

# Retail recommendation system for Micro enterprises using AI/ML and blockchain

Theme: “Supply chain event prediction and visibility”: How can you provide visibility and predictive capabilities in the supply chain, in order to make the right decisions?



# PROJECT IDEA

## STRENGTH

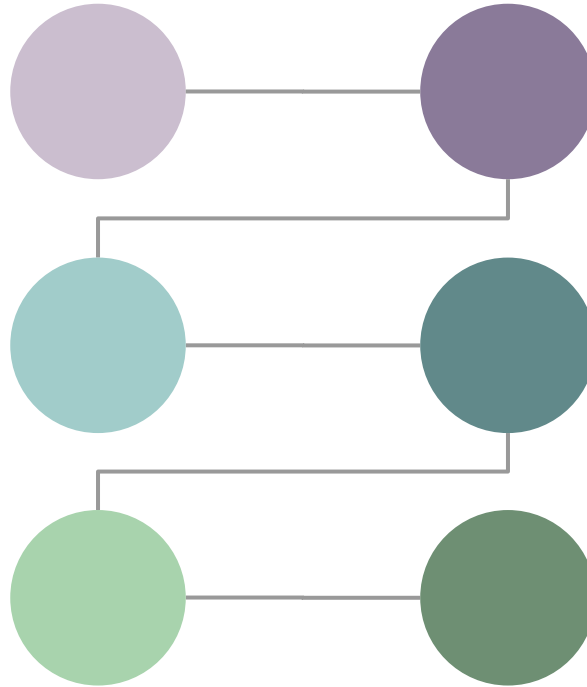
Designing a web application

## PREFERENCES

Recommend retailers the most preferred items in their home region

## DATA ANALYSIS

Analysing data through various bills from retail shops



## RECOMMENDATION

Web app for retailers

## PROFIT

Prioritizing recommended items and profit margin generation

## TECHNOLOGIES

Machine learning and Blockchain

# TECH REQUIREMENTS/ SOFTWARES

## BLOCKCHAIN



Solidity, AWS,  
Ethereum testnet

## MACHINE LEARNING



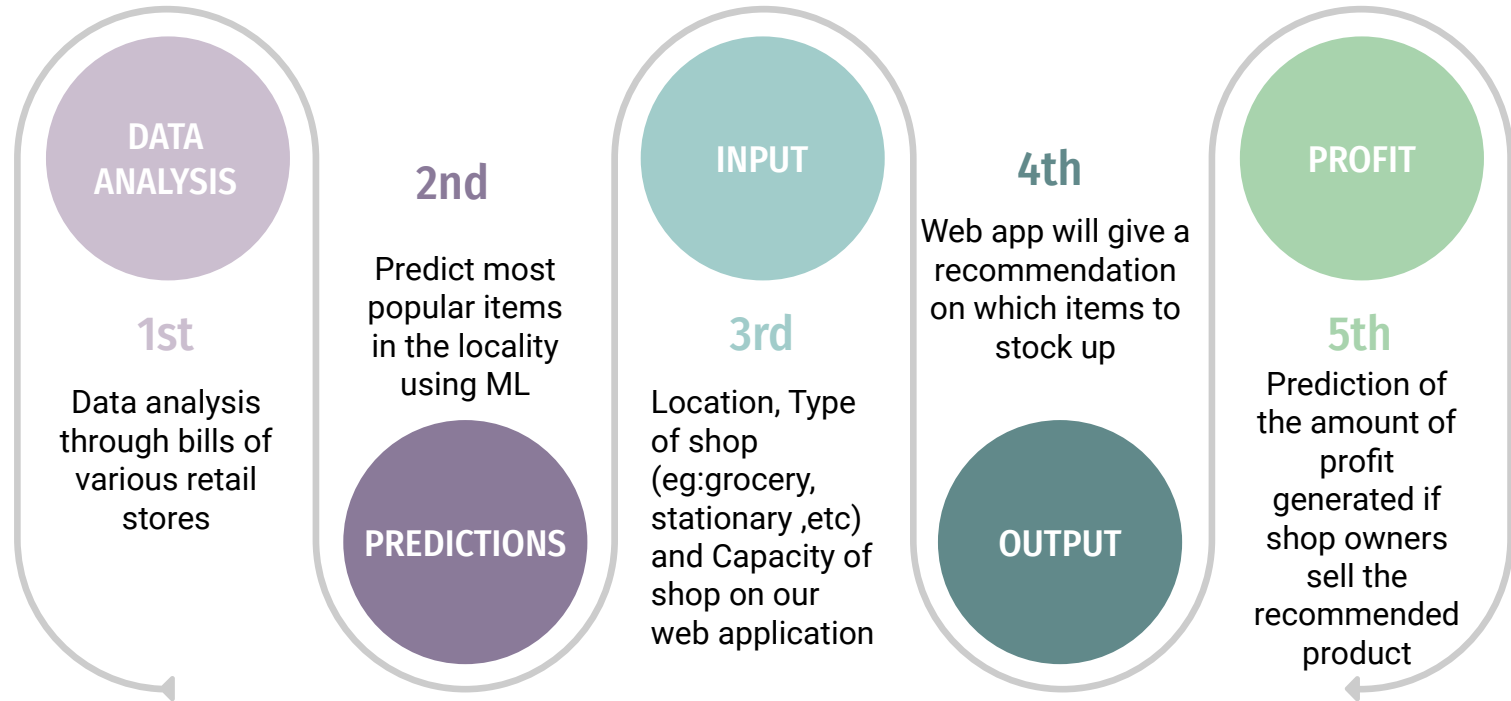
Python, Random  
Forest classifier  
Jupyter notebook,  
Tableau

