SUBSISTENCE DESIGN

DESIGN RESEARCH SEMINAR
REPORT 2017

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Approval Sheet

Design Research Seminar Course
“Subsistence Design”

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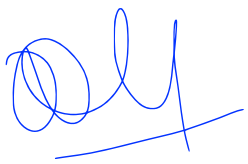
is approved for the partial fulfillment of the requirement for the Post Graduate degree in Industrial Design.



Project Guide

Declaration

We declare that this written submission represents our ideas in our own words and where others ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all the principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Introduction

The word “design” is generally associated only with intricate, exclusive and expensive products. In the marketplace, names of top designers are used to sell overpriced products in all fields be it cars, aircrafts or even handbags.

However, design is not the exclusive preserve of overpaid designers sitting in air-conditioned studios. Often, common folk faced with recurrent problems come out with elegant and low cost solutions involving the modification of existing products. Manufacturers of everyday items are often surprised to see the innovative and unintended use of their products. Smartphones, Whatsapp and internet ensure that such design ideas are widely communicated and replicated. In view of the usefulness and popularity of these home grown products, mainstream designers have been forced to acknowledge the existence of this genre of design which is classified as “Subsistence design”, “jugaad” and “frugal innovation.”

The aim of the present project is to examine the design efforts of the common people who are not design literate academically but who design products for the specific needs of their particular communities from the resources available to them, mostly on a shoestring budget.

What is Subsistence Design?

Subsistence design can be defined as a design or designing an innovative use/application for an already available product and to use/ adapt it in a radical way by which it enhances the productivity of the user or creates a new source of income.

It can also be defined as using an available product in a new way to adapt or survive in the market without changing or modifying any physical component of the product.

Subsistence design is mainly used by the people at the bottom of the pyramid because subsistence design is about overcoming day to day constraints in life to create new ways of utilising a product for survival or better results.

Many examples of subsistence design can be seen in our day-to-day life. Even Epson people were surprised to find that photographers were using the mini Epson printer for giving instant photos to tourists at tourist destinations. One can see that the Epson printer has not been modified or changed, it serves the same purpose that it will serve in a studio or shop – only the innovative mind of the user has pulled out the technology from the studio and has used the same implement in an open space to provide instant photos to the public in minutes.

Subsistence design is about adapting technology to survive in a difficult situation and create better opportunities for earning. Subsistence design benefits not only the primary user but also the secondary user. In the example quoted earlier, the buyer who gets the photo in few minutes is also a beneficiary.

Many companies have come up with such innovations which are global and disruptive and many others get inspiration from such ideas and adapt such ideas for their own use. But till now such designs have not been identified or catalogued properly. Even calling such ideas “design” is controversial because it is not design in the true sense - ultimately it is only adaptation of existing products.

Design with a focus on enabling livelihoods with low investment or improving the earnings with imaginative use of products.
A design approach that give weight to this aspect. By naming it subsistence design, we intend to emphasize this aspect more than other aspects.

There is a need for products that enable a way to earn a living or a more profitable way to earn.

Such products can be said to be in this category of “subsistence design”. At the moment, we do not find that designers give sufficient thought to this category. The aim of this exploration is to bring this aspect in focus.

At the Gateway of India, Mumbai, many tourist photographers were seen using Epson printers for instant photo print outs. In earlier times, the photographers had to spend time and money to print photos and deliver them to customers by post which would take at least 7 to 10 days.

The tourist photographer is taking out the printer out of his bag

He is seen holding the Epson printer, inserting the photo paper inside

He inserts his DSLR memory card into the printer

He presses the button to start the print of the photo

He takes out the photo print

He then covers photo with a transparent sheet and hands it to the customer

Common scenes at Gateway of India, Mumbai

Customers eagerly wait for instant photo print out

Chhakda

A heavily loaded chhakda is a ubiquitous sight in Saurashtra

Travelling in rural Saurashtra in Gujarat isn't very exciting - all around you are miles upon somnolent miles of a dusty grey landscape.

The monotony is relieved by a chhakda, a rugged multiple-use vehicle that requires negligible maintenance, has a high load-carrying capacity (can carry up to 30 passengers) and a higher fuel efficiency of 35 km to a litre of diesel. The chhakda is virtually the lifeline of Saurashtra. Nearly 18 lakh people use them for commuting every day in Gujarat, most of them in the 6,000-odd villages of Saurashtra. With fares of Rs 2-3 to go from one village to another, it is a cheap mode of transport. As many as seven lakh families earn a living from the chhakda. The owner takes home around Rs 350 at the end of the day.

The best thing about the chhakda is its ready availability. When conveyance is needed at short notice - whether it is to take a woman in labour to hospital or to to take a dead body home - the chhakda is just round the corner. It's a rattling drive but in an emergency, the best option.

It was designed in 1972 by Jagjivan Chandra, a garage owner whose son Jayantibhai Chandra now heads Atul Automobiles, the Rajkot-based company that produces most of the chhakdas plying in rural Gujarat. Jagjivan's inspiration when designing the chhakda was the Maharaja of Jamnagar's golf car, a proud acquisition during the Raj.

