BBMP Survey Project Write Up

Avikalp Gupta

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1 Problem

We are unaware of what actually happens to all the waste that BBMP collects from the households and the streets. It asks the households to segregate the waste into dry and wet (and sanitary) but most of the garbage carriers in the city have no partition. We are also curious about how efficient are the processes of BBMP - both in the percentage success percentage of waste that is managed responsibly/scientifically) and in cost efficiency.

There also seems to be some differences in the implementation of various BBMP rules in different areas of the city. So we want to conduct a thorough survey of the status quo about all the waste that is collected in Bengaluru.

2 Methodology

2.1 Setup

- Small GPS+GPRS devices are available for purchase online which can be attached with appropriate power sources and attached to garbage items in a disguised fashion.
- A server has to be setup which will accumulate the data coming from various such devices and track their movement over a period of, say, 48 hours.

2.2 Implementation

- Devices have to be attached carefully to different types of wastes and disposed from various source points. Some of this waste will be collected by BBMP from households in different parts of the city, and some will be collected from the streets (which will be unsegregated waste).
- The position of the devices have to be tracked and we will have to keep a record of where did it spend most of its time and where did it end up landing. We will hopefully be able to reach this location after a couple of days and retrieve the device from wherever it was dumped.

2.3 Caveats

- In the ideal scenario, where the segregation is redone by the pourikarmikas, they might detach the device from the tracked item and put it in the pile of electronic waste.
- We might lose a lot of such devices as they might enter the recycling plants, or might just break in the transportation despite our best efforts to prevent that.
- The battery of a device might die out before the waste it is associated with reaches its final destination.

3 Evaluation

There are two parts to the evaluation of this project:

1. Accuracy: Upon review, where we go to the final locations of the GPS readings for each of the GPS devices, if we found waste of the corresponding type accumulated there, or some dedicated space for handling such waste, then the readings of that device were accurate.
2. Coverage: It is not clear how exhaustive can we be about the estimations on the coverage - but some estimation is possible based on the following data:
   (a) The regions that were initially chosen for starting the survey.
   (b) The locations marked with long periods of rest for the GPS device.
   (c) Any information from the final location of the device
      i. If it is a treatment plant, then we can get the information about the region of coverage they have
      ii. Otherwise we can try to work out the some numbers from the amount of garbage we find at the final location.