## FRONT END DEV



React, CSS,  
Javascript, HTML

# PROJECT DESCRIPTION



# MACHINE LEARNING OUTPUTS

Out[25]:

	category	sub_category	brand	sale_price	market_price	profit	Label_category	profit%	Sale Classification
index									
1	Beauty & Hygiene	Hair Care	Sri Sri Ayurveda	220.00	220.0	0.00	2	0.000000	bad sale
2	Kitchen, Garden & Pets	Storage & Accessories	Mastercook	180.00	180.0	0.00	9	0.000000	bad sale
3	Cleaning & Household	Pooja Needs	Trm	119.00	250.0	131.00	4	52.400000	great sale
4	Cleaning & Household	Bins & Bathroom Ware	Nakoda	149.00	176.0	27.00	4	15.340909	moderate sale
5	Beauty & Hygiene	Bath & Hand Wash	Nivea	162.00	162.0	0.00	2	0.000000	bad sale
...	...	...	...	...	...	...	...	...	...
7996	Beauty & Hygiene	Fragrances & Deos	Dkny	5550.00	5550.0	0.00	2	0.000000	bad sale
7997	Beverages	Fruit Juices & Drinks	Diabetics Dezire	305.00	305.0	0.00	3	0.000000	bad sale
7998	Beauty & Hygiene	Skin Care	Lotus Organics+	335.75	395.0	59.25	2	15.000000	moderate sale
7999	Beauty & Hygiene	Health & Medicine	Chicnutrix	821.70	990.0	168.30	2	17.000000	moderate sale
8000	Beauty & Hygiene	Feminine Hygiene	Whisper	30.00	30.0	0.00	2	0.000000	bad sale

8000 rows × 9 columns

In [26]:

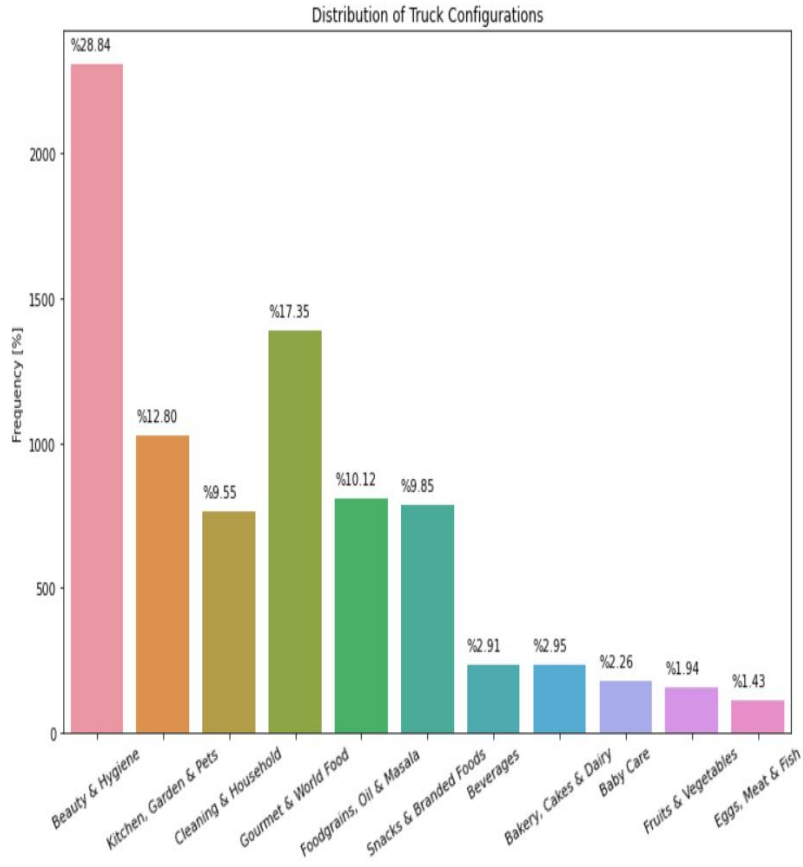
```
data['Sale Classification'].value_counts()
```

