understand the concept of reverse innovation, we need to understand the concept of international product life cycle first.

Diagram 3: The Concept of International Product Life Cycle



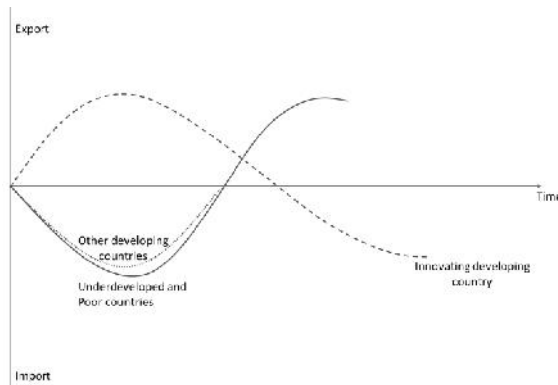
Source: Philip Cateora and Pervez Ghauri (2009) 'International Marketing'

The Diagram 3 explains how a product travels internationally after its innovation in the developed country. The IPLC stands on the assumption that developed countries will innovate first and invent any new product in the world first, which will be bought by the developed countries first and developing countries at the second stage. Later the developing countries will start producing the same product and will be in a position to export the same product to the inventing country. The reason behind this assumption is in terms of the infrastructure and resources available in developed nations. They are rich countries, so they can afford to go for expensive R&D required for any innovation. But as they are capital intensive countries, the manufacturing is taken over by developing or less developed countries as they are comparatively more labor intensive. Human resources are available at lower cost and hence production is accepted by the economy also as it brings employment to the citizens. After understanding the concept of international product life cycle, we can define 'reverse innovation' as innovations taking place in the developing countries and marketed to rest of the world including prosperous and advanced nations.

From Jugaad to Reverse Innovation

Present economic world is in the transition phase and we are moving from set of various scattered economies to a global village- a better connected economies and united economy as a whole, the above concept has to dilute as many gaps between the two levels- developed and developing economies, are disappearing. When this is happening, the basic assumptions of IPLC also have to change. Now not only developed, but developing or less developed countries may also innovate and this will be a very fortunate sign for the local as well as global economy. If in the above diagram, the innovating country is to be replaced by a developing country, rather than a developed country, then the life cycle of the product will have to change. The predicted international product life cycle has been shown below for the jugaad innovations:

Diagram 4: Initial International Product Life Cycle of Jugaad Innovations

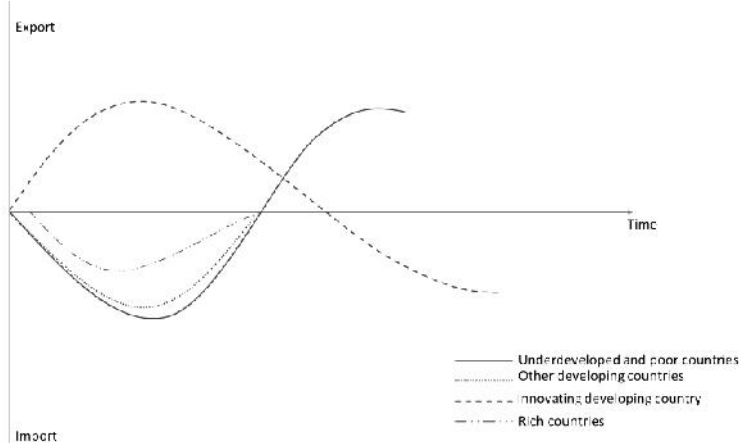


Source: Author's analysis

As the Diagram 4 explains, the first curve of local innovation will never touch the X-Axis because the country of origin (the developing country) will never tend to import the goods, as foreign currency is scarce with them. And other joining hands in buying jugaad products will be either less developed/poor or developing countries only, because the customer needs and abilities are similar in both the countries. In a further step, developing country may tend to export the jugaad product and the curve may be developed similar to domestic product life cycle curve in the import domain, upside down. One point should be noticed that the developing country may stop purchasing it in near future but will seldom decide to produce and export unless and until the innovation is easy, simple and inexpensive to copy and produce. On the other hand, less developed or poor countries would love to produce and consume these low-cost innovations and the curve for them may grow in the import zone same as developing countries but may grow further to export zone to produce and export. In such a situation, poor countries and developing countries will behave exactly the way rich and less developed countries behaved in the traditional innovation IPLC. Now rich or advanced countries may also be attracted towards Jugaad innovations but the demand may be very less, almost zero and does not show up in the IPLC of jugaad innovations initially.

But later on, if the products are accepted globally, as an effect of global customer uniformity, then they may show up in the graph of IPLC but will remain in the import area only. Rich countries will never tend to produce and export the jugaad innovations, because they follow a structured system of innovations, exactly opposite to jugaad's unstructured innovation. And at a later stage the ILC may show like this:

Diagram 5: International Product Life Cycle (at a later stage) for Jugaad Innovation



Source: Author's analysis

As the Diagram 5 suggests that at a later stage, jugaad innovation will follow the path of reverse innovation, where no gaps will exist, less resourceful economies will work for less resourceful or poorer economies. Rich economies may also join if they wish, but their behavior may be a little arrogant also towards such products, because these innovations are meant for poor or less developed countries.

Conclusion

In this new era, the developed rich world needs to give up the traditional thinking that poor countries will remain poor and cannot uplift themselves, instead a new thinking of treating them as target customers has spread among many industries like cosmetics, readymade garments etc. But now the innovation reversal can also be a new path for them and Jugaad, which is a breakthrough growth strategy, can be the engine of the train on this track.

In Vijay Govindrajan's words, "Extreme conditions are fertile soil for extreme innovation." Jugaad is a kind of extreme innovation, when your pocket does not allow you to buy a particular product, but you need it on urgent basis, in that case, the tendency is to satisfy that need with whatever resources are available with you will develop. You either reassemble, rearrange or fix the spares/resources to satisfy the need. He also opines that jugaad is the economics of scarcity because scarcity is the mother of invention.

Jugaad is a resourceful engineering as it reuses and recombines, keeps the product asset light. Jugaad innovation conveys the message that being structured and large in scale would not always mean that the innovation is big, low cost resources can also give good quality products.

Findings and Suggestions

Jugaad innovation should be seen as complimentary to existing engineering or innovations. Navi Radjou gives the following suggestions to the companies for jugaad management which can help them find abundance in scarcity. He suggests compensating frugal performance which will encourage producing more with less. He suggests creating separate brands for these affordable offerings. I would like to replace the frugal performance with jugaad innovative performances. Incentives can be introduced to sell jugaad products; Jugaad innovators can be offered partnerships or high incentives in the company. The jugaad innovators should be encouraged to create ecofriendly products. At times improvisation should be encouraged rather than planning, because jugaad innovators have been thinking what was never thought till today. If needed, the decision makers should change rules and values to promote jugaad.

Further Scope of Research

These levels of jugaad innovation can be further applied on different levels of products. Five levels of products given by Kotler can be used and then three levels of jugaad innovation, when associated with these five levels may develop new theories of reverse innovation and ultimately the international product life cycle.

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