The chakda's reputation as a utility vehicle is beginning to drive it beyond Gujarat's borders. An official of the Andhra Pradesh Government was so impressed that he introduced the chhakda in his state as part of an employment-generation scheme.

Jayantibhai has now begun exporting chhakdas to East African countries and Bangladesh where many are finding it very handy in rural areas.

JP Ustad Coffee Cooker

A pressure cooker with a modification that only costs Rs.200 and you've got an espresso machine!

Conventionally, pressure cookers have been used only for making food. However, Mohammed Rozadeen, 54 of Motihari, Bihar has modified the ordinary cooker to convert it into an espresso / cappuccino coffee making machine. The modified cooker is used to boil water and generate steam. Through a long delivery pipe having a regulator, high pressure steam is used to make frothy, tasty coffee.

Fabricated from locally available material, this coffee cooker consists of an ordinary pressure cooker fitted with a copper pipe, a pressure releasing valve actuated by moving a lever (screw driver originally used). The copper pipe along with a valve has been fitted on the top of the lid by This copper delivery pipe transfers the steam generated inside to a container outside.

Water is heated in the cooker. Once sufficient steam pressure is reached, it is released by moving the lever upwards. The delivery tip of the copper pipe has been constricted to create more pressure at the point of release of steam. The safety valve below the handle and the whistle has not been touched. Mohammed Rozadeen has named it as 'JP Ustad Coffee Cooker'.

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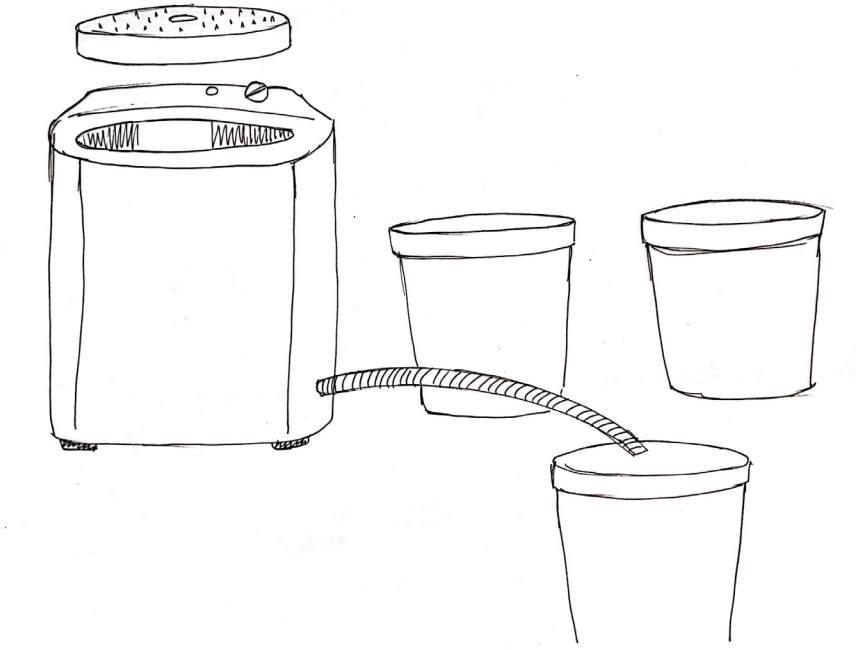
Lassi Washing Machine

Houses in rural Punjab often use their top loading washing machines to churn curd and make lassi. In Ludhiana, an innovative lassiwala commercially sells his 'lassi-maker' washing machines at a fraction of the price of regular washing machines.

Apple Cider Washing Machine

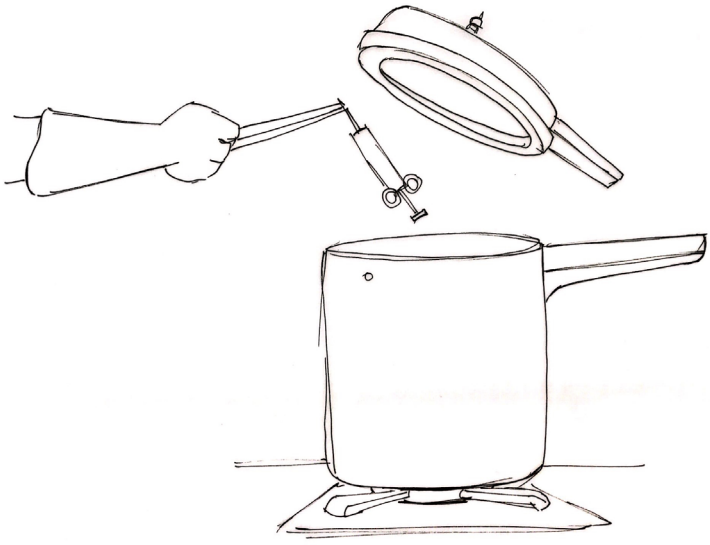


People use their top loading washing machines to make apple cider.

Tongs Using Havells Wire

In this advert, the boy takes out a Havells wire, bends it into tongs and gives it to his mother. This is to show that Havells wires are fireproof and can be used for any purposes especially near the fire.

