Predicting Conversion of Migo's Free Trial Users to Paying Customers

to Increase Sales by Developing an Effective Free-Trial Program

Team 3

Chawisa Mahajindaplan | Thuc Han Bui
Jariya Tienmongkol | Ryjill Roa

Business Problem

Migo

Problem:

- New-to-market and low brand awareness
- Effective free-trial program is a good way to recruit customers.

Stakeholders:

- Migo customers
- Marketing, Purchasing, Data science and related departments in the company.

Opportunities:

- High internet cost; slow internet
- People love to watch movies and series.
- Long commutes due to traffic congestion.

Challenges:

- Identify the characteristics of a customer that will convert from free trial to a paying subscription.
- Identify most effective free-trial program

P.S. Ethics should be kept in consideration: Concerns regarding users' data being collected, i.e., watching habits, locations (through hotspots)

Increase Sales By Offering Effective Free-trial Program To The Customers

KPI: Increase in the conversion rate of free-trial customers to a paying customer within one month by 10%.
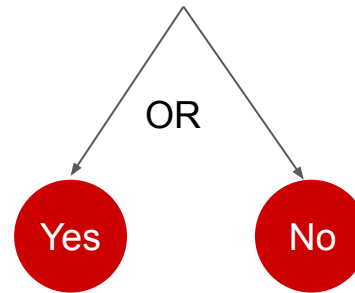
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Data Mining Goal

"To predict whether free trial customers will purchase a subscription on their next transaction within one month after their first free trial ends."

Supervised and Predictive Tasks

Customer Spending

OR

Yes

No

Data Description

Migo

Transaction
Product_id
*Customer_spending

Download
Expected_space_taken_mb
Dl_takt_time_sec
*Date_difference

Engagement
Engage_at_sk
Absolute_engage_minute
Unique_engage_minute
*Unwatched

Title Description
Content_type
Running_length
Migo_genre
Content_provider
Country

*New column created

Clean Data → Filter only first free-trial users → Create new columns → Merge → Run Algorithm

Merged Data

| unique_id	hotspot_i	spend_date_sk	prod_10	prod_2	prod_8	prod_9	prod_25	prod_1	prod_3	prod_16	prod_15	prod_18	prod_30	prod_28	prod_33	prod_32	prod_34
1.18E+15	C00335	12/31/2017	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1.18E+15	C00021	12/21/2017	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1.20E+15	C00184	11/2/2017	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1.33E+15	C00021	12/16/2017	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1.35E+13	C00346	10/11/2017	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

unique_id	customer_	absolute_	unique_er	dl_takt_tir	avg_diff_c	expected_	SERIAL	MOVIE	EPISODIC	running_le	genre_Cor	genre_Ror	genre_Hor	genre_Dra	genre_Adv	genre_Far	genre_Act	genre_Cri
1.18E+15	No	0	0	153.21	0	668.291	0	0	0	0	0	0	0	0	0	0	0	0
1.18E+15	No	108	122	76.59036	0	6857.614	0	0	0	0	0	0	0	0	0	0	0	0
1.20E+15	No	959	791	81.87778	1.6	23735.98	56	10	8	4888	14	49	4	8	2	2	1	1
1.33E+15	No	0	0	481.585	0	1957.575	0	2	0	220	0	0	0	0	0	0	2	0
1.35E+13	No	0	0	139.815	0	783.404	0	0	0	0	0	0	0	0	0	0	0	0

| unique_id	genre_Kid	SBS	KBS	Viva.Films	JTBC	Lionsgate	Regal.Ente	BBC	Turner.Br	KR	PH	US	GB	unwatched
1.18E+15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.18E+15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.20E+15	8	20	32	5	4	3	2	8	0	56	7	3	8	4097
1.33E+15	0	0	0	2	0	0	0	0	0	0	2	0	0	220
1.35E+13	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Method

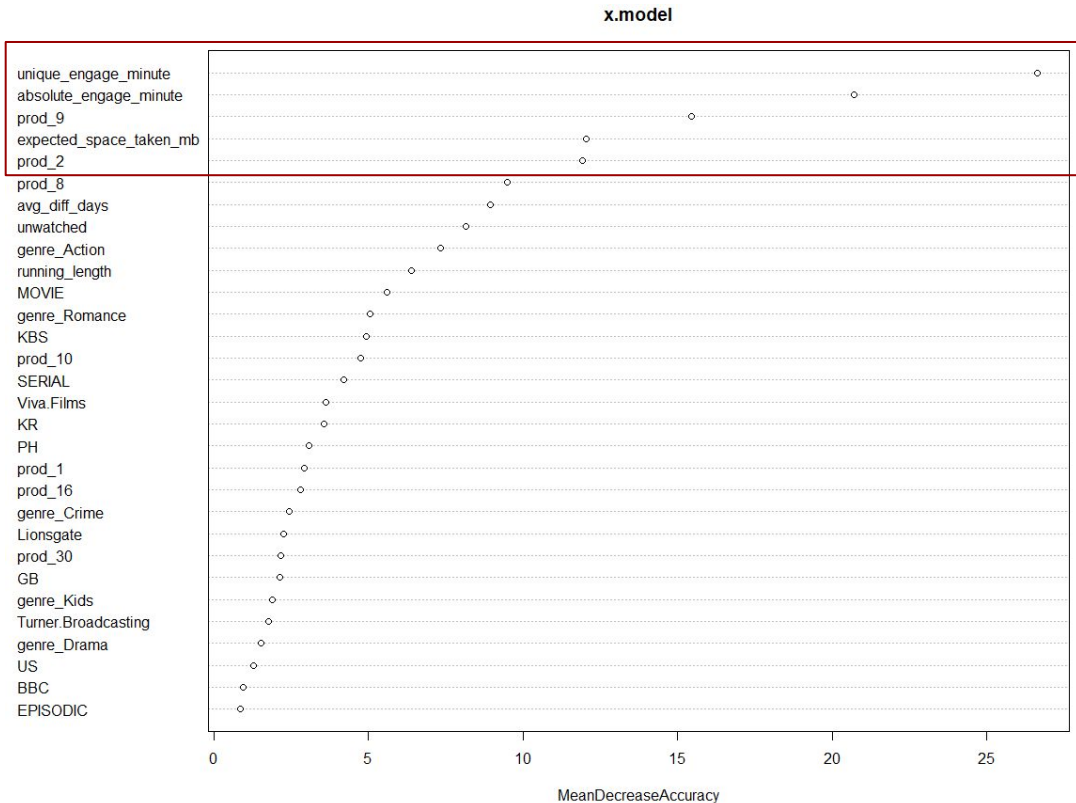- **Lasso Regression / Naive Bayes / Random Forest**
- **Lift & Gains Chart**

Lift Chart

Gains Chart

Evaluation

x.model

MeanDecreaseAccuracy
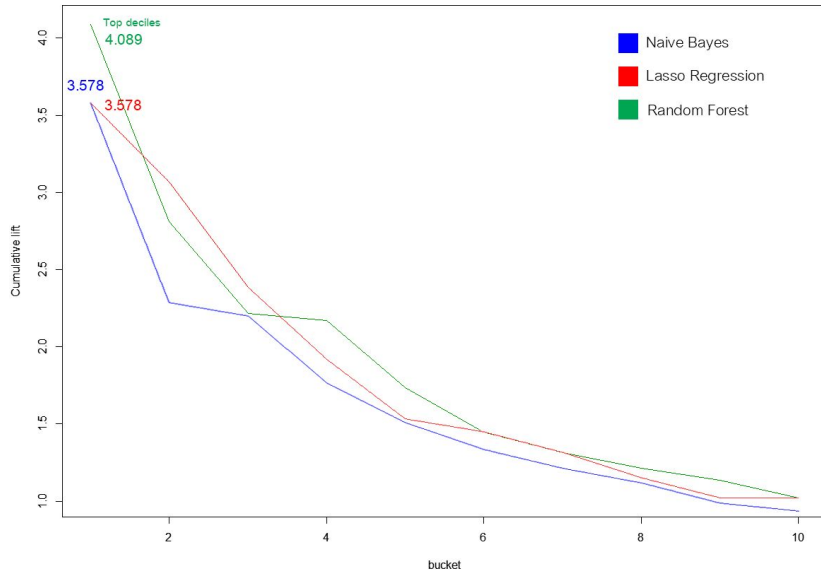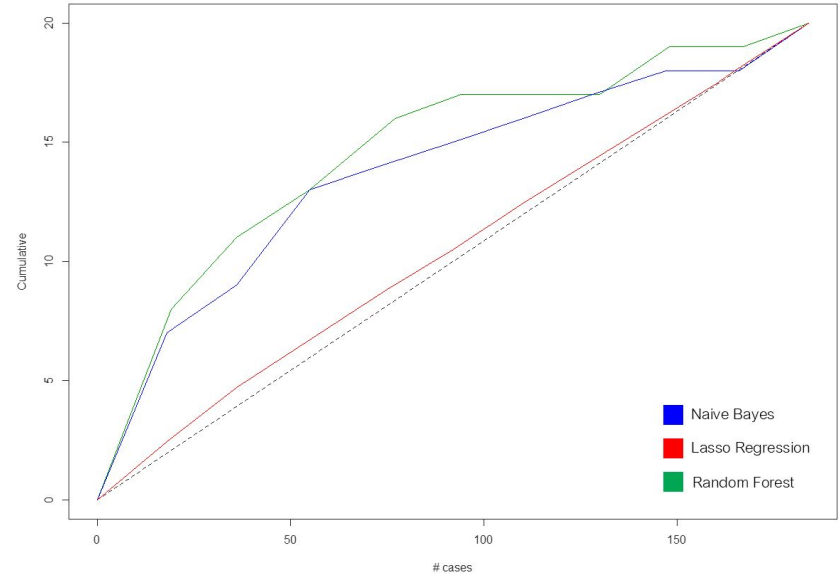
- We decided to use Random Forest model due to the higher accuracy and top decile.
- The most effective free-trial promotions: 2-Day pass, PisoMigo_trial
- Behavior of promising subscribed customers:
  - The longer and the more time users watch content, the higher possibility they will convert.
  - Have enough space to download large file size in their devices.

Recommendations

Marketing:

- Provide short period of free trial since long free-trial period promotion does not perform well.
  - We assume that this is because users have limited time. They make the most out of the trial by exploring the application. Therefore, they tend to be familiar with the app and be more engaged than the ones with long free-trial period.
- Launch marketing campaigns that encourage users to spend more time watching contents, i.e., redeem rewards after continuously watching for 1 hour, etc.
- Offer subscription promotion to prospect customers when the free trial period is about to expire.

Purchasing:

- Despite less correlations than others, the result shows that users tend to convert if they watch the following types of contents.
  - Genres: Action, Romance   Type: MOVIE, SERIAL   Provider: KBS

Implementation & Conclusion

Product consideration

- Dataset and model - run 3x a week and analyze on an on-going basis

- Require data update when the accuracy is less than 75%

Limitations

- There exists some missing values (missing titles & engagement minute)

- The model is limited to the first free trial and conversion of users within 30 days

- No customer feedbacks