THEME 2 CASE STUDY

CREATE YOUR OWN TITLE PAGE
(PERHAPS ADDING PICTURES OF THE INNOVATION)
OR START ON NEXT PAGE AS PAGE 1 OF CASE STUDY

RECYCLED PLASTIC HOUSES; HYDERABAD

PLUTONIC
CIPET;
B.C.A.S, DU;
S.P.U

Profile of Stakeholder: PRASHANT LINGAM,

Prashant Lingam is the co-Founder of Bamboo House India. During his younger years, he dropped out of MBA to pursue his dream of being an entrepreneur.

TEAM MEMBERS:

1. MRIDUL KHANNA (https://www.linkedin.com/in/mridul-khanna-2a5982171)
2. ANKUSH KOUNDAL (https://www.linkedin.com/mwlite/in/ankush-koundal-a95907216)
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THEME 2: **SHOWCASE A NEW INNOVATION ….**

(Abstract) Describe the Plastic Waste Problem and The Proposed Innovation

Problem: Needless to mention, plastic waste management is a globally recognized problem. B.H.I. aims to tackle this problem without making any poverty struck segments of population to suffer.

Innovation: Bamboo Housing India solves plastic waste management, plastic recycling, and affordable housing problems by bringing a common solution to all those i.e. by using recycled plastic modules to construct houses making them extremely economically feasible and easy to assemble.

I. DEFINING THE PROBLEM

What problem are you solving? Specifically, why does it persist in India? What are its causes. Be as narrow as possible –the narrower the problem, the better opportunity your innovative solution will attract users. Provide quantitative support, if possible.

1.) We, the members of Team PLUTONIC are students specializing in the field of polymer science. By showcasing this initiative, we aim to solve plastic pollution and poverty related challenges such as:

1.) Plastic waste management,
2.) Plastic recycling,
3.) Affordable housing solutions.

Plastic waste is a globally recognized problem that is being expected to grow more over the coming years if not tackled. Several organizations are planning to switch to biodegradable alternatives but the real issue standing in front of us is the management of existing polymer waste. Bamboo Housing India (B.H.I.) came up with a solution to construct houses by using mixed plastic wastes using modules that are really easy to assemble.

Plastic waste can either be recycled, or can be discarded. Currently, the latter is preferred over any imaginable method of disposal. However, B.H.I. aims to bring a change by switching to the recycling methods in a very useful way i.e. to create affordable houses for a large section of the world's population.

Of all the challenges stated above, one of the biggest issues we're addressing is affordable housing. In India, purchasing property

is expensive mainly because of land prices and high population density.
Higher population also means higher plastic demands and hence higher plastic waste generation. Few initiatives are working towards a similar goal as ours. However, the solution our initiative offers is really efficient.
Major population in rural areas have straw houses and huts with poor quality raw materials and hence, unpredictable strength. Bamboo Housing India offers cheaper housing solutions as much more reliable alternative.

Did your team research the problem? Talk with potential target customers

Yes, our team has been studying the statistics for several plastic related issues and expensive housing options (even for rural areas). We've talked to locals and people from the slums to better understand their take on the plastic waste problem and affordable housing. What we've got to know so far is that the poor population feels helpless at all times. For them, getting a full meal seems way more important than having a stable roof to live under. Our team believes that B.H.I. will surely influence the existing housing industry and bring about a change on a large scale for all the potential target customers.

Describe the stakeholders impacted by the problem?

Primarily, small businesses and local shop owners are being affected in a locality due to unappealing plastic pollution in their locality. Also, real estate developers/property builders have been impacted by the same problem, and as a result, masons and local villagers face the consequences in forms of plastic waste related problems and costly housing options. Due to increasing cost of construction raw materials, it becomes difficult for builders to construct affordable properties and similarly, villagers find it difficult to afford houses with better strength.

Who are the stakeholders most harmed and impacted by the problem (and how)?

As stated above, small business owners, property builders and the local population including daily wage workers have been impacted the most and continue to be exploited as a result of increasing plastic pollution.

Who are the stakeholders that could be engaged/invested to help bring the solution to fruition?

Local plastic waste recycling companies can invest into the production of recycled modules that are easy to setup and assemble, eco-friendly, readily available raw materials at lower cost.

Who are the stakeholders that could do their best to prevent the solution from coming to fruition. Explain why these stakeholders benefit from status quo?

Conventional realtors in cities looking for profit margins and opportunities from exploitation in rural areas. Current raw material manufacturers, for example: cement, asphalt, brick, sand producers, etc.

What current options already exist to solve the problem thus far? Are you reinventing the wheel? Are their any unintended consequences from the different approaches that have been tried that may happen again with your innovation?

