INNOVATION 2022

HACKATHON

Team: Runtime Terrors

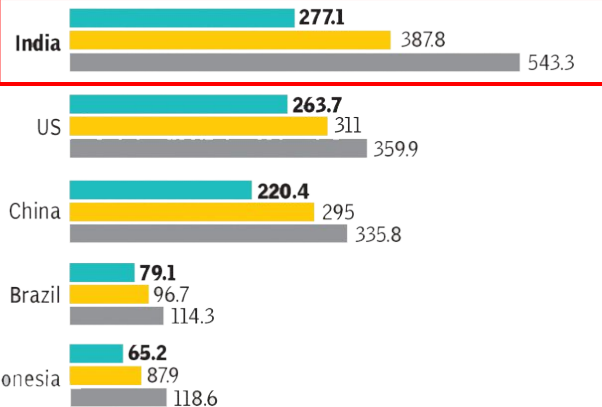**Gayatri Walke**   **Shuchi Talati**   **Vaibhavi Kharapkar**

MOTIVATION

India's waste generation likely to double in next 30 years!

TOP 5 MUNICIPAL SOLID WASTE GENERATORS ANNUALLY
(in million tonnes)

- 2016 estimate
- 2030 projected
- 2050 projected

India
- 277.1
- 387.8
- 543.3

US
- 263.7
- 311
- 359.9

China
- 220.4
- 295
- 335.8

Brazil
- 79.1
- 96.7
- 114.3

Indonesia
- 65.2
- 87.9
- 118.6

Source: Survey Conducted by TOI 2016

Waste Characterization - Municipal Solid Waste

Hazardous Waste

pesticides, paints   Used batteries

Compostable Organics

Fruits, Vegetables and Food Waste

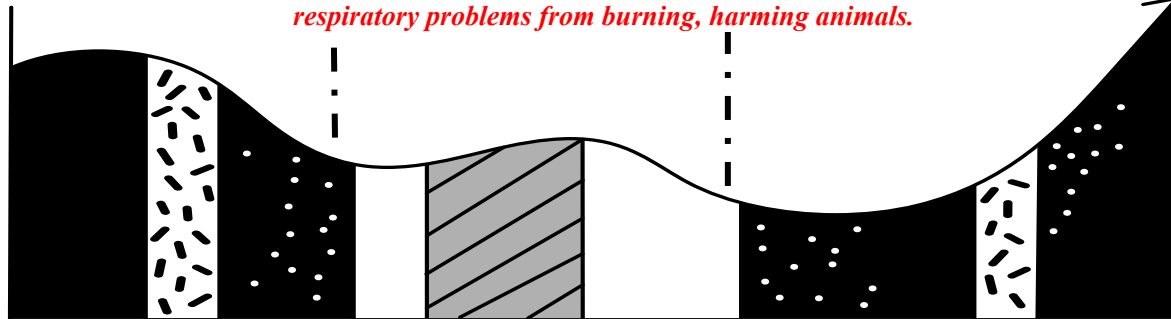### Healthcare Waste - Dangerous

disposable syringes, sanitary materials and blood containing textiles

Plastic waste - from shops, homes

Food wrappers, plastic bottles, plastic grocery bags, plastic straws

These landfills lead to clogging drains, transmitting diseases, increasing respiratory problems from burning, harming animals.

A Landfill Site or any Dumping Area

PROBLEM STATEMENT

Management, collection, and utilization of Industrial & Household Waste

IMPORTANCE

Fact

2020 Tokyo Medal Project: aimed to make all of the 2020 Olympic Medals out of recycled e-waste materials

- the organizing committee wanted to draw attention to the ongoing hazardous activities in our world and the **recycling solution** to them
- Around **78,985 tons** of e-waste were collected - which approximately contains **32 kg of gold, 3500 kg silver**, and **2200 kg bronze** material.
- All of these were smelted into the most memorable and outstanding awards of the last four years

Wonders with waste: A Kanpur success story: earlier garbage collection centres have now been converted into parks with the help of the local community

Fact

- One of the largest dhalaos (open, temporary dumpsite) has not only been converted into a park but has also become a public space for the expression of art
- Another garbage collection centre has been converted into a Ward office

THESE INNOVATIVE RECYCLING AND REUSING SUCCESS STORIES INSPIRE US TO WORK TOWARDS THIS CAUSE.

