

SUBSCRIBER OPTIMIZATION FOR ROSETTA STONE



THE DATA MINERS

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Agenda

Introduction

Action Plan

Cleaning

Q1. Valuable Subscriber Identification

Q2. Subscriber Segment Analysis

Q3. Upsell Subscriber Identification

Q4. Non-Renewal Subscriber Profile

Q5. Business Opportunity Insights

Conclusion





INTRODUCTION



Action Plan

	Week 1							Week 2						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Open Data:	█	█												
Data Discovery:		█	█	█	█	◆								
Data Cleaning / Transformation:		█	█	█										
Early Visualization:					█	█	█	█	█	█				
Modeling:						█	█	█	█	◆				
Consolidation and Analysis:								█	█	█	█	█	◆	
Documentation:									█	█	█	█	█	█
Presentation Creation:													█	█
Presentation Practice:														█



Data Cleaning



Cleaning: Subscriber Dataset

- Addressed **NULL values** in key columns: Purchase Amounts, Currency, Free Trial Dates, Notifications
- Implemented **currency conversion** to USD from 2020 exchange data
- Dropped Major Purchase Amount outliers (> \$100,000 USD)
- Filled 1400 rows of that reflected \$0 Web purchases with averages calculated by other Web purchases by the language and type observed.
- Final row total: **38,611** observations.
- After cleaning the team created two more datasets:
 1. **appFilled.csv**: addresses unreliable app purchase amounts in original dataset
 2. **merged.csv**: developed to combine subscriber data and app activity data

Cleaning: App Activity Dataset

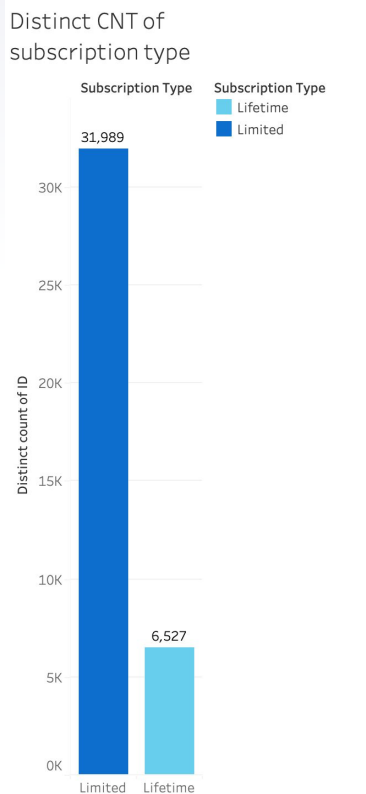
- ▶ Tracks user actions within the app and includes platform used, action taken, and date.
- ▶ Python for data assessment, cleansing and identified missing or null values
- ▶ 44,718 actions lacked platform data
- ▶ Placed 'Unknown' for empty platform fields
- ▶ 14,420 entries missing both Activity Type and Date- removed to ensure data completeness
- ▶ Original dataset: **809,478** data points
- ▶ Post-cleaning: **795,058** rows
- ▶ Aimed to retain maximum useful activity data

Understanding Subscriber Value

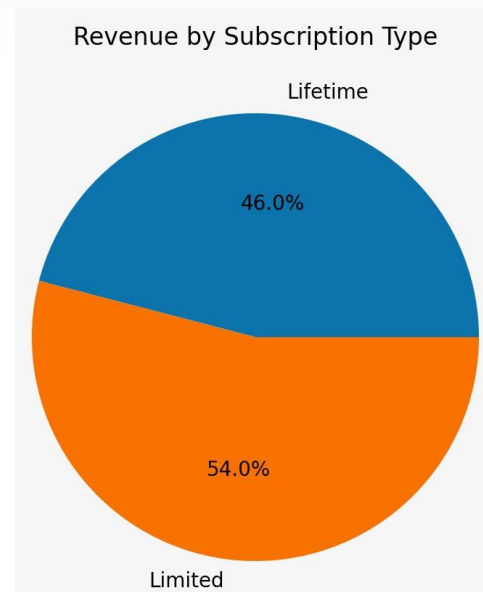
- We defined subscriber value by:
↳ **Revenue contribution**

Subscription Type Breakdown:

- 83% Limited subscriptions
- 17% Lifetime subscriptions



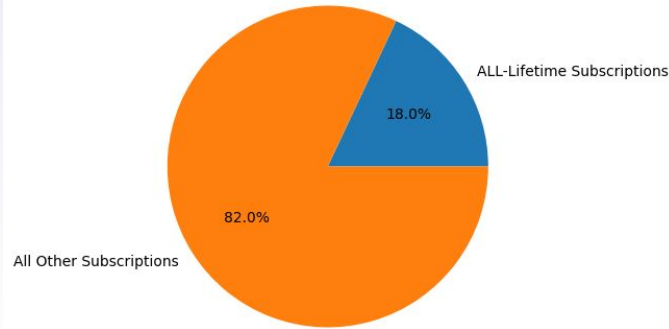
- With a 66% difference, revenue is almost even!



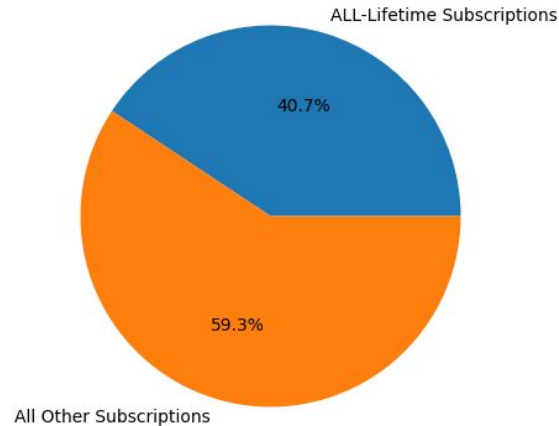
18%
of Subs
make up

40.7%
of our
Revenue

Popularity of ALL-Lifetime Subscriptions



Revenue of ALL-Lifetime

**Most Valuable Subscribers:**

ALL-Language-Lifetime subscribers.

Assumption:

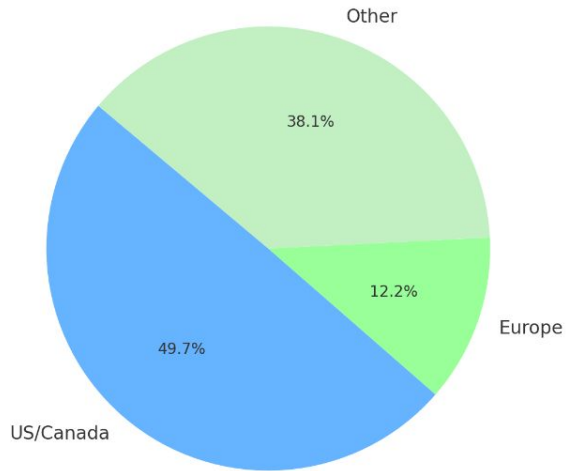
ALL-Language-Lifetime subscribers have no further products to purchase, diminishing those customers' remaining value.

Caveat: Growing Limited/Other subscriptions must take place to sustain revenue growth over time.

