Action/Analytical Plan

MGSC410

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Introduction

In order to help Rosetta Stone generate more revenue and meet their business goal, we analyzed the Rosetta Stone subscription dataset and came up with an analytical plan to outline the findings we discovered from the dataset, as well as an action plan outlining the business opportunities going forward.

For the analytical plan, our goal was to determine the most valuable subscribers and the subscriber segments present in the database, identify subscribers who could be sold additional products, identify the barriers to deeper subscriber engagement, and find potential business opportunities.

We first started by cleaning and exploring the dataset. We determined the variables that could have an impact on the total revenue, and performed data analysis on those variables. We also cleaned the dataset and got rid of some of the rows with null values. We think that Subscription Type, Subscription Event Type, Subscription Start Date, Subscription Expiration, Auto Renew, Country, Lead Platform, Email Subscriber, Push Notifications, Send Count, Open Count will have an impact on the revenue of Rosetta Stone. So, these are the columns we will run data analysis on to test our hypothesis. We analyzed the dataset using graphs and pivot tables for visualizations and built a linear regression model in Excel.

Action/Analytical Plan

To determine the most valuable subscribers, we developed a point system evaluating how valuable the users are based on their total points. We included Language, Country, Subscription Type, Subscription Event Type, Auto Renew, Email Subscriber, Push Notifications, Lead Platform, and Email Open Count in the point system. For language, the top two languages within the top ten revenue were given a 1, otherwise a 0. Likewise for countries where the top ten revenue countries were given a 1, otherwise 0.

This was to make sure we would prioritize the users that would generate the highest revenue. For Subscription Type, lifelong subscribers will be using the service for a longer period of time so they get 1 point, and limited subscribers get 0 points. For Subscription Event Type, users who would renew their subscriptions got 1 point, and users who are initial subscribers got 0 points. This is because users who renew their subscriptions are loyal customers. For Auto Renew, users who had auto renew on get 1 point, 0 points otherwise as the chance of users renewing the subscriptions will be higher with auto renew on. For Email Subscriber, users who were subscribed to email got 1 point, and users who were not subscribed to email got 0 points since people who are subscribed to emails will have a higher chance of seeing company updates and advertisements. For Push Notifications, users who had push notifications on get 1 point, 0 otherwise since users who have notifications on will get notified when there are new products or services. For Lead Platform, users who are using the website get 1 point, while app users get 0 points since over 60% of users are using the website and 48.95% of the null values on the purchase amount column and currency columns are from an app purchase store. Because of this, users on the website are more likely to see and buy based on advertisements on the website. And finally, for Email Open Count, users who opened more than 50% of the emails get 1, otherwise 0. We summed up the total points by user at the end, and filtered the users to display the ones who had the highest points among all users. The higher points indicated a higher likelihood of customers purchasing additional products or services. These are the most valuable customers based on the long-term revenue they generate for the company.

From determining the most valuable customers, we were able to move on to how we could market additional products and services. We found that more advertisements are needed. Advertisements should be sent out through emails because about half of the users are subscribed to emails. Another useful place to put advertisements is on the website since most of them use the website instead of the app. Additionally, Rosetta Stone should advertise their free trials more because the chance of renewing the subscription is a lot higher for customers who have used the free trial before.

After identifying the valuable subscribers and users who can be sold additional products, we determined the barriers that prevent users from getting more engaged with

the company's service. User setting is one of the barriers. Users who have Auto-renew off might lose the service for a while if they forget to manually renew the membership. Users who are not subscribed to emails might miss out on new products and services. Another setting is push notifications which if they are off, users might not get notified on time when there are updates from the company. These user settings will not necessarily make Rosetta Stone lose customers, but they are definitely preventing users from getting more engaged.

Not enough advertisements, especially not enough advertisements about the free trial is another barrier. We found that users who used the free trial before purchasing a subscription have a higher chance of renewing the subscriptions later, but 84.21% of the users didn't use the free trial before purchasing a subscription. We think this could be due to the lack of advertisement on free trial that not that many people know about it. Moreover, advertisements should be sent out via emails (with about 50% of users subscribing to company emails) and put on the website (as over 60% of users use the website instead of the app).

For potential business opportunities and selling additional products, we mainly look at the country column. We found that US/Canada would be a great potential target audience for additional products and services. A big part of that is due to US/Canada users being more willing to be informed by email when compared to Europe and Others. This allows people from US/Canada to have access to new updates from Rosetta Stone while not costing the company too much (as sending out product/service information via email is not as costly as putting up advertisements on websites).