IDEA: To develop a mobile application that -

Allows local waste management firms to register and where individuals/industries can sell their scrap

Aims to provide sellers various selling options at competitive prices

Provides Recommendation system for nearby sellers in every waste category

SCRAP DEAL

Rethink, REINVENT, RECYCLE

Provides Integration of chatbot to assist users

Has a Lens Feature: Capture Image of waste and find potential nearest buyers

Gets updates of waste collection events & drives from various NGOs and organizations

Has Tie ups with local waste pick up agents

AGILE METHODOLOGY

Strategy

To ensure proper waste management, a mobile application can be developed for systemic waste disposal

Analysis

Lack of Proper Waste Disposal and Management

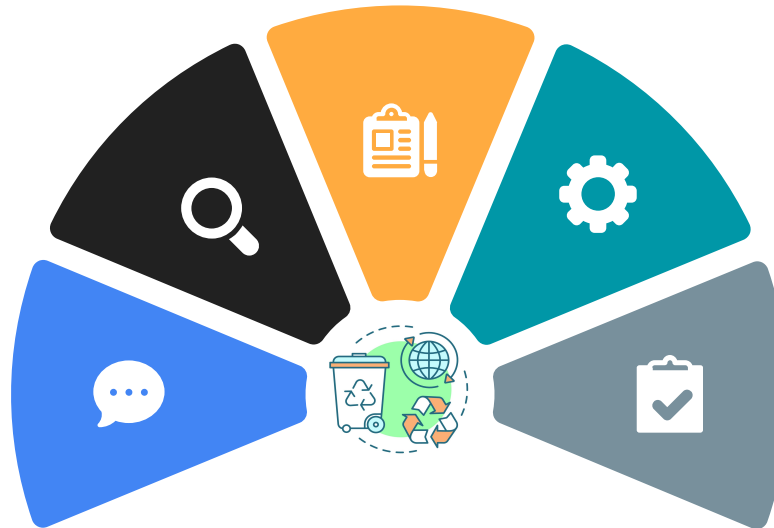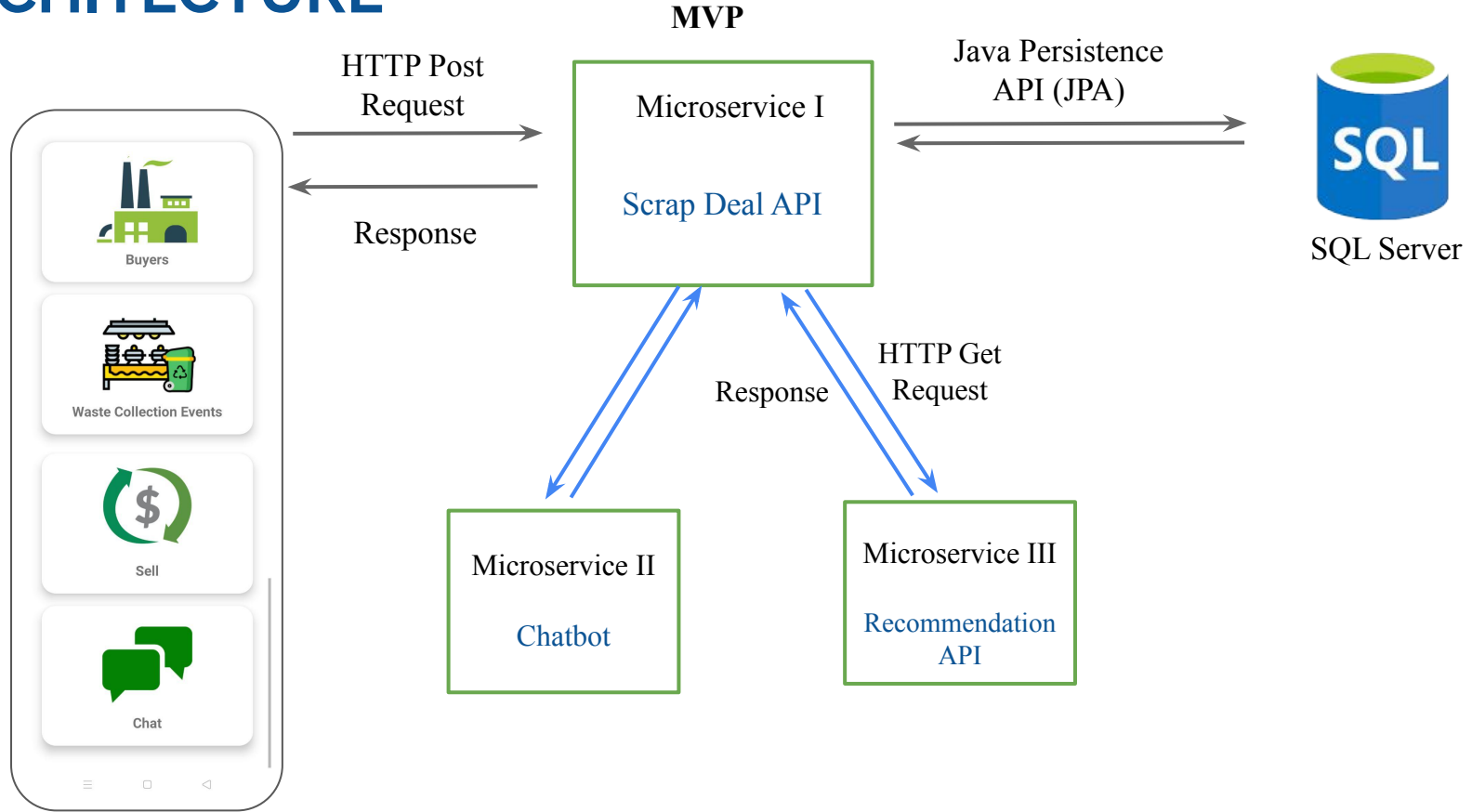**Execution**