Typical Segmentations

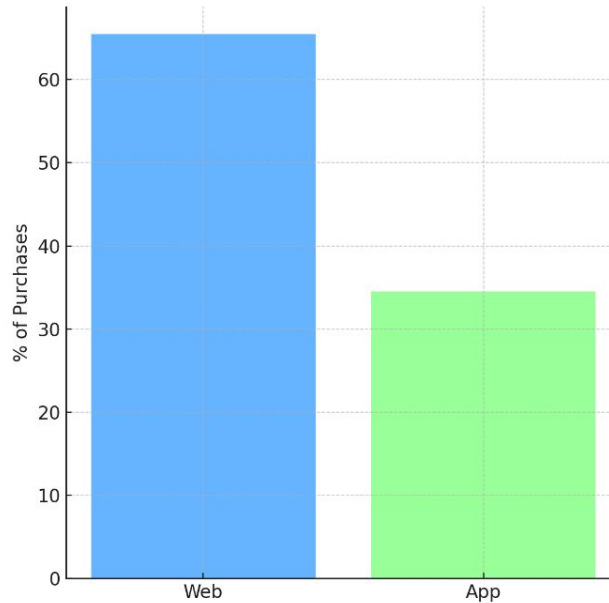
Geographical Segment

Geographical Distribution of Users



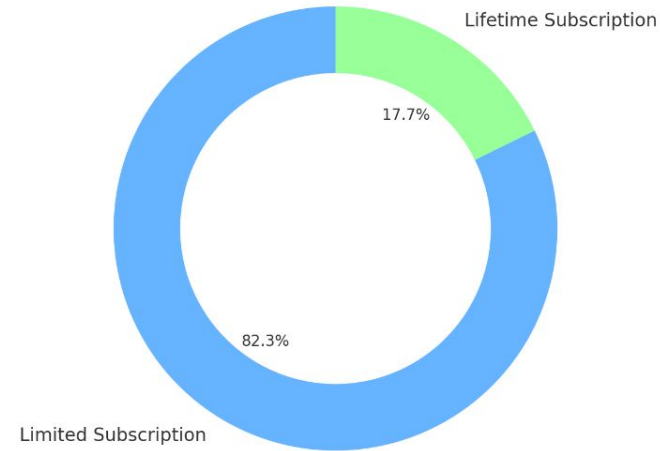
Store Segment

Purchase Store



Sub. Type Segment

Subscription Type



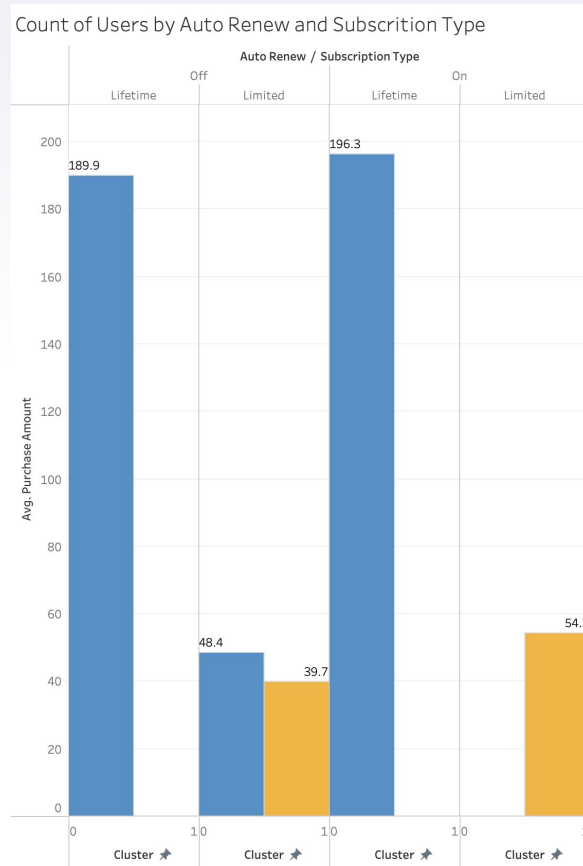
How do subscribers differ in behavior?

Q2

Behavioral Segment

Content Motivated:

- Having auto renew on more often
- On average pay 10% more than their counterparts
- Have more interactions with the application
- Have more completed units and modules in the application



The plot of average of Purchase Amount for Cluster broken down by Auto Renew and Subscription Type. Color shows details about Cluster. The marks are labeled by average of Purchase Amount. The view is filtered on Auto Renew, which keeps Off and On.

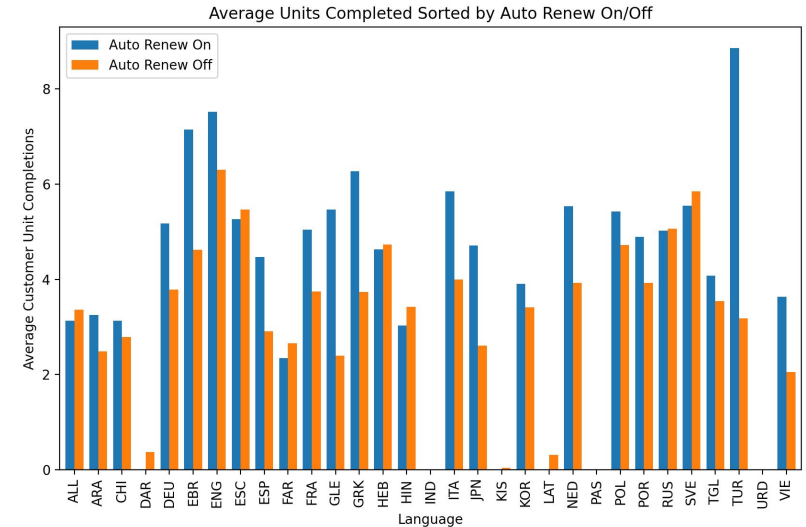
How do subscribers differ in behavior?

