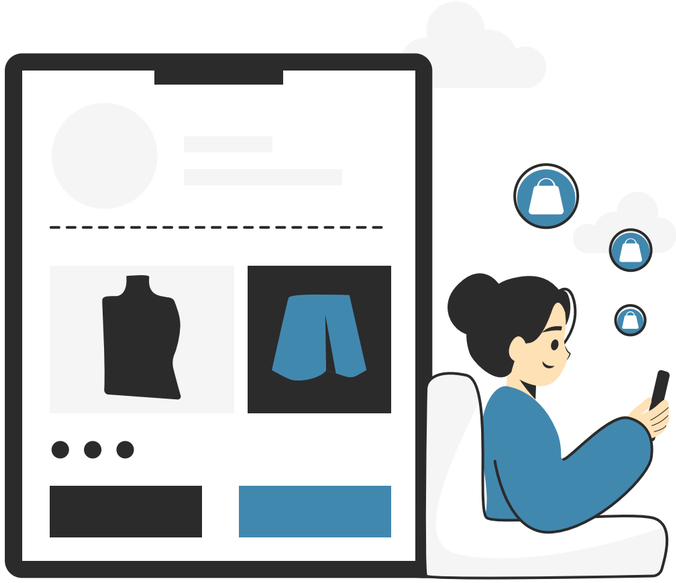
PORTFOLIO



Digital Wallet Analysis

Presentation by :

HALIZA MEYLA SAFIRA

About Me

A Statistics graduate with a strong interest in data analytics, data science, and machine learning. Proficient in R, Python, SQL, Microsoft Office and Tableau, and accustomed to processing data into valuable insights for business decision-making. Experienced in working on various projects that not only hone technical skills but also build communication and team collaboration skills. Motivated to continuously learn new technologies and contribute through innovative data-driven solutions.

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The data used is simulates transactions from a digital wallet platform

The company serves digital wallet users who buy many kinds of products from different merchants