Developed a mobile application - Scrap Deal which includes services to users such as Buying selling and collecting of scrap

Discussion

Surveys suggest India's waste generation will double in the next 30 years.

QA Testing

QA testing methodology provides the information needed for design and development to produce a quality app

ARCHITECTURE

MVP

HTTP Post Request

Microservice I

Scrap Deal API

Java Persistence API (JPA)

SQL Server

Response

HTTP Get Request

Response

Microservice II

Chatbot

Microservice III

Recommendation API

Buyers

Waste Collection Events

Sell

Chat

Client Interface: Mobile Application

DEMONSTRATION

BUSINESS MODEL

Activities

- Buying, Selling and Collecting of Scrap
- Use of ChatBot to assist users
- Tie up with local waste collectors

Partners

Local Ragmen, Waste Processing Industries

Resources

SQL Server required to store data

Costs

- Development Cost
- Maintenance Cost
- Pick up -drop, transportation Cost
- Publicity Cost

Customers

Households, Shops, Factories, Local Kabadi shops

Channels

- Word of Mouth
- Advertisement

Revenues

- Advertisement of waste management firms
- Commission from buyers and sellers
- Event notification

Values

Proper Waste Management

SCRAP DEAL

RETHINK, REINVENT, RECYCLE

Relationships

Maintaining Relationships with Ragmans and Waste Processing Factories

CONCLUSION

- To recognise the potential, we can look at other leaders in the space, with companies like Veolia making €10bn of revenue from waste management in 2019 alone.

- This application will ensure proper waste management facilities at people's doorsteps, allowing to not only create a greener city but also allow revolutionizing recycling and reusing techniques.

- The app commits to the fact that waste segregation can be the difference between the survival of the earth and the worsening effects in the natural biological system as it:

Helps protect the Environment

Encourages Health Standards

Supports Recycling Materials

References

- https://www.thekabadiwala.com/

- https://evreka.co/blog/tokyo-olympics-a-role-model-in-e-waste-management/

- https://www.financialexpress.com/archive/wonders-with-waste-a-kanpur-success-story/978964/

- https://timesofindia.indiatimes.com/india/in-30-years-india-tipped-to-double-the-amount-of-waste-it-generates/articleshow/74454382.cms

THANK YOU

Ideas

- Industries can register, individuals can sell

- Plastic, fashion and clothing industry, tourism industry, farming industry, ewaste

- Lens- computer vision

- Recommendation system for waste buying and selling

- IBM chatbot, IBM CLoud

- NGOs Events update, notification of cleanliness drives

Olx model

Generator, processor, buyer - tie up local waste management firms

Olympics, ministry of msme

Claim Carbon credit

Rag pickers

Evaluation metric

Novelty of idea, innovation

approach(agile, devops)

Feasibility

Market value - revenue generation

Scope

MVP

Assumptions due to time constraints

Final presentation 7-8 mins

Team collaboration/ work division

SCRAP DEAL

Rethink, REINVENT, RECYCLE