Sterilising Medical Equipments By Using A Pressure Cooker



Health camp or clinics in remote areas do either not have access to sterilization equipment or they cannot afford such equipment, hence they use pressure cookers by which all sterilization requirements can be met.

PVC Pipe For Fruit Plucking

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A PVC pipe shaped linto a hook can easily pluck fruits from a tree.

Bus Ticket Printer As ECG Printer

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Hospitals or clinics especially in remote areas cannot afford ECG printers, so they use bus ticket printers for their low cost and easy portability.

Knife Grinder Cycle

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This bike is based on a 1940's Roman example. The bike is designed to provide a mobile service to individuals and businesses. It features an integrated pedal powered sharpening stone, water drip and collection system and a front rack and box.


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Smoke Machine To Check Car AC Leaks


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Locating a small leak in a solid black car tube is tough. That's where the smoke machine comes in.

Before straightening rod for hair came into the market, women used to straighten their hair with the help of clothes iron.

Clothes iron are often used for heating food and frying eggs, mostly in college hostels.

Kettles are not only used for boiling and steaming but for warming food as well. This scenario is common in college hostels.

Bajaj Water Tanker, has replaced the donkeys used traditionally to provide water to residents

PVC pipes are used in rice farming to measure the ground water level.

What is Jugaad?

Jugaad (a word taken from Hindi which means finding a low-cost solution to any problem in an intelligent way) is a new way to think constructively and differently about innovation and strategy. Jugaad innovation has a long-lasting tradition in India but is also widespread in the rest of the so-called BRIC countries (Brazil, Russia, India and China) and numerous other emerging economies.

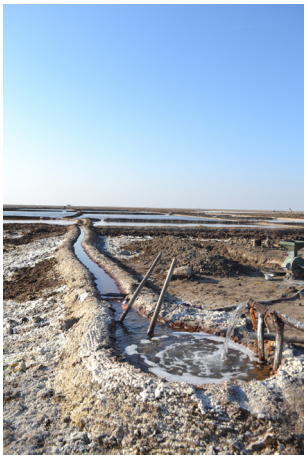
Jugaad means thinking in a frugal way and being flexible, which, in turn, requires the innovator or entrepreneur to adapt quickly to often unforeseen situations and uncertain circumstances in an intelligent way.

Intelligence in this context “isn’t about seeking sophistication or perfection by over-engineering products, but rather about developing a ‘good-enough’ solution that gets the job done”.

How is Subsistence Design different from Jugaad?
As mentioned earlier, Subsistence Design is mainly about using an available product in a new way to adapt or survive in the market without changing or modifying any physical component of the product. While in Jugaad, people would take out the component of a product and attach it to components of another product and may be attach both to another product to make life easier.

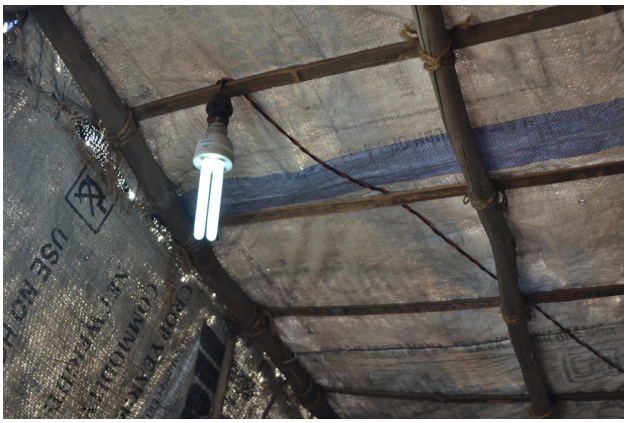
Example of Jugaad

Functional Motor with Solar panels



Motor would pump out water for salt beds

When not in use, the motor is connected to a grinder for grinding wheat and pulses



Meanwhile, the motor connected to a generator, provides electricity for the salt workers living there

For example, the salt pans are in the Little Rann, about 20 kms. from the nearest human habitation. Salt workers have to work tediously in the heat for 8 months in a year. No electricity or clean water is provided by the Government. Earlier, they had to make long trips for necessities like flour and dal. . Then, two years ago, a designer changed their lives by making a provision for attaching a flour grinder and a generator to their water pump. Now they do not have to travel long distances for their food requirements. They have electricity which they use for lighting, charging mobiles and watching TV. The designer also persuaded them to install solar panels which are used for running another water pump during the day.

Jugaad in India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Why call it Subsistence Design and not Jugaad or Frugal Innovation?

The term frugal refers to "economical in use or expenditure; prudently saving or sparing; not wasteful; entailing little expense; or requiring few resources". It therefore implies "careful use and saving of resources", e.g. "through prudent planning in the disposition of resources so as to avoid unnecessary waste or expense". Not surprisingly, the antonyms of "frugal" are "wasteful; extravagant; luxurious; or lavish".