Out[26]:

```
bad sale      3623
moderate sale 2380
good sale     1060
poor sale      817
great sale     120
Name: Sale Classification, dtype: int64
```

In [27]:

```
sns.heatmap(data.corr(), annot=True)
```

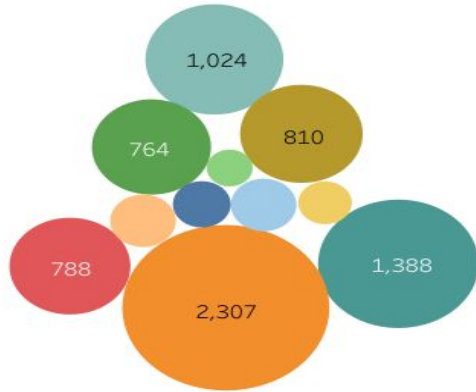


## Visualization of total % sale over different categories being sold in groceries



# DATA ANALYSIS

Category - Count



Category

- Baby Care
- Bakery, Cakes & D..
- Beauty & Hygiene
- Beverages
- Cleaning & House..
- Eggs, Meat & Fish
- Foodgrains, Oil & ..
- Fruits & Vegetabl..
- Gourmet & World ..
- Kitchen, Garden & ..
- Snacks & Branded..

Profit Classification

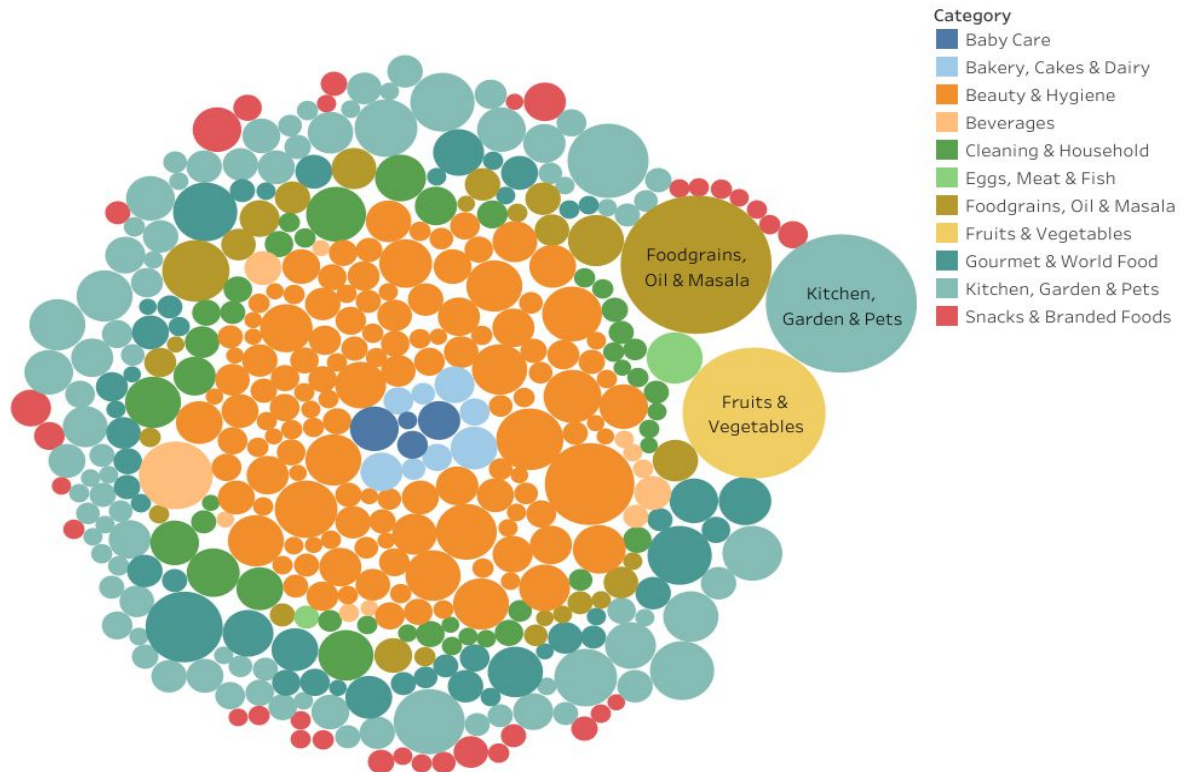


Taking dataset for Bhel Area, Bhopal and counting the sales and profit margin% for each category.