From August 2023 - August 2024
The company has

23 Mil Total Sales

3,500+ Customers

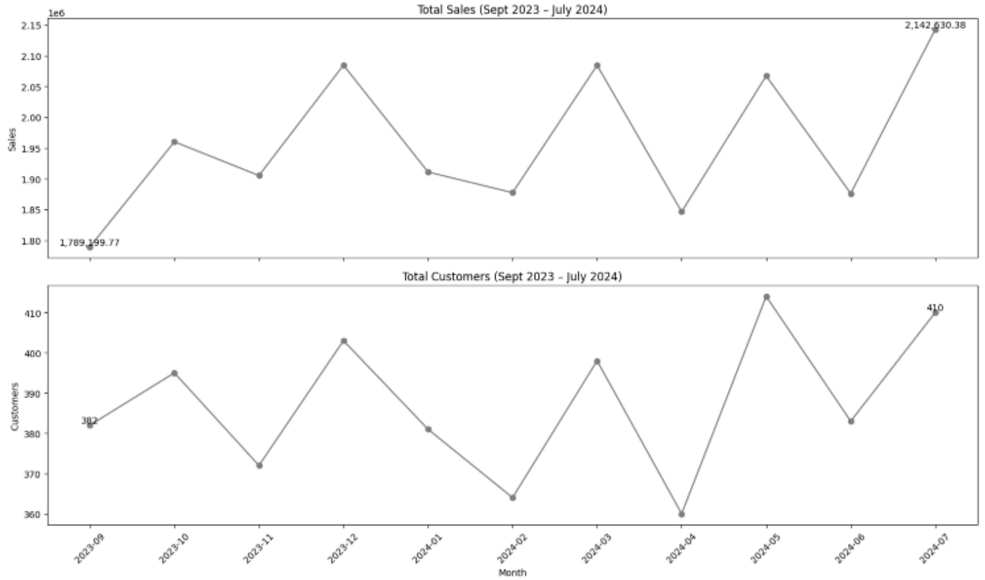
4,500+ Orders

100 Unique Items Sold

Limitation : The dataset's date time is only at August 2023 - August 2024

https://www.kaggle.com/datasets/harunrai/digital-wallet-transactions

Fluctuating Trends with a Slight Upward Finish

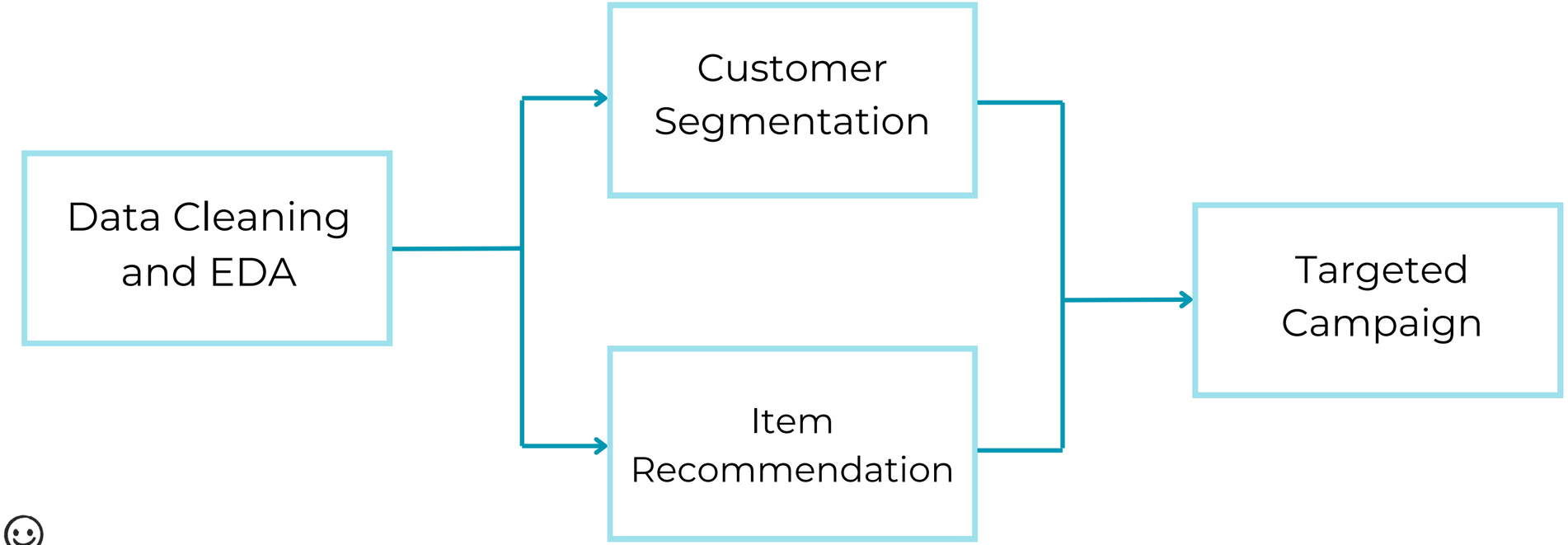


From Sept 2023 to July 2024, sales and customers fluctuated but still ended higher, showing modest growth.

The company increased their sales by about 20% and their customers by about 7%.

How to achieve at least a 10% sales growth target by end of 2025?

To solve this business problem, we need to do a few analyses, shown in this diagram.