Naming some existing technology as a new term gives it more value and a new identity. As we see in case of jugaad, the name which was given by Rishikesha T. Krishnan, has not created any image for the innovations that happened in India because the innovations at the grassroot level have not reached the global market yet. Hence, people from different countries have not been able to utilise our innovations. A new name gives a new identity and meaning to a product, which could be a mix of jugaad, grassroot innovation, disruptive technology and street entrepreneurship. The innovation lies in promoting the livelihood of the innovator or user and giving instant profits in terms of money or productivity.

Naming a process or thing can create a new thought, a new perspective of looking at it, most often it can initiate a thought process, incubate ideas, create design thinking and provide a clue to the innovator or user to address his problems in the best possible way within the available resources. Sometimes, he might have a genuine problem or sometimes he might not, but this sense of creation/ innovation and looking at things in a different way creates a habit of innovation or using existing things in a new way.

Innovation is probably the most abused term in India. First we established an irrelevant organisation called Innovation Council and then the National Innovation Foundation. The world now equates Indian innovation with the term "jugaad". The concept has gripped people's fancy because it showcases ingenuity in the face of lack of resources and skills. Creativity researchers distinguish everyday creativity from substantial creative contributions in a variety of ways. Gardner, in his book Creating Minds, describes range of creativity as "little C" creativity as opposed to "big C" creativity. According to Gardner, while efforts of Einstein and Van Gogh can be said to possess "big C" creativity, small creative efforts in everyday life are examples of "little C" creativity. Jugaad is at best "little C" and when we talk about innovation we talk about the "big C", that reaches and multiplies for the masses. Hence, there is little cause for celebration for jugaad until we devise means for it to translate into benefit for larger mankind.

Here are two main reasons why workaround jugaad innovations don't work — they are not scalable, and they are not aligned with the aspirations of the marketplace. Today's customers want well-engineered products and services that offer a smooth and integrated customer experience. They prefer a product like the Tata Ace (India's largest-selling light commercial

vehicle) to a jugaad-type vehicle knocked together in the field.

Why corporate frugal innovation fails and grassroot innovation succeeds?

In the case of frugal innovation, the innovating firm thinks that we have after all made a prfirm thinks that they had after all made a product with all the 'right' features – and now if the customers are not able to use it, it is their problem. But the customers really do not know how to use it. Even internally the design and engineering wing thinks that marketing team has done a shoddy job in promoting the product, and is clueless about why customers are not excited enough.

In grassroots level frugal innovation, where the innovator and user are mostly the same person, there is not much room for these psychological pathologies.

For example, Chotukool and Tata Swatch failedin the market.

Why should we pursue Subsistence Design?

Seen in conjunction with innovation, frugal products and services seek to minimize the use of material and financial resources in the complete value chain with the objective of substantially reducing not just the price point but the complete cost of ownership/usage of a product while fulfilling or even exceeding pre-defined criteria of acceptable quality standards (Tiwari and Herstatt, 2014)

The Larger Vision in India -

Make In India is a new initiative of the Indian government to promote the manufacturing in India.

On a larger scale, it is not only about manufacturing some products but also about innovating in India, promoting new talents, new technology, etc.

The most important step taken by the government is the initiative called "Skill India" , the main aim of which is to educate and train people on how to innovate and create frugal solutions for common problems. This movement has promoted various innovative products which are not only advanced but are also very effective in problem solving. But, this is not sufficient for healthy innovation. Street entrepreneurship is also required along with the frugal innovation to give it a boost and make it more effective.

This is where, the term Subsistence Design comes into the picture because it bridges the gap between innovative thinking, creative application, frugal innovation and street entrepreneurship. Hence, Subsistence Design can help to promote awareness of creative thinking and creative application for earning at the national level. Subsistence Design can promote creative and original thinking and make creative thinking flexible enough to be adapted by everyone. We have to bring the concept of innovation from the middle classes to people at the bottom of the pyramid to promote the overall growth of the nation.

Market Creation for Subsistence Design

"A lead market is a national market, which primarily on account of the size of its domestic demand, its access to technological capabilities and its embeddedness in the global economy provides key innovation impetus to a particular category of products." (Tiwari and Herstatt, 2014: 205)

Technological advancement is a necessity for successful growth of a lead market , but what is more important is the technological advancement adhering to the domestic needs and problems which helps the overall growth for the lead market as well as acts as a breeding ground for the bottom level frugal innovation.

Today's world, does not need the great scientist or innovator sitting in a lab
and designing new technology for a group of people in BOP sector. Rather we need persons capable of imparting skills and giving directions to the user so that the user can find a solution to his problem, which can be easily replicable on a larger scale so that the entire community can be benefited.
The end user knows every detail of his
problem and if properly guided is the best person to come up with an innovative solution to his problem.
The user may not face a problem every time but frugal thinking can ignite creative thinking which can result in providing solutions which result in ease of living/working and generation of more profits.
Such models proved to be very useful for upliftment of the community and influenced other communities by the tried and tested models. The more the model is replicated, the more its chance increases to become a more advanced and fail proof model which can be flexible enough to be accepted globally.
For example: solar lamp used at home can be used as a cycle headlight at a different place.