Q2

Behavioral Segment

Price Motivated:

- Having auto renew off more often
- Pay ~10% less on average
- Have less overall interactions with the application
- Have less completed units and modules in the application



Which customers can we sell more to?

Q3

- Customer Group

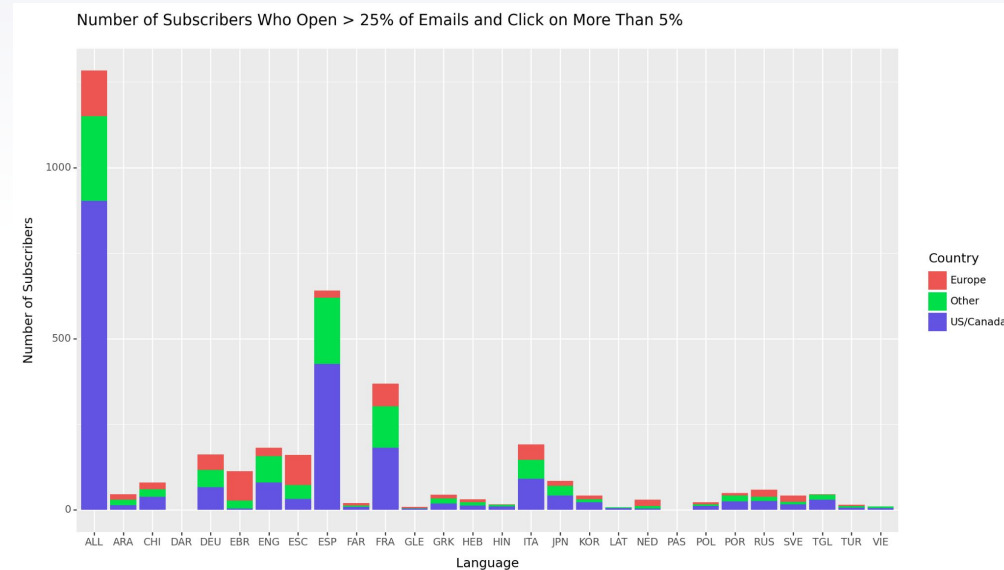
- Customers who open 25% of our emails, and interact with 5% of them
- No geographical affect
- Clear geographical language preferences.

- Limitation

- These customers make up only 9.7% of our customer base

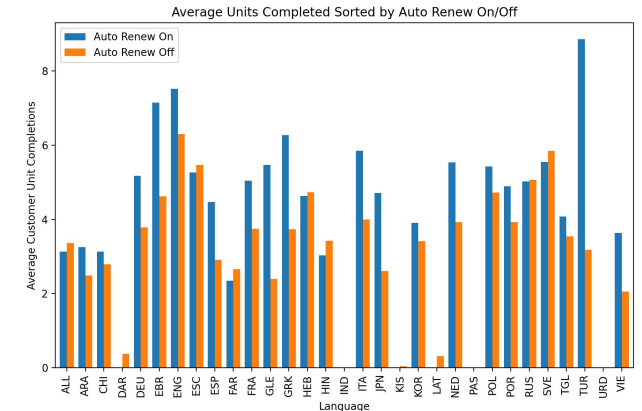
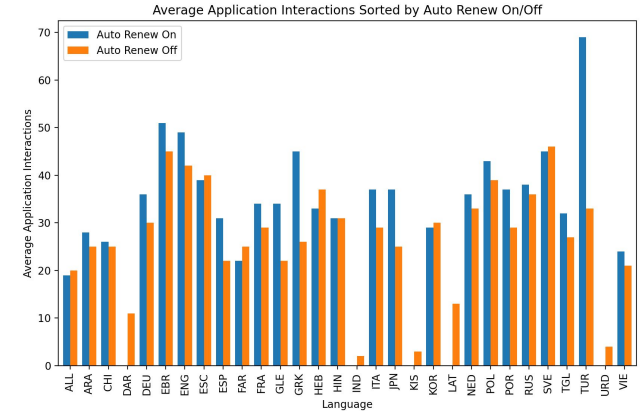
- Upsell Possibility

- Targeted promotions towards languages with higher i.e, US/Canada have a higher interaction rate with European languages.



