

Frugal Innovation

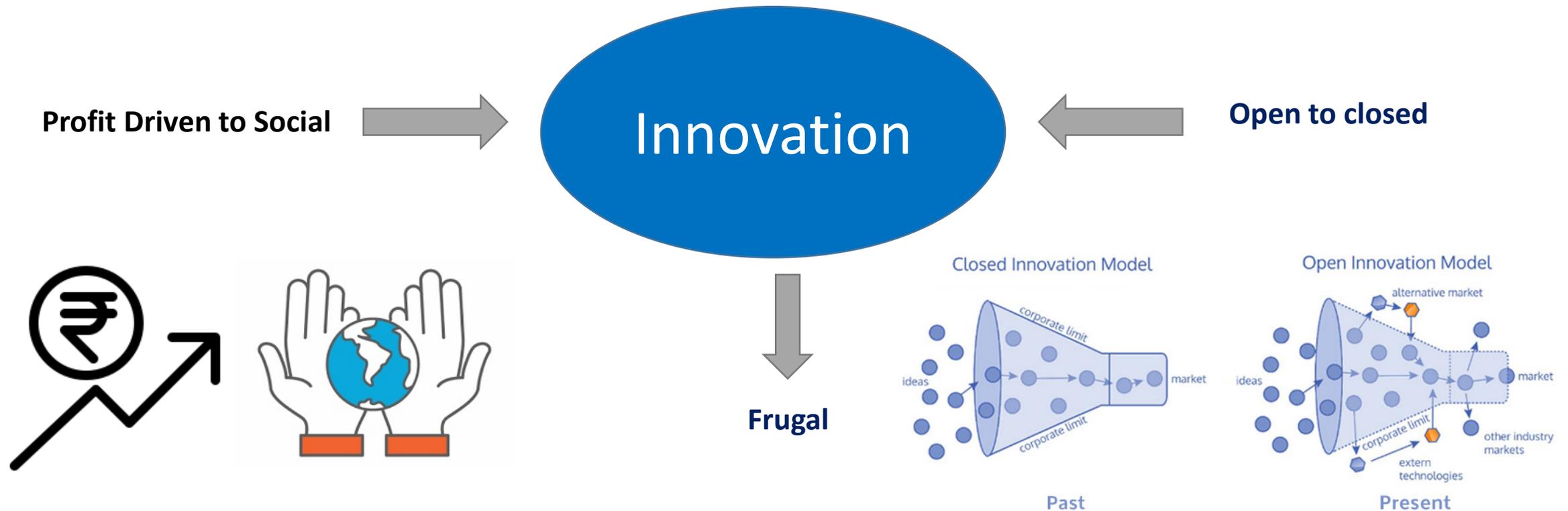
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Introduction

Innovation

- The study of innovation has been subject to various paradigmatic shifts in the recent decades.

Frugal innovation is the transition between these paradigms



Introduction

Frugal Innovation:

Mitticool refrigerator



Drip Irrigation



Water purifier



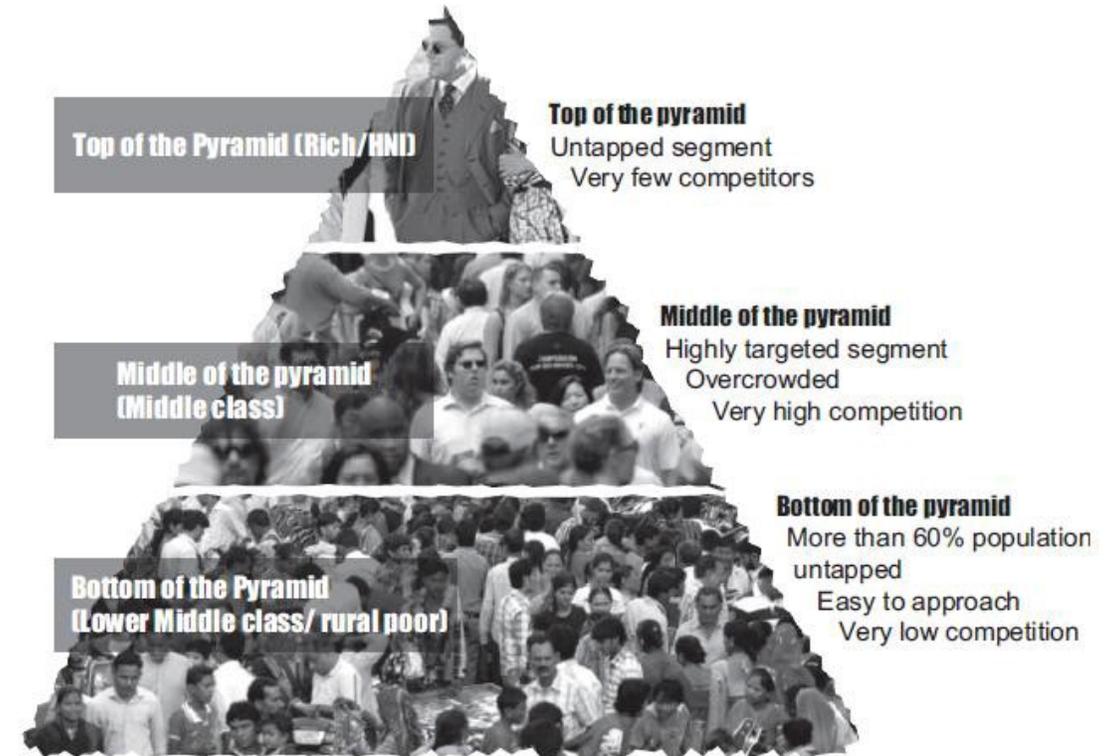
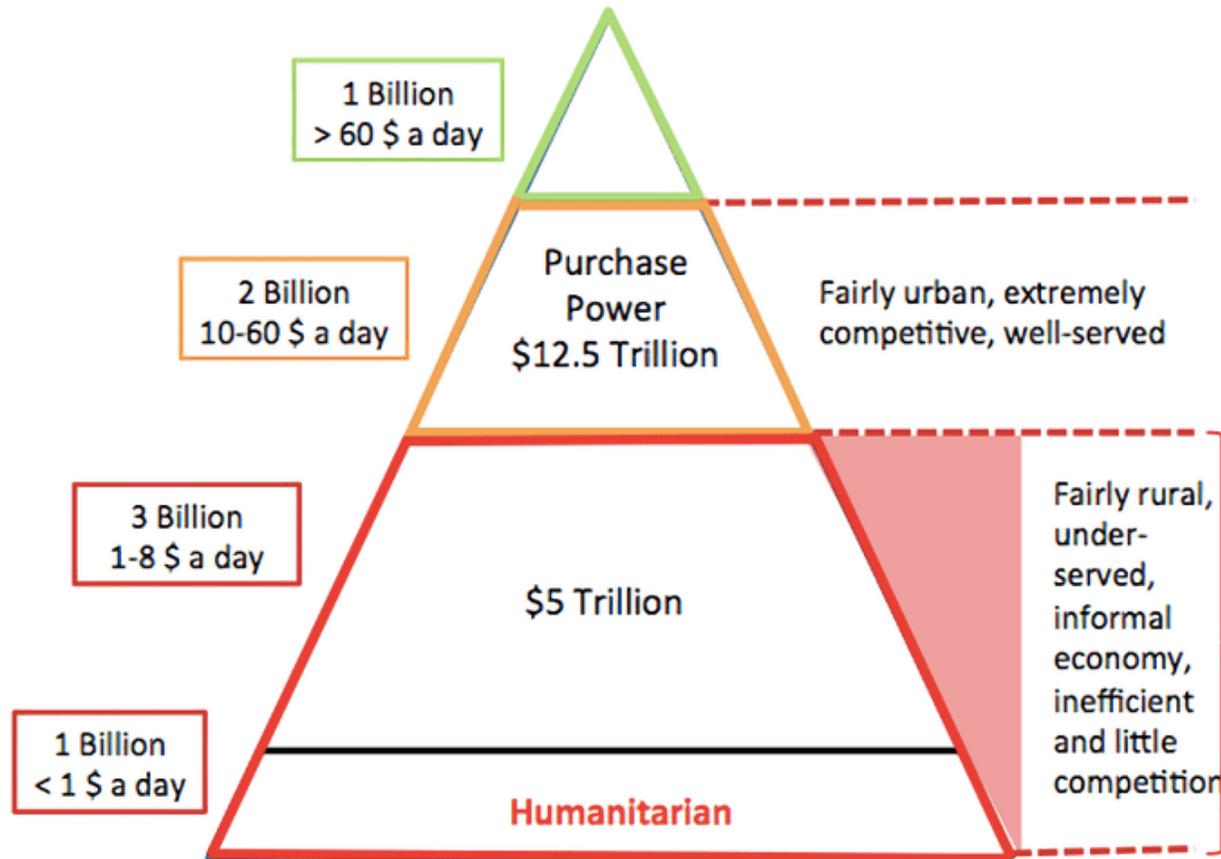
<https://www.thebetterindia.com/180198/innovation-transform-villages-health-water-solar-farmers-rural-india/>
<https://www.cfia.nl/news/drip-irrigation-systems-and-money-maker-pumps-inclusive-frugal-innovations-or-tools-for-the-happy-few>
<https://mitticool.com/wp-content/uploads/2018/11/MittiCool-Refrigerator2.png>

Introduction

Definitions : Frugal Innovation

- 1. Product oriented** : Frugal innovation is characterized by : **low price, compact design**, use of limited raw materials or reuse of existing components, **ease of use** and use of cutting-edge technology to **achieve lower costs**.
- 2. Market oriented** : Frugal innovation refers to those innovative products and services which are **developed under conditions of resource constraints**
- 3. Criteria oriented** : Innovations are frugal if they simultaneously meet the criteria of substantial **cost reduction, concentration on core functionalities**, and **optimized performance level**

Bottom of the Pyramid



BOP: 5 trillion worth of purchasing power

Barriers in BOP markets...

- High Distribution costs (Due to poor infrastructure)



Barriers in BOP markets for an agricultural product

- Scattered villages → **service cost is high** for durables
- Difficult to penetrate (+5%) **remote villages**
- Small scale growers are decentralized
- Uncertain cash flow → BOP cannot pay upfront/poor
- Local knowledge and local trust
- Mismatched priorities → **clean water vs cell phone**
- Local knowledge and Trust → microfinance
- **Low margin and high volume difficult to achieve**

How to decrease distribution costs in agricultural products

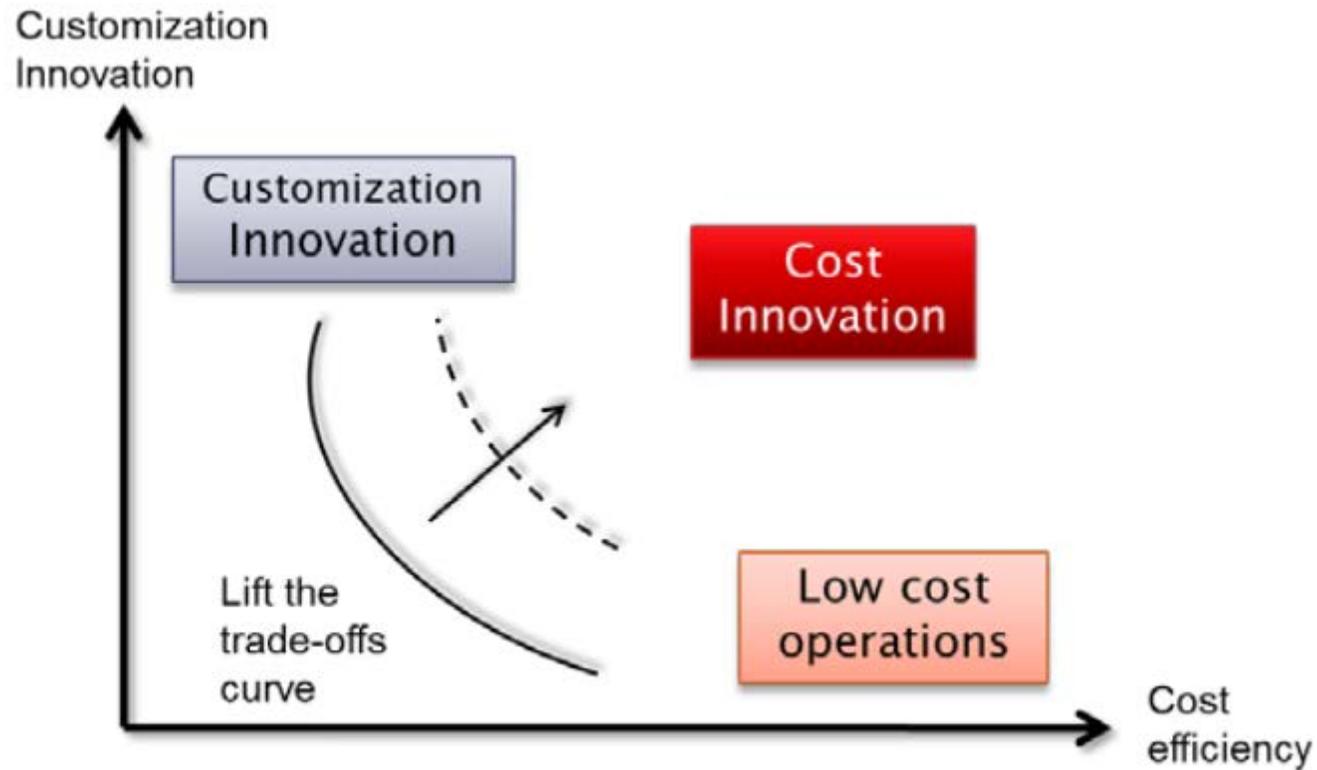
- Get local input (raw material...)
- Organize the suppliers in groups
- Coca-Cola in Uganda and Kenya for its juice organizes small farmers, gives them training
- Walmart in India to make cold storage
- Use technology for delivery, if possible
- Use existing network of distribution → post office

Frugal innovation compared with cost innovation

In contrast to cost innovation, **frugal innovations are not re-engineered solutions but originally developed products or services for very specific applications** in resource-constrained environments.

Frugal innovations based on new product architectures are often quite disruptive.

Cost Innovation



Cost innovation as a way to lift the trade-off curve

Frugal vs Cost vs Reverse Innovation

Novelty of Solution

Frugal innovation

Novelty of Solution **Technical** : Medium to high
Market : Medium to high



ChotuKool is a frugal innovation of a Refrigerator

Cost innovation

Technical : Low
Market : Low



Telecom Revolution of India because of low prices

<http://www.mobilityindia.com/gsma-urges-indias-telecom-commission-to-reduce-spectrum-auction-reserve-prices/>

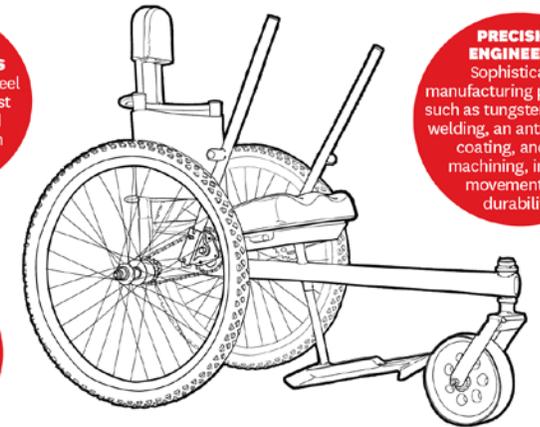
Reverse innovation

Technical : Low to medium
Market : Low to high

U.S.-Focused Upgrades to the GRIT Freedom Chair

EASY-TO-REMOVE PARTS
The seat back, wheel hubs, and footrest can be released quickly and with one hand.

COLLAPSIBLE
The chair comes apart so that all the components fit in a car trunk.



PRECISION ENGINEERED
Sophisticated manufacturing processes, such as tungsten inert gas welding, an anticorrosion coating, and CNC machining, improve movement and durability.

SOURCE: AMOS WINTER AND VIJAY GOVINDARAJAN; DIAGRAM BY GRIT/NATHAN COOKE FROM "ENGINEERING REVERSE INNOVATIONS," JULY-AUGUST 2015

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Freedom chair initially developed as frugal innovation for poor people (disabled)

Typical Traits

Frugal innovation

- Cost effective raw materials
- Local sourcing
- Local production
- Standard components and commodities
- Reduction of size
- New applications (eg. Portability)
- Tailored for environments with poor infrastructure)

Cost innovation

- Cost Effective raw materials
- Local sourcing' and Local production
- Standard components and commodities
- Smaller package size

Reverse innovation

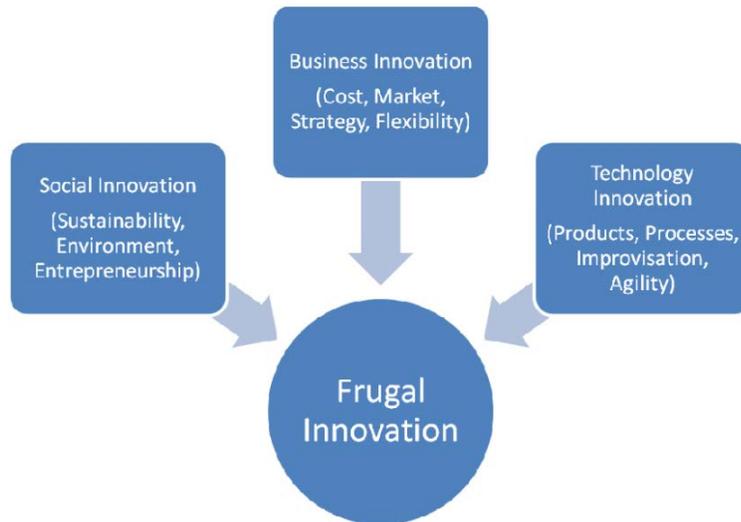
- Same as Frugal and Cost Innovation

Innovation Strategy

Innovation Strategy

Frugal innovation

- Application Innovation
- Cheap, specialized new solution



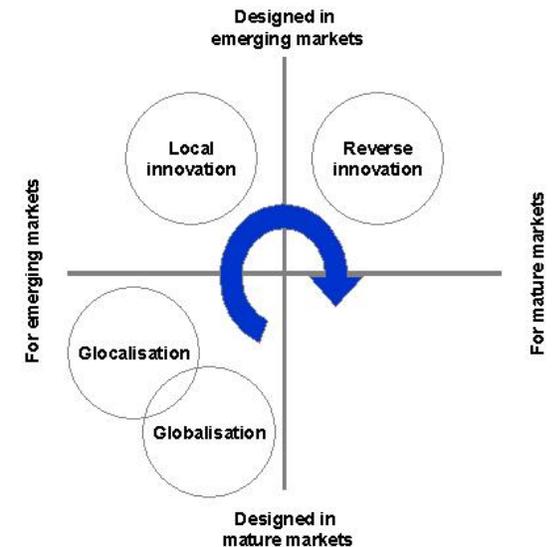
Cost innovation

- Cost cutting
- Cheaper , existing solution



Reverse innovation

- Cost Innovation, Frugal innovation with global launch
- Cheap and frugal solution for global market



Target Customer

Frugal innovation

Initially : First-time/ severely resource constrained customer

Potentially : Efficiency seeking high income customer

Cost innovation

Initially : First-time / resource-constrained customer

Potentially : efficiency seeking high income customer

Reverse innovation

Resource constrained or efficiency seeking customer

Target
Customer

Summary

- A true comparison between the different innovation strategies can be derived from the consumers affected by that innovation.
- A frugal innovation adds value to the product functionality while a cost innovation may not add any functional value but reduce the price of the product up to such extent that it create disruption in the market.
- Reverse innovation takes benefit of a frugal solution developed for less resourceful market and hence an obvious candidate for sustainable innovation

References

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Thank You