# Concept

Our target is to create a sustainable platform where recyclable garbage is directed to the correct place, a problem rife in emerging markets.

Our Platform known as **Tau** aims to solve this by incentivising customers in developing countries to throw, segregate, and understand the ‘critical’ recyclable garbage. Our platform is a mobile app that enables a logistics ecosystem that enables collection of incentivising self-sorted recycling.

For an idea to be effective, it has to be scalable which is why our app aims to collaborate with already existing infrastructure to help them more effectively arrange, sort, and collect household waste. We collect a gold mine of data, which we will leverage effectively to drive the incentives, and thus power the recycling engines we envision, we call ‘self perpetuating recycling’.

Our platform also doubles down to educate individuals as the sorting is done by the said individuals. Once the app has a large enough user base, we will expand to encompass smart bins, which will seamlessly integrate to the system to facilitate a full two pronged attack to clean plastic and other waste.

### Why is it sustainable and why does it scale?

The incentives drive data, which drives more incentives. A self perpetuating circle.

It also doubles down as an education platform for users on what is and what's not recyclable.

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The bin is built upon the user base that stage 1 accomplishes. Its a two pronged, complete attack on solving any emerging markets issue.

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# Our Platform

Our platform can be subdivided into two part;

1. Stage 1: CityCollection is the scalable solution designed to address household sorting and education
2. Stage 2: CityBin will address all disposal of garbage by including automated sorting bins

Both systems will use our proprietary API platform Tau (under development).

### CityCollection

>> image CityCollection

### CityBin

>> image CityBin

### CityApp

-Booking for pickups

-See previous bookings

-See upcoming pickups/cancel upcoming pickups

-See nearby bins

-See previous disposals

-Authentication

-Prize redemption

-News/Advertising

### Dashboard

-Visualize the data

-Waste disposal patterns/habits of users

-Waste disposal patterns of areas/cities

### Image recognition

- 2 - models. A Generic mobile friendly model + powerful specific items of the most popular recyclable items

### Data

-Data gathered so far from a local survey includes

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# How does it solve the problem?

To understand how our solution neatly addresses every problem in the challenge, either directly or indirectly, we have organised a Q&A session below.

## **Challenge 1 -** Improved Visibility of Plastic Waste Generation and Material Flows

* Southeast Asia’s existing systems are complex, often fragmented, and heavily reliant on the informal economy.
* Lack of visibility and transparency on plastic waste generation patterns as well as plastic waste material flows

Questions & Answers

1. How to better track and understand where plastic waste comes from and where does it go?

* Mobile app (CC) gathers information as to houses that produce recyclables/non-recyclable
* CC Provides targeted education to the required households
* CC incentivizes proper recycling by rewarding redeemable points

1. Better understand waste generation based on its quality (type, cleanliness, etc) and source (urban/rural, commercial/household, community-level/country-level, etc)?

* CC & CB’s Image recognition to help identify the cleanliness and type of recyclability
* Track the brands that use plastics, provide this data to help them better manage the responsibility. Tracked through image recognition which adds additional incentive rewards points
* CB provides crowd gathering areas, while CC provides home based on aggregate waste disposal patterns (increasing decreasing/types cleaning)

1. Predict the consumer attitudes and behaviours to identify potential channels of influence on plastics?

* CC and CB both gather the data of disposal and usage patterns
* Leverage advertisements and awareness dashboard to drive influence
* The dashboard organises the incentivise to maximise the influence

## **Challenge 2** - Optimization of Circular Supply Chains for Plastics

1. How might we incentivize responsible for plastic use and waste management?
2. How might we enhance the visibility, connectivity, and efficiency of informal sector waste collectors and aggregators?
3. How might we improve the visibility of pricing?
4. How might we better track and improve value generation across the supply chain?
5. How might we best identify and improve awareness of existing gender and power dynamics across the value chain?

## **Challenge 3** - Identification & Prevention of Plastic Waste Leakage

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# Appendix + Planning

*How do we visualize the* ***data****?*

***Dashboard***

*Ajmal + Raneesh*

*- Truck routing information based on the fullness of a CityBin*

*- Based on the disposals or the collections of users, map which areas are recycling more and which areas aren’t as recycling as much. (Heatmap of where recycling is happening)*

*- Which types of recyclables are being disposed of in areas? (Heatmap)*

*- Timeline based recycling habits of consumers*

*- We can see if a particular pro-recycling advertising is working.*

* *Redemption handling*

**Mobile App**

Avinath

-Booking for pickups

-See previous bookings

-See upcoming pickups/cancel upcoming pickups

-See nearby bins

-See previous disposals

-Authentication

-Prize redemption

-News/Advertising

**CityBin App + Arduino**

Avinath

**Validator**

**Models**

2 - models

1 - Generic

-Exists on the device

1 - Specific **10 items of the most popular recyclable items (Anything trained with ImageNet)**

-Milo Milk Packet

-Knuckles Water Bottles

-Coca Cola Glass

-Coca Cola Plast

-Kotmale Peach Flavored Drinking Yogurt

-Elephant House Peach Iced Tea