We also came up with ideas like limited deals offered to customers who already had push notification on. This will make more users turn on notifications as the deals will only be offered to those with notifications. Another way we found that could be useful in getting people to turn on their push notifications would be to create a daily mission/task in a game form. This would encourage push notifications as having a daily reminder to play would make sure they would not lose their progress. Additionally it could help in retaining daily user interaction and offer reward points or resources that could be used within the program. More users would be motivated to open the app daily which would also keep them informed on updates as those notifications would be the first thing that
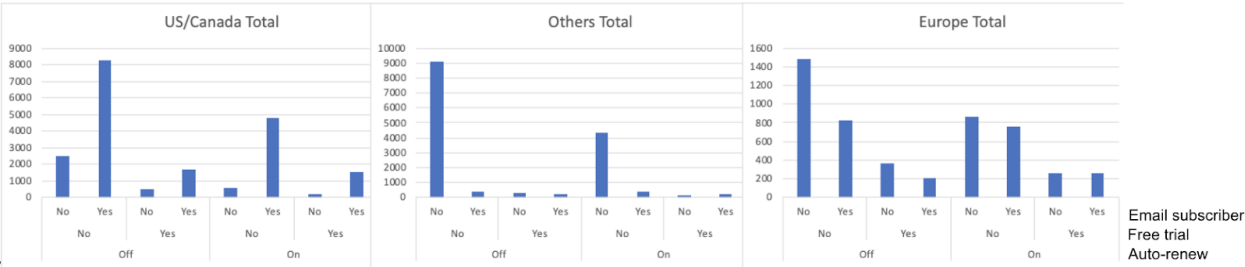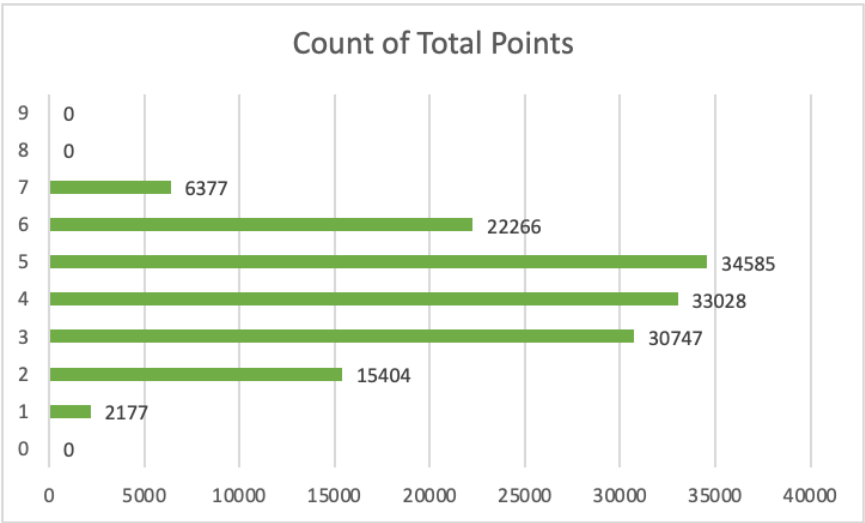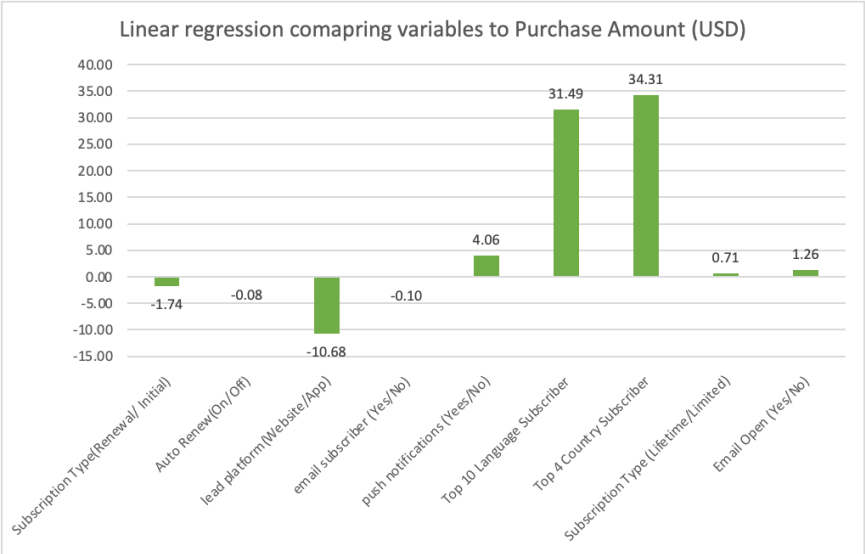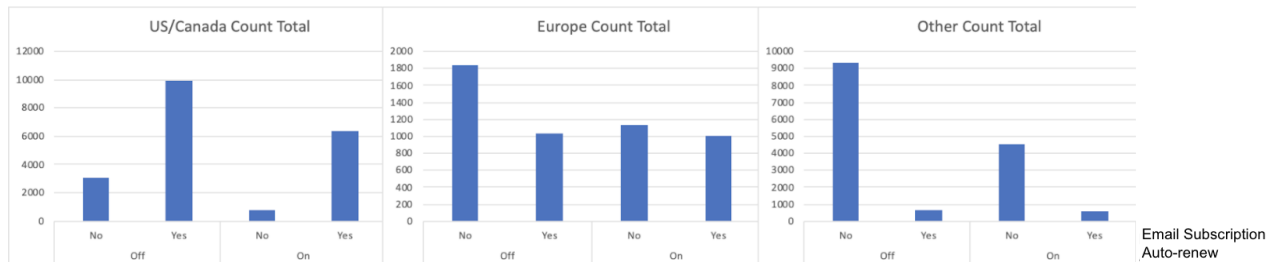
would be shown before they start their game.

With over 50% of users paying in either USD, GBP, or EUR, most people are from the US/Canada and Europe. In these countries, the predominant languages are English, Spanish, German, and French and from the website the information can be presented in either English or Spanish. This just reinforces the idea that this website is intended for people in the US/Canada. By finding languages that are particularly hard to learn if you are a native English, Spanish, German, or French speaker we were able to find another business opportunity. The languages that are particularly hard