Profiling our customers not continuing

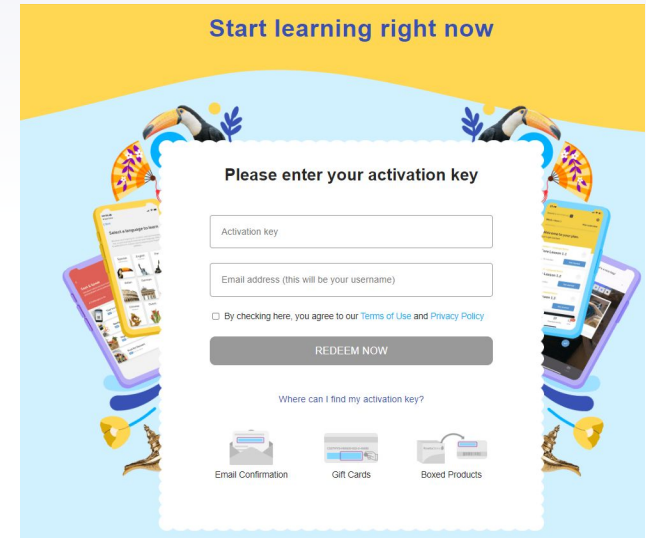
- Customers with auto renew off equate to **60%** of all limited customers.
- Profile matches our segmentation group of **Price Motivated** customers:
 - Tend to subscribe for ~3 months less.
 - Pay on average 10% less.
 - Will usually have less application activity and completed units and modules.



Barriers to Engagement

Q4

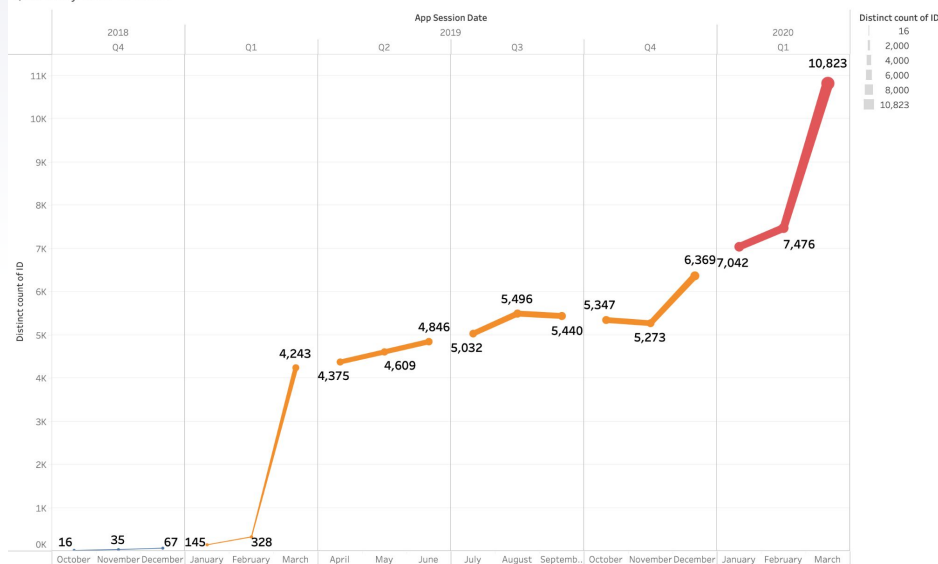
- We identified Email Subscriptions as our largest barrier to engagement.
 - Only **47.5%** of our customers are subscribed to emails.
 - These customers have an average click rate of **26%** which is above MailChimp's benchmarks for our industry.
- Customers with **auto renew off** have lower engagement, and show to be subscribed less to emails (**only 43%**)
- We recommend to focus on converting non-renewing subscribers to email subscribers to improve engagement metrics.



