MAE 540 - Advanced Product Design Methodology

Dr. Yi Ren

Design Competition I

Smart Food Management

Team 6:

Adithya Lakkur Venugopal

Anket Hirachand Marathe

Bharath Santhanam
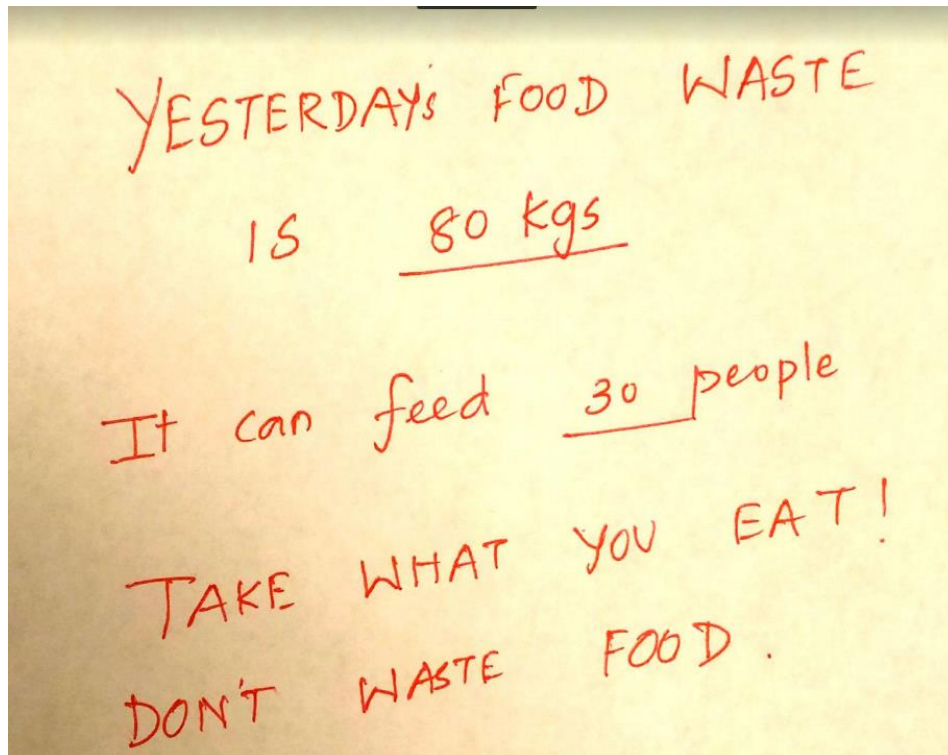
Prajeet Krishnan

Rohan Halageri Uday

Problem Statement & Existing Solution

In developing countries and especially India, food wastage reduction is not preventive.

The below image represents how food wastage is prevented in industries, student dining halls in developing countries. In India, most of the student

and Industry dining try to educate the consumers about the food wastage and to be aware about it. An example can be seen below.

In this case, food wastage is not prevented efficiently. It depends on the person consuming the food to be cautious. There are possibilities that the consumers are not concerned about reducing the food wastage. But the hostels or Industry dining management often fail to take preventive measures to reduce this wastage.

A survey by the Indian Institute of Technology Bombay (IIT) shows the wastage of food in the student dining in the table below [https://hs699.wordpress.com/2011/05/09/review-of-food-wastage-in-all-hostel-messes-at-iitb-campus-and-possible-solution-to-utilize-waste-food/]:

Hostel Number	Average Food Wastage (Kg/Day)	Average Food (Kg/Year)
1	60	16200
2	65	17550
3	53	14310
4	57	15390
5	70	18900
6	80	21600
7	75	20250
8	63	17010
9	87	23490
10	55	14850
11	62	16740
12,13 and 14	225	60750

As a result, there is a need of food waste management right from the food generation to disposal. We are developing a Smart Food Management system to solve the about problems.

Proposed Solution

An application will be developed to manage food generation and reduce the wastage as shown in the flow chart:

SMART FOOD MANAGEMENT

Using the app, notify the kitchen what you will be having the next day.

↓

User can select the menu & the portion size of the meal

↓

Food generation happens according to the received order from the app

↓

User swipes his card before collecting the order

↓

The food is served according to the order placed

↓   ↓

Use able food that is left over goes to the. NGO's. nearby. This is done by notifying the NGO's with the app regarding the availability.

Un-useable food & bio waste goes to the composting plant.

Beneficiaries
- Industries
- Student Dining

Attributes
- **Price** – Price of the service (Mobile App)
- **Efficient waste management –** Energy is recovered from the waste food in biogas plant
- **Food conservation –** Save resources used to produce food
- **Consumer flexibility –** Ease of placing order

Pitch

Food for everyone by smart dining!