Such possibilities emerge when more users start using it with an exposure of skills and innovation.

Hence market is created for the product as well as for the technology and the skills required to achieve that. Since the technology is open source and is fugal, no one individual can claim it. This particular model is very different from the the commercial lead market model because in the commercial market, whatever is sold its technology is either opaque or resource consuming to be manufactured at a small scale, which makes it difficult to repeat. Hence innovation stays at the top level of hierarchy, instead of reaching to the user or educating the user.

Reverse Subsistence Design

Initially, ChotuKool was meant for people living in rural areas

Now, it is being used by city dwellers also

Reverse Subsistence Design is a design in which products designed for rural or poor people come to be used by everyone.

For example, initially Godrej & Boyce manufactured “ChotuKool”, a compact and portable refrigerator for rural people. Godrej & Boyce used to advertise ChotuKool in India Post Offices as many rural people often come there.

Godrej & Boyce had no intention of marketing ChotuKool in urban areas. But some city people managed to find out about ChotuKool and started using it.
Since then, Godrej & Boyce changed the design to suit urban tastes and started marketing ChotuKool in urban areas also. City people use ChotuKool in hostels, parties, picnics and other places.

Can we formulate a method or steps for incubation of healthy innovation in terms of Subsistence Design?

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"Ability to turn constraint into opportunities"
Systemizing the frugal innovation.

Providing space to designers in which small groups can come, work and learn would promote such innovations in resource constrained areas. One such example is the Fablab in Pabal.

Mission of Vigyan Ashram, Fablab:
The mission of Vigyan Ashram, Fablab: "To strive for a development oriented society having scientific temper through Education. To achieve this, we want to become national resource center for research, development and training for transformation towards 'Nai Talim' system of education and related social policies."

The main philosophy of Vigyan Ashram is to bring the uneducated or drop out students to the ashram give them hands on skill training and make them contribute back to the community they came from in the form of street entrepreneurship.

This model is very successful and every year this institute produces entrepreneurs who are able to sustain themselves through their innovations.

This institute has given birth to many innovative technologies, one of which is Mahindra's mini tractor which was designed and invented at this institute.

What gives birth to Subsistence Design or acts as a catalyst for the growth of Subsistence Design or an incubator for ideas for Subsistence Design?

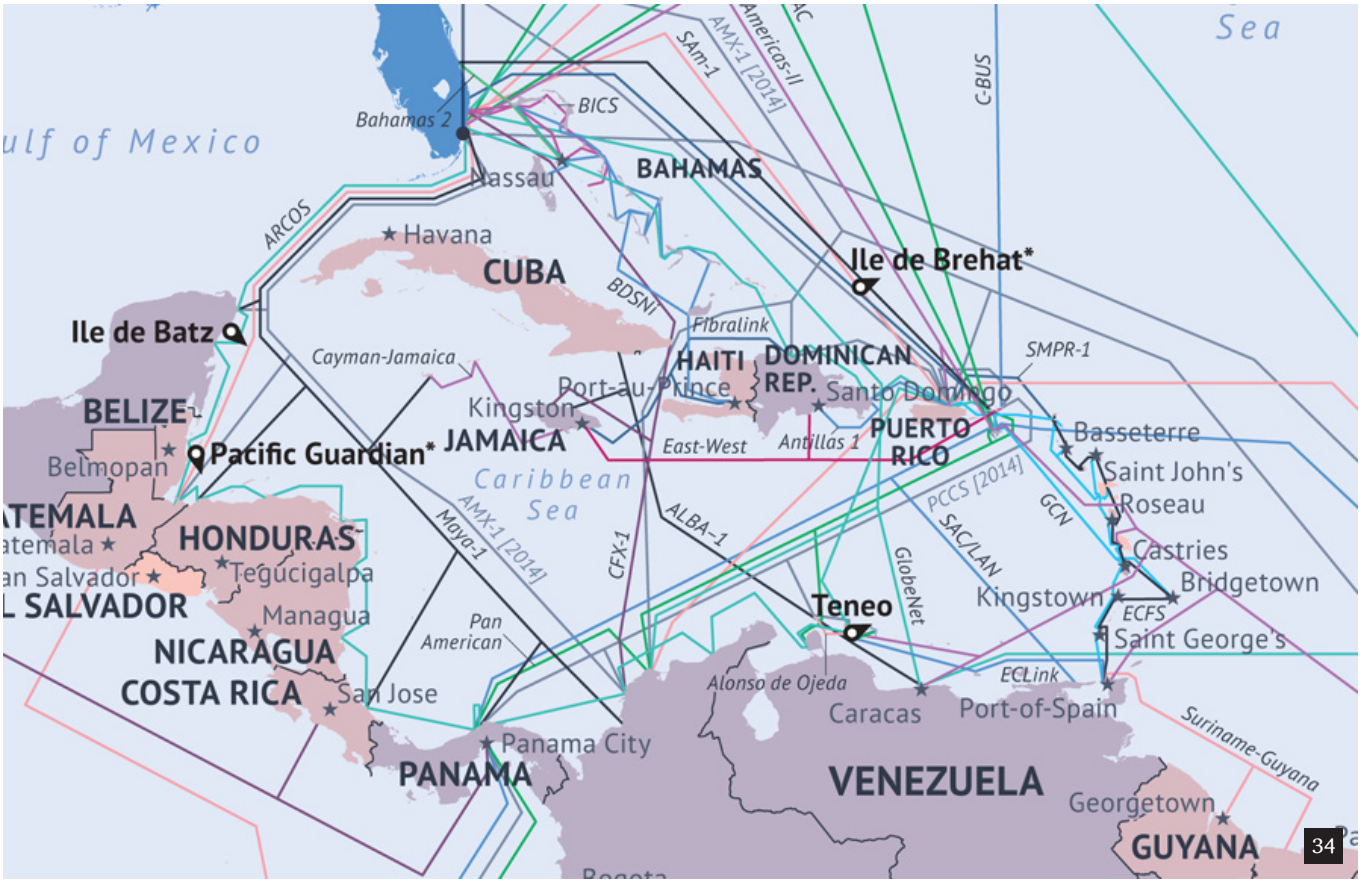
Subsistence design is Street Entrepreneurship at the Bottom of the Pyramid