# DATA ANALYSIS

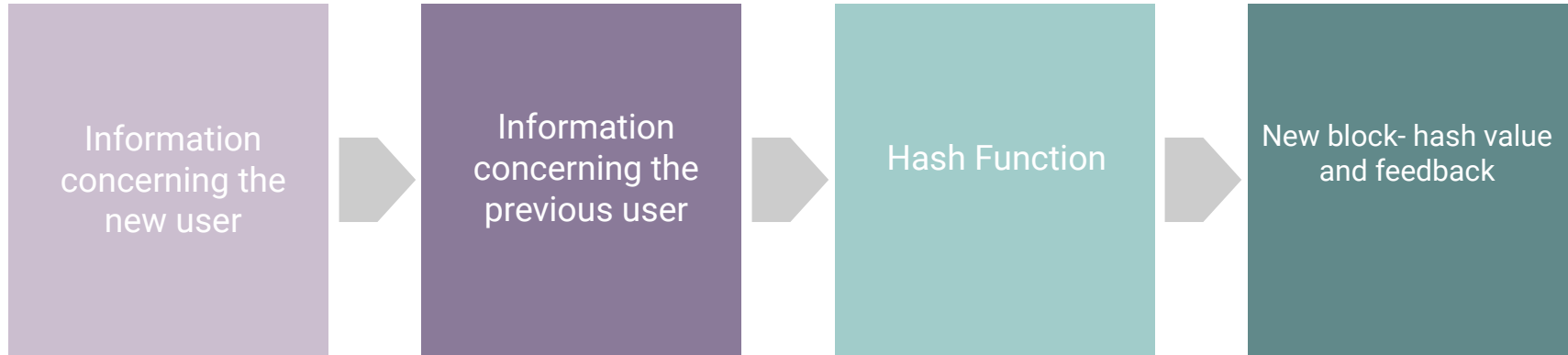
## Brand - Profit%

Each bubble represent the **brand** returning above 0.5% profit

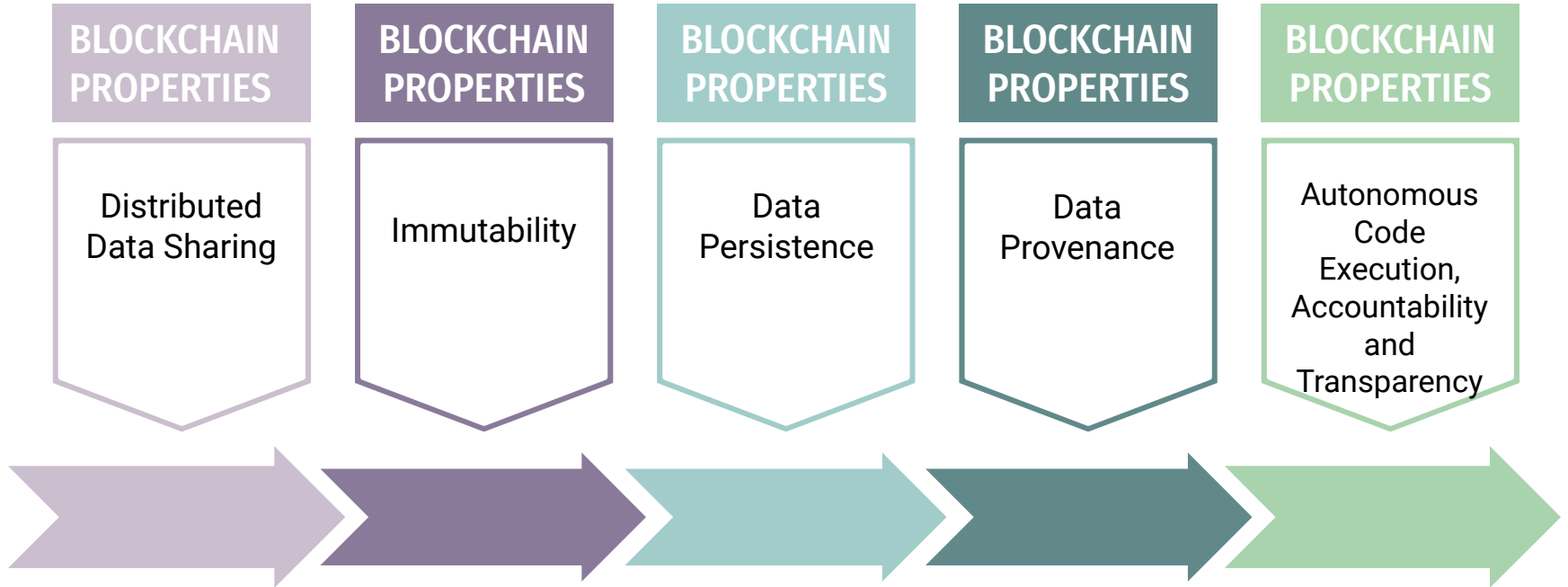




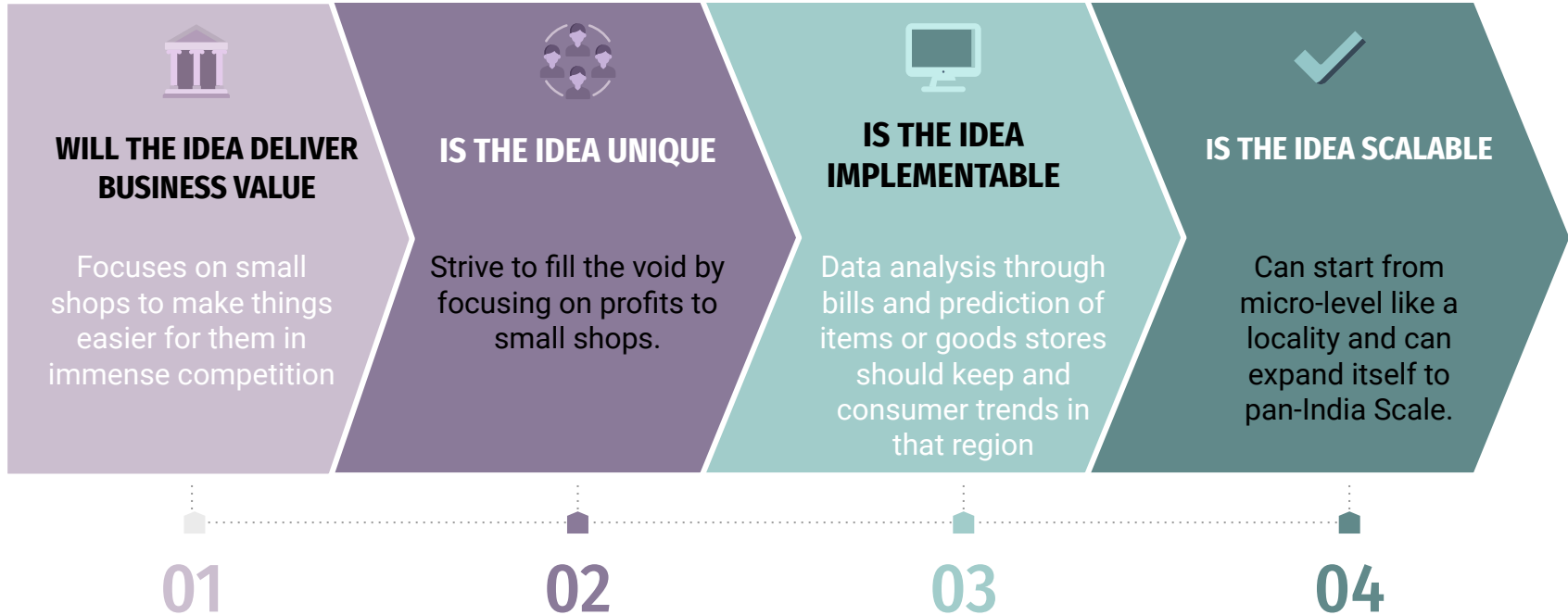
# OVERVIEW OF BLOCKCHAIN MECHANISM



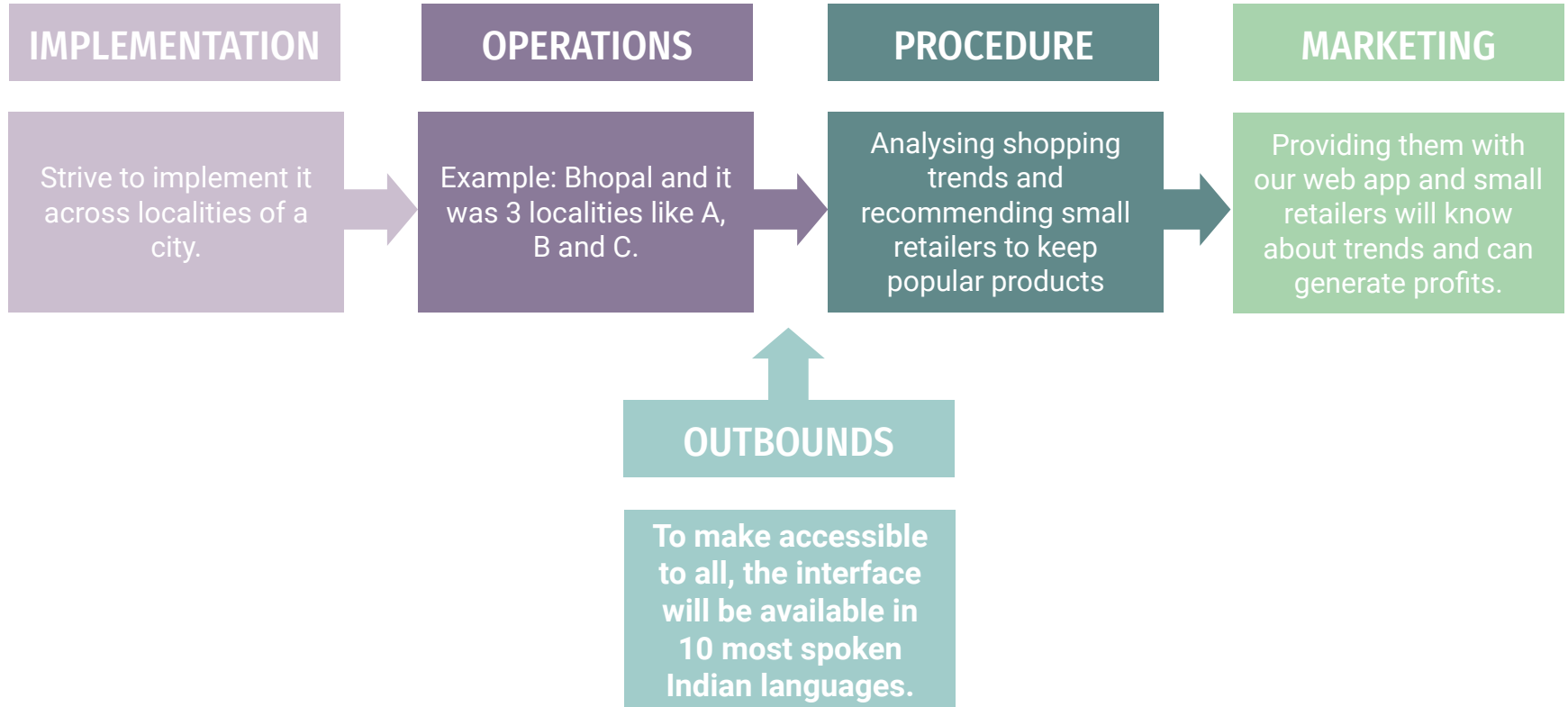
# OVERVIEW OF BLOCKCHAIN MECHANISM



# PROJECT POTENTIAL



# THE MVP PHASE



# SCALABILITY AND FUTURE PROSPECTS

## SCALABILITY



Starting from supporting small shops to generate profits in their local area



The project starts from micro-level like locality or street and can even expand upto a Pan-India scale.



Accessible to all as interface we strive to make the interface available in at least 10 different Regional languages.  
(eg: Tamil, bengali, etc)

## FUTURE PROSPECTS

Focusing on data on a large scale.



Using ML to compare trends in different regions



The product which is the most popular in that particular region will be recommended to the stores present in that region.



# TEAM MLcrats

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# Attachments



<https://github.com/orgs/prodigee-project/repositories>



<https://mlcrats-portfolio.netlify.app/>



<https://docs.google.com/document/d/1IB7qj8DU0-ghIsPTGDdsYbuhXHR/RwwEx/edit#heading=h.gjdgxs>



<https://mlcrats-main-project-site.netlify.app/>