A few initiatives are working towards similar goals. Plastic brick manufacturers require more manpower which adds to the cost and makes the product less feasible. Longer machine running times would mean greater energy consumption adding to global warming. Transportation, melting done using excessive energy. Our initiative makes use of mixed plastic waste and that waste is further used to generate plastic walls using lesser power consumption and lesser man power.

II. MAKE THE "BUSINESS" CASE

What is the innovation? Why is it innovative?

Bamboo House India is an initiative that envisions transformation of Rural and Tribal communities by offering sustainable livelihood opportunities, while also utilize bamboo as a low-cost, eco-friendly substitute for wood, steel, and even plastic. This initiative not only focuses on substituting plastic by the use of bamboo, but also offer an excellent way to tackle plastic waste problem (for mixed plastic wastes). Some of the solutions to plastic waste management offered by this initiative include Houses from Recycled plastics, recycled plastic paver tiles, furniture from recycled tires.

Is there a stakeholder group, if it showed significant interest, that your team would want to get on board? What would be required of them?

Expansion for colony housing in a rural locality A construction firm that builds on this idea on a larger scale primarily for affordable housing for lower middle class. Plastic waste rag pickers, originality of the idea is maintained. Not get deviated from the initiative's purpose.

Who is the target customer and why would they be interested in adopting and implementing this innovation?

Poverty struck population, and lower middle class looking for affordable houses. Even college students, employees looking for affordable housing in cities.

Does this innovation solution address the cause(s) of the problem?

Yes, this innovative solution by B.H.I. addresses several causes of housing and plastic waste management related issues.

What key occurrences have to happen in India and the Indian subcontinent to drive its adoption/use?

In a world where plastic is not seen as a problem, but as a resource for supporting several industries, it becomes imperative to spread awareness among citizens to carefully dispose and discard it post-use. Moreover, Indian mentality needs to be shifted to view recycled plastic waste as a useful replacement for several applications.

Describe a pilot program that your team would design to showcase your innovation

Demonstrate our initiative in area specific exhibitions (for example: Nukkad natak, demonstrations in plastic industry exhibitions using appropriate prototypes)

Describe the human capital and financial resources necessary to build and implement this innovation in one city to demonstrate success?

Lower man power required. Hence, this initiative isn't really capital intensive, especially when implemented on a large scale. Moreover, to demonstrate its success in a different city, a housing project might be really helpful.
For example: a society to accommodate 500 people could be constructed in a slum locality present near a city (with high plastic waste generation). Per model of house population and cost could hence clearly be displayed for affordable housing solution brought by B.H.I.

III. "MAKE THE CASE" TO REPLICATE THIS INITIATIVE IN OTHER LOCATIONS IN INDIA (OR WORLD)

How can this innovative solution be replicated in other cities in India -with a similar problem to solve?

Metropolitan cities like Delhi, Mumbai, etc with high population density and high plastic waste (cheaper raw material), with proper rag picking networks/firms. Hyderabad has already been covered and hence proving that this model will turn out to be a success in other Metropolitan cities as well.

What challenges need to be overcome for replication?

Waste sorting techniques, proper waste disposal, efficient rag picking mechanisms.

What circumstances must be present in order for this solution to be implemented elsewhere in India and its subcontinent?

People must be ready to invest and purchase such houses without bringing into consideration any limiting thoughts. Enough locations for setting up new societies. Sufficient plastic waste to be used as raw material. Efficient rag picking and transportation.

TEAM PROFILES

TEAM LEADER: MRIDUL KHANNA, https://www.linkedin.com/in/mridul-khanna-2a5982171

I'm a fresh graduate in the field of polymer science having primary interests in speciality polymers, biopolymers, sustainable plastic management and innovative packaging. I've always been focused towards the world's issues and try my best to come up with most innovative solutions to resolve them. I never give up on my efforts to complete the tasks I'm provided with. I've worked on a few research projects. One of them being with The University of Birmingham.

TEAM MEMBERS:

ANKUSH KOUNDAL, https://www.linkedin.com/mwlite/in/ankush-koundal-a95907216

One who possess advanced cognitive abilities and strong interest in technology, particularly in the field of matter and materials. he is always eager to develop new skills and things

ANMOL MALHOTRA, https://www.linkedin.com/in/anmol-malhotra-a743b2231

Academics has always been my strong point. I find great interest in research and I am currently a part of research project, despite the pandemic slowing down our lives I tried my best to not it let affect my passion and used my time on writing a review article which will soon get published.

PLEASE PROVIDE THIS INFORMATION FOR THE JUDGES: REFERENCES/INTERVIEWS

INTERVIEWS (LIST PERSON, DATE OF INTERVIEW)

1. **PRASHANT LINGAM, 15/02/2022**

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