Whats is BOP?
According to The Fortune at the Bottom of the Pyramid, C.K. Prahlad, the four billion people living on less than $2 per day are referred to as the Bottom of the Pyramid (BOP). People at BOP are characterized by their low income, low literacy, low skills, limited infrastructure, and limited resources and less freedom. The main point of concern is lack of income. If the cost of producing a reasonable quality product is still high, then BOP would be unable to afford it and hence there is no fortune at BOP. The fundamental notion of a BOP individual is that of a consumer who is also a producer. The BOP individuals mostly depend on livelihood generation as street hawkers, house cleaners, construction workers, and such other petty jobs.

BOP giving birth to innovation:
At the crux of any activity at the BOP lies the fundamental notion of forced frugal innovation, due to severe constraints on resources. It is known that BOP communities do not have sufficient resources and infrastructure required for a standard livelihood and are thus forced to opt for innovative ways of managing resources to meet their objectives. Despite such frugal resources, an interesting form of frugal innovation or what we know as jugaad, is practiced every day on the streets, the focus being on innovative forms of production of services in BOP, namely by the street entrepreneurs.In this study, jugaad is defined as “Low-cost sustainable frugal innovation in process, products, and/or services done locally, and with a strategic intent/purpose.”

But the thing which separates jugaad from subsistence design is the minimal modification of the existing product and the wise use of the product to earn a livlihood which can also be named as “street entrepreneurship”.

Can Subsistence Design provoke illegal utilisation of technology?



Underwater internet cables in Cuba

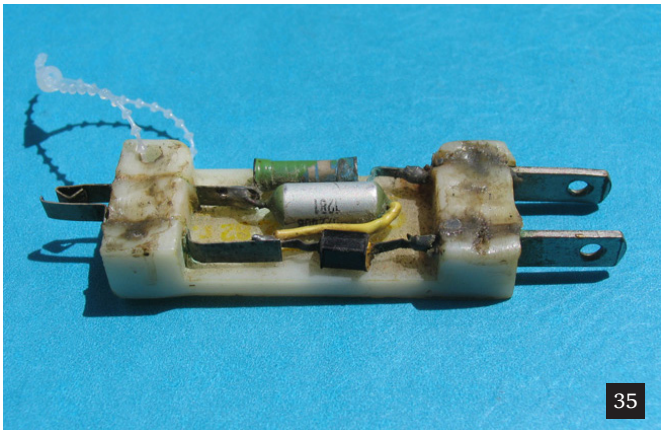
Subsistence design is all about the survival of people by adaptation and utilisation of available technology for their convenience.

Yes, sometimes subsistence design may lead to some illegal or we can say technological disobedience in the society such as the local internet service of Cuba, where the people started connecting PC to PC using LAN wire and started their own internet service, as internet has been banned in Cuba since 1990s.

Is it ethical for a person to sustain himself by using technological disobedience?

Many a times there are laws which may prevent frugal innovation. For example, rain water harvesting or rainwater collection is illegal in USA. The question is: Should we ignore such laws for the well-being of society?

The Technological Disobedience of Ernesto Oroza



Battery Charger for non-rechargeable battery (two capacitor, one diode)

Ernesto Oroza

Standardized metal meal trays repurposed as television antennas are visible on rooftops across Cuba.

Ernesto Oroza is a Cuban artist and designer.

At the 1898 at the end of Spanish-American war, Americans took away Cuban engineers to America. After independence, Fidel Castro encouraged Cubans to learn working on machines repair things by themselves. He started a movement called “National Association of Innovators and Rationalists”. In 1991, a severe economic crisis hit Cuba and people became innovative towards working on products such as transportation, toys, food, clothing etc.

When Ernesto was graduating in Industrial Design from School of Design, there was no industry or work for people like him. So he along with his friend, began travelling around the island, collecting objects, talking to people.

Tray antennas - TV antennas made of aluminium trays can be seen everywhere in Cuba.

“With Our Own Efforts” is a book full of ideas about what people can do by themselves. For example, there is a recipe for beef steak made from grapefruit with grapefruit rind.

Successful products that were originally invented for different purposes

The road to great inventions has quite a few forks, and quite often the most brilliant new products are invented completely by chance. Even stranger is when we learn that products we know and love had started out being sold for completely different purposes, like these six, which only proves that we can't live without accidental inventions.

BUBBLE WRAP

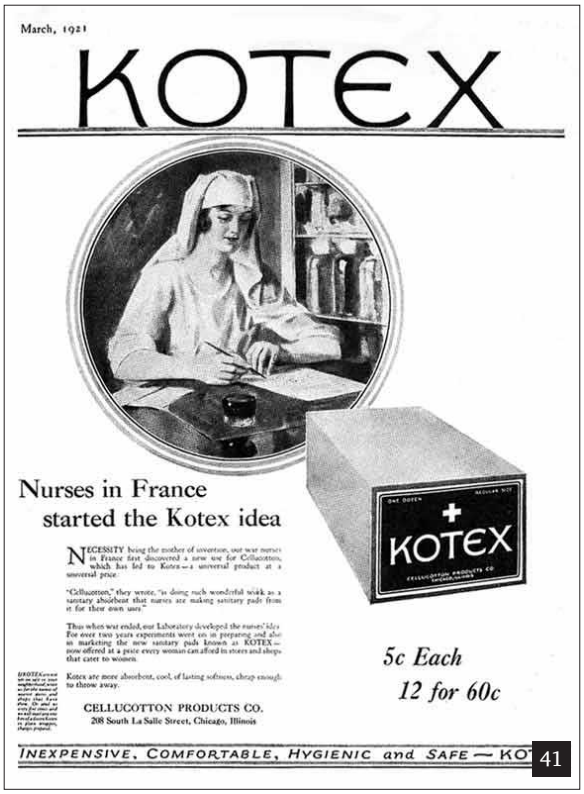
Later, The inventors tried to use it as greenhouse insulation

Originally, bubblewrap was invented as wallpaper

Bubble wrap is now used as packaging material for fragile produtcs

Two New Jersey engineers invented bubble wrap in 1957 by sealing shower curtains together and trapping air bubbles between them. Their first thought, strangely, was to sell their new invention as wallpaper. Even in the aesthetically-dubious 60s this idea was a flop.
Next came a marginally more successful attempt to offload it as greenhouse insulation. But it was when they thought to sell it to IBM as a packing material for computers that things really took off for the wonderfully-named Sealed Air Corporation which owns the brand name. Then, in 1959, IBM had announced their new 1401 variable word length computer, and Fielding and Chavannes had an idea. They pitched bubble wrap as a packaging material for the fragile new technologies, and IBM agreed to give it a try. From there, bubble wrap found new purpose and people were left wishing they had whole rooms lined with the stuff. Probably.

KOTEX



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Originally, Kotex was used to treat battle wounds

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Later, they changed it into sanitary napkins

During World War I, Kimberly-Clark produced wadding for surgical dressing made out of a relatively new material called Cellucotton. It worked just fine for treating battle wounds, but the Red Cross nurses found that the super absorbent material also had personal hygiene benefits. After the war, the market for surgical wadding dropped off, but the company found a new market for "sanitary napkins." The new product was given the name Kotex, short for "cotton texture," and was openly advertised as a re-purposing of the war material.

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Kotex - the product today

KLEENEX

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Later, Kleenex is used as soft tissus

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Originally,

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Kleenex - the product today

The public was slow to come around on the idea of disposable, publicly marketed sanitary pads, and while they waited for the tides to turn, Kimberly-Clark found another use for its supply of creped wadding. Scientists created the super thin, soft tissues we know today before they even knew what it would be used for. Initially, marketers promoted it as a replacement for "cold cream towels," which were used to apply skincare serums. Ads focusing on the cosmetic value—calling it "the new secret of keeping a pretty skin as used by famous movie stars"—sold Kleenex from its inception in 1924 until nose-needs were introduced into the marketing campaign in 1930.

PLAY DOH

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Originally, Play-Doh, earlier known as Kutol, was used as wall cleaner

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20 years later, it was repurposed as clay for pre-schoolers

Play-Doh, that strange, brightly colored, salty clay that all of us grew up molding and poking (and, occasionally, nibbling), was first invented in the 1930s by a soap manufacturer named Cleo McVickers, who thought he'd hit upon a fantastic wallpaper cleaner. It wasn't for another 20 years that McVicker's son, Joseph, repurposed the goop as clay for pre-schoolers and called it Play-Doh, a product that remains wildly popular among the under-5 crowd today.