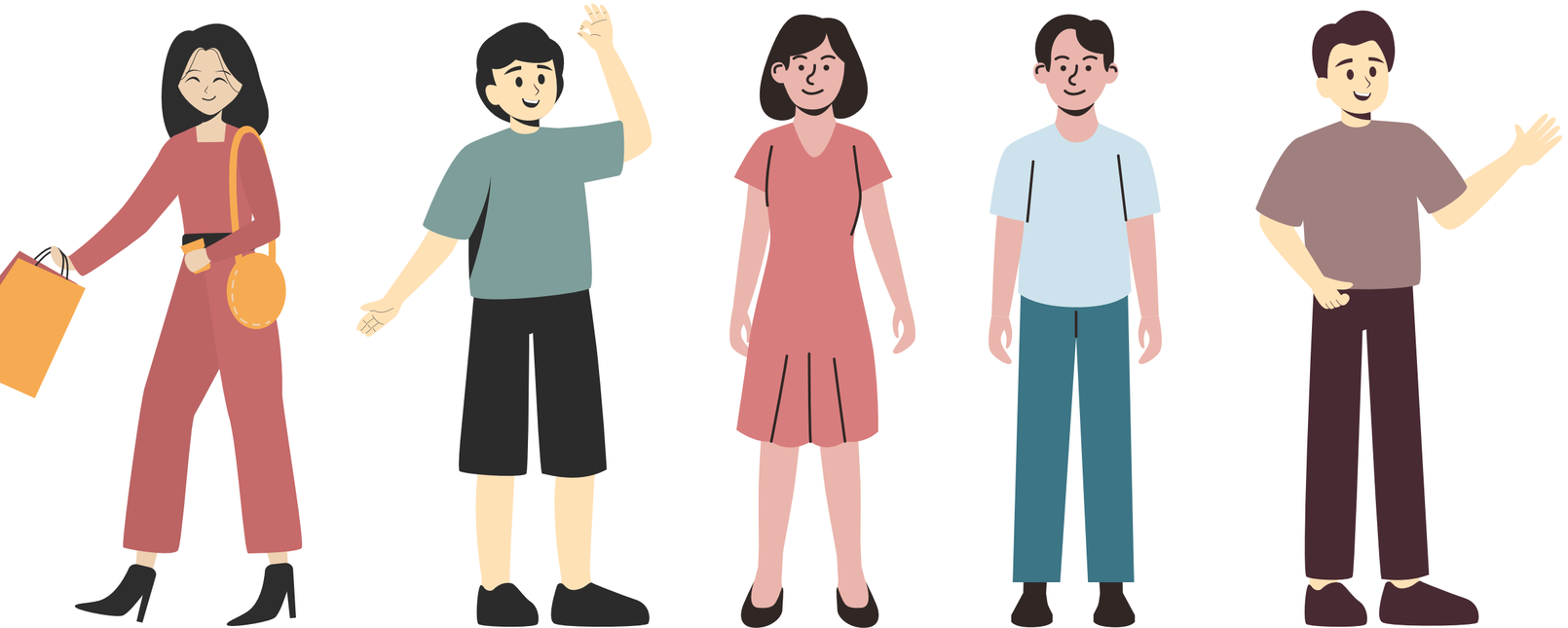
Customer Segmentation

By using Recency, Frequency, Monetary Analysis

Royal Customer

Potential Customer

Lost Customer



62.12% of Total Sales Come from Lost Customers

Royal Customer
317
(8,38%)

Total Sales
5 Mil
(21,27%)

Potential Customer
518
(13,69%)

Total Sales
3,9 Mil
(16,59%)

Lost Customer
2948
(77,93%)

Total Sales
14,6 Mil
(62,12%)

More into each Customer Cluster Characteristics

Royal Customer

- Highest average of **spending (15.165INR/ person)**
- Highest average **frequency (2,39 times/ person)**
- Lowest time since **latest purchase: 110,8 days**

Potential Customer

- Middle average **of spending (7.672INR/ person)**
- High average **frequency (2,01 times/ person)**
- Time since **latest purchase: 135,28 days**

Lost Customer

- Most number of people
- Lowest average **of spending (4.940INR/ person)**
- Lowest average **frequency (1 times/ person)**
- Highest time since **latest purchase: 192,51 days**