40.7% of our subscriptions begin within 2 months

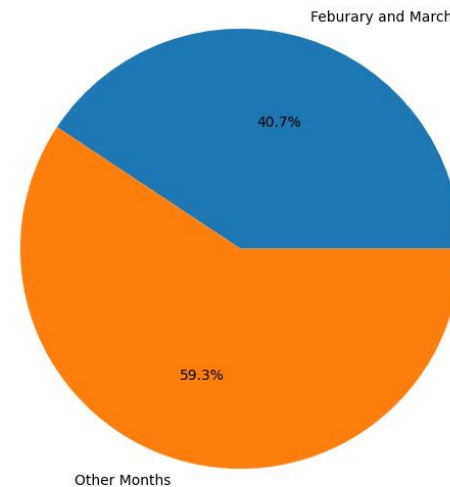
Q5

Quarterly User Growth



The trend of distinct count of ID for App Session Date Month broken down by App Session Date Year and App Session Date Quarter. Color shows details about App Session Date Year. Size shows distinct count of ID. The marks are labelled by distinct count of ID.

Subscription Start Dates

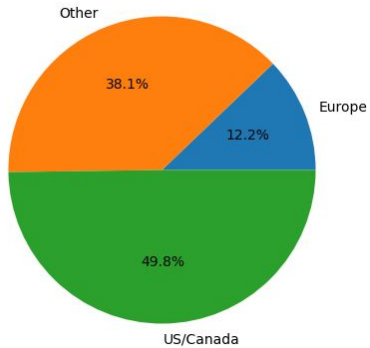


- Repeated surge in app activity during February and March. (App Activity data)
- Correlated the phenomenon with subscription start dates. (Subscription Data)
- 40.7% of annual subscriptions begin in only February and March

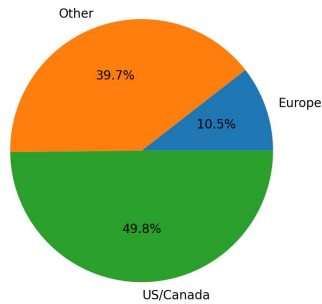
Further Analysis

- Geographic location does not significantly impact subscription trends in these months

Customer Distribution by Country

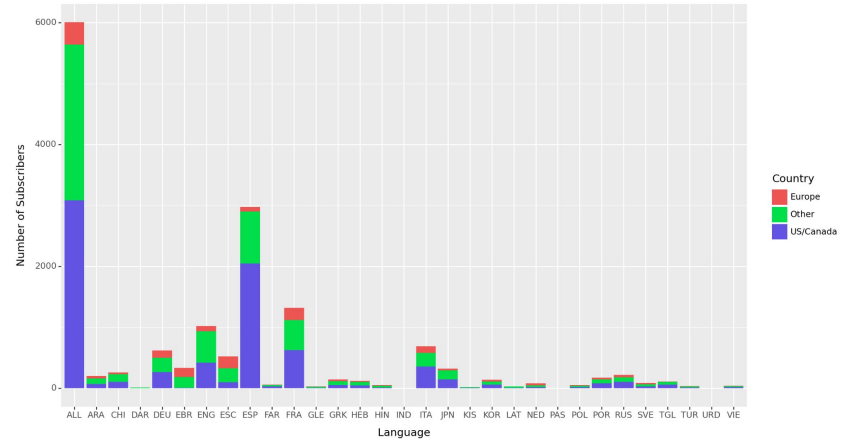


February / March Subscriber Distribution by Country



- There is a concentration of country origin in specific languages during these months.

February / March Subscriber Distribution by Language



Relevant Business Opportunities

- Opportunities

- Increase marketing efforts during peak months to leverage high conversion rates
- Run more global promotions to incentivize customers
- Offer bundles tailored to popular destinations relevant to these months (e.g., France and Spain)





Conclusion/ Executive Summary

Executive Summary Recommendations

Target Scope:

- Balance efforts between converting existing customers to ALL-Lifetime subscriptions and acquiring new customers to replace converted customers.
- Utilize tailored marketing strategies based on customer behavior and geographical data to enhance conversion and retention.
- Leverage seasonal trends for strategic promotional campaigns.