

Juggad & Frugal Innovation

K. Munshi

Professor, IDC, IIT Bombay
Director CTech Labs Pvt. Ltd.
Powai, Mumbai – 400076

munshi999@yahoo.com

www.ctechlab.com

Is This Juggad ?



Juggad

Which one of these products is a Juggad?

We must differentiate between a

traditional & cultural product & modern day contrived product



Juggad

Juggad is a reaction and a challenge taken up by the needy to the non-response of the organised sector / social sector, governments to their own needs, needs of the ordinary people and special people



Juggad Classification

Improvisation – Satisfy the need with whatever is available
(use available product for other than its normal application without any modification)

**Adaptation
Innovation
contraption**



Using drilling Machine as blender



Making tea with welding torch

Juggad Classification

Improvisation

Adaptation – use an available products for other applications with some modification

Innovation

Contraption



Juggad Classification

Improvisation

Adaptation

Innovation – Totally different and imaginative way of putting together various elements to satisfy a need. It has a potential for developing into a new innovative product

contraption



Juggad Classification

Improvisation

Adaptation

Innovation

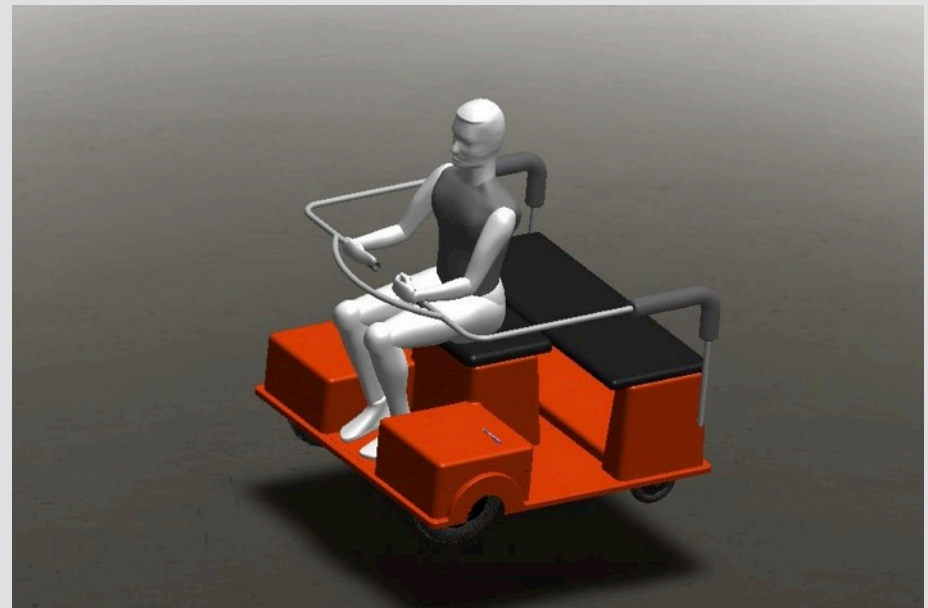
Contraption – Assembly of parts (generally from discards /junk markets put together to make it work somehow. It is crude and inefficient



Juggad as a contraption is an important intermediate step in new product development

E-platform

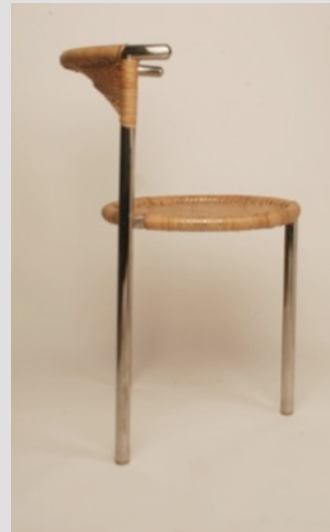
Contraption made of plywood, steel sections put together with wheels / electric motors / batteries to prove the e-Platform vehicle concept & its working



Frugal Innovation



Well considered & fairly refined solutions
Minimalistic use of materials
Optimised functionality
No redundancy





जुगन
JUGNoo

*Rechargeable
lighting
devices*

e-Lantern

run for 5-8 hours on one charge

Hassle-free charging

Can be charged by **3/ 6 W Solar panel**

It can also be charged by Nokia Type mobile charger from the mains supply of 220VAC.

Almost Zero running cost

Hawker Light



e- Candle



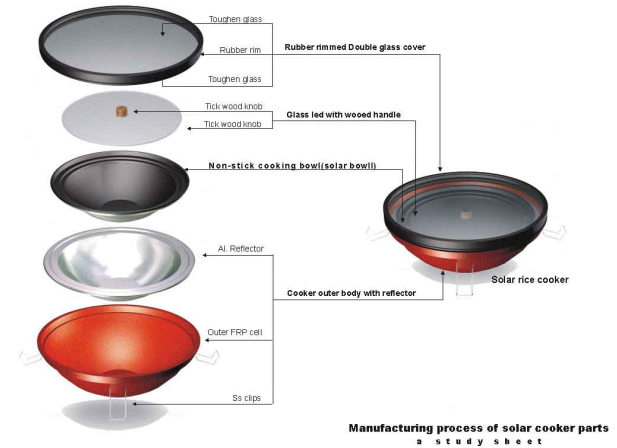
CTech / IIT Bombay product

Frugal Innovations at CTech



SOLAR RICE COOKER CUM OVEN

Hassle Free



A CTech / IIT Bombay product



Single dish cooker

Cooks a meal in 3 hours

Solar Oven

Weight: 6 Kgs

4 persons

Teflon coated

Frugal Innovations at CTech

Functionally and stylistically refined and optimised electric scooter design with no redundancy

Ultra light weight

Minimalistic Unibody FRP construction

No metal Chasis

Vibration & fatigue resistant

30 KM range



e-Scooter

e-Trike



CTech / IIT Bombay product

Frugal Innovations at CTech

Hygienic Rural Toilet (dry sanitation system)

Hygienic dry sanitation system (which avoids direct discharge of excreta into the nearby water bodies or on to the open lands). To come up with a sanitation solution catering specifically to the needs of rural India with water shortages which is **cost effective, manageable, modular**, (i.e. portability, flexibility, ease of manufacturing, deployment and maintenance) and **sustainable** (derive economic benefit by making fertilizer for their fields)

Waterless – No flush system

No chemicals, enzymes – **No external additives**
Aids & accelerates **natural process of decomposition**

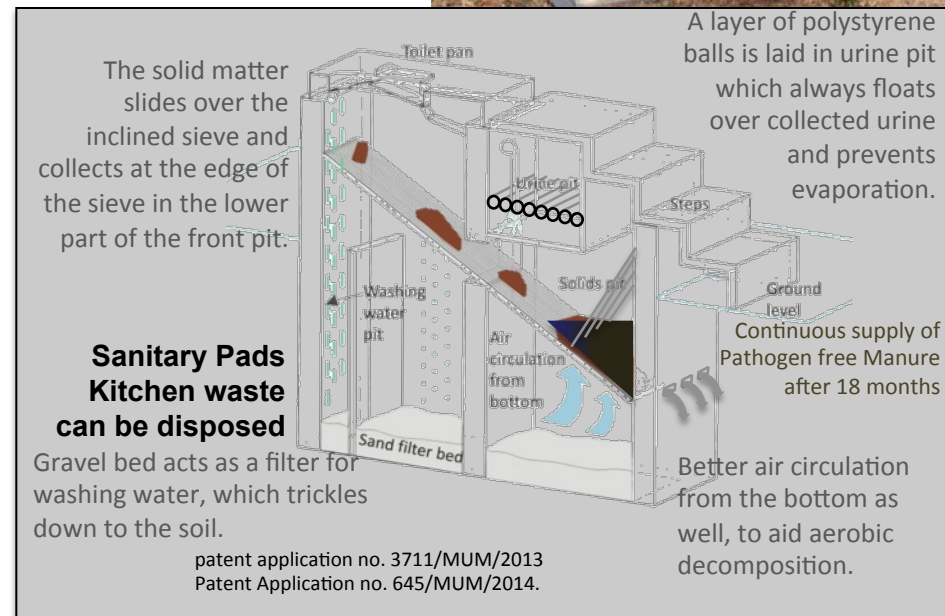
Women friendly – help in disposing sanitation pads

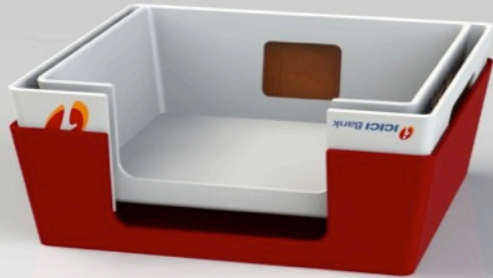
Elderly friendly

Utilisation of **waste as fertiliser**

Bring science to empirical level – easy understanding
(No mystery)

2012 - 2014





Rural Bank Module

2.5 x 2.5 m portable office

For rural banking operation

Dismantled into 3 parts nesting into each other

Transported by a small truck to the site

Erected in 10 minutes