Customer Treatment Recommendations

ROYAL 01

Loyalty Program

- Points system
- Exclusive access
- Tiered membership

POTENTIAL 02

Refferal Program

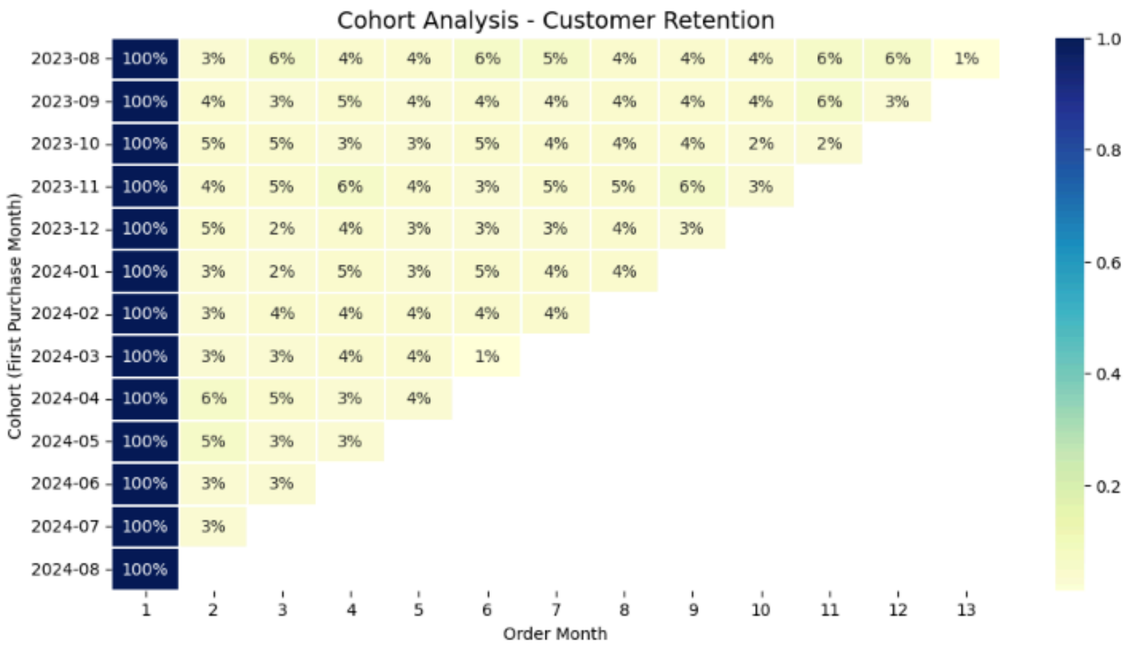
- Refer & Earn
- Social sharing rewards
- First-time buyer offers for referrals

LOST 03

Gift

- Win-back campaigns (vouchers/gifts)
- Birthday/anniversary surprises
- Special discounts

A significant number of customers returned in August



The cohort analysis highlights a steep drop in customer retention after the first month. Across all cohorts, **more than 95% of customers disengage** by the second month, with only about **1%** remaining active **after 12 months**.

Most customers buy **only once or occasionally**, so retention drops after the first month and the average time since last purchase is over 3 months.

Recommendation System Based on Purchase Record

User-based recommendation suggests new merchants for customers based on their past transactions and similarities with other users.

```
Merchants used by USER_05939:
- Carnival Cinemas
- Meru
- Bangalore Water Supply
- PVR Cinemas
```

```
Recommendation for USER_05939:
- Snapdeal (score: 0.5914)
- Flipkart Supermart (score: 0.5459)
- SPI Cinemas (score: 0.4752)
- Gujarat Gas (score: 0.4748)
- Myntra (score: 0.4395)
```

This score reflects how likely the user is to shop at these merchants based on similarity with other customers' behavior. The higher the score, the more likely users are to make transactions at these merchants.

This type of recommendation helps increase customer engagement by introducing merchants that are most relevant to the user's purchase behavior. Also known as **user-based collaborative filtering.**

Our current understanding ...

- There are 3 clusters of customers. Each has different characteristics and suitable marketing campaigns.
- Lost Customers contribute about 62% of total sales in 2023-2024.
- A significant number of customers returned in August.
- Using Collaborative Filtering to boosts engagement by recommending merchants most relevant to a user's purchase behavior.
- Collaborative Filtering can be used by Marketing and Product team to create a better offering based on similarity with other customers' behavior.

How we can grow sales and win more customers

Targeted Campaign based on Customers Characteristics

01

For the Royal class, the strategy should focus on maintaining their loyalty and preventing churn. For the Potential class, efforts should aim at converting them into higher-value segments. Meanwhile, for the Lost class, campaigns should prioritize re-engaging them and driving their return to the company's e-commerce platform.

Using Recommendation System to increase Revenue

02

Based on customers' purchase history, a recommendation system suggests other products they might like. This helps increase sales by making the shopping experience more personalized.

Suggestions on what to analyse

For future development, this project can be expanded by using more detailed and comprehensive data. With richer data, further analysis can cover aspects such as product categories, deeper customer profiles, and external factors (e.g., demographic or economic indicators). This will allow for more precise insights and more effective strategy recommendations.

DATA SCIENTIST PORTFOLIO

Thank You So Much!

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