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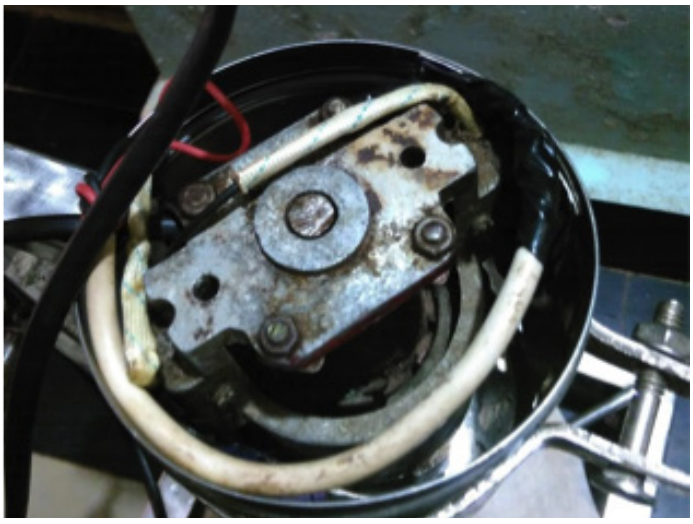
Play-Doh - the product with many ranges and activites today

Concepts

Solar Agitator



This particular product was made by a local innovator, RamBhat. He addressed the problem which he faced by churning the butter during the shortage of power.

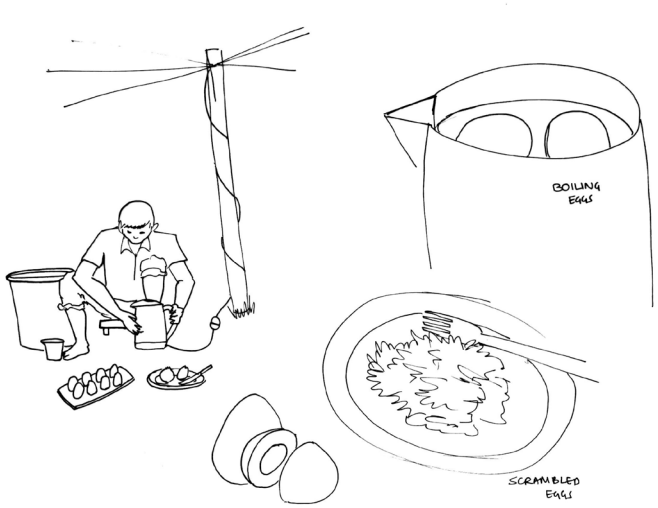
For this product, he used a DC fan motor from Reva Fan to make it a frugal machine, to churn butter from milk in a vessel.

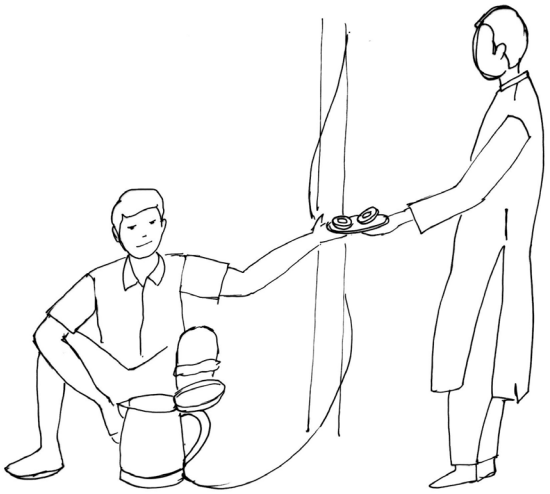
Why this and not a normal blender?
They usually face a shortage of electricity at times, in which a normal blender can't run. Since they are provided with solar panels, they use DC fans for comfort and ease.

Also the traditional matka shape vessel which is being used to make butter from hundreds of years cannot be used in modern blenders hence why not making the blender versatile so that it can incorporate any shape or size of vessel.

Hence innovation comes out of need rather than greed.

How did it fare in the market?
This design was the replicated and people actually started buying it. RamBhat has sold around such 50 models and since the design is frugal people who wanted a custom design made their own versions which are being successfully used.





Egg Kettle

Eggs are commonly found in every street corners and are cheap sources of proteins. A person can earn by cooking eggs using electric kettle at roadside.

Eggs are faster to cook, so it would not make the customers wait for a long time. Eggs can be cooked in a few different ways using kettles.

Conclusion

Subsistence design is a meaningful topic. Here, products are not designed for money or fame rather each product is designed for a pressing human problem. Be it the motorcycle modified as a public carrier or water pump modified to generate electricity and grind grains; all are very relevant for the poor people who use them. The designers of such products will seldom be recognised and they will definitely not earn in dollars (rather they may be breaking some safety or patent laws) but such designers have benefited their communities immensely. Since human problems are common across communities; a proper classification and codification of such products would benefit marginalised people everywhere. This was the attempt of this project. Of course, much more is required. All common place problems of poor people have to be studied and existing products have to be suitably modified to provide cheap and effective solutions for their problems. We would like to think that our project has at least been successful in highlighting the myriad uses of “Subsistence design”, “jugaad” and “frugal innovation”, paving the way for more of such innovations.

Image References

Image 1 : https://goo.gl/KOpnxk
Image 2 : https://goo.gl/xdMq3t
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Image 5 : https://goo.gl/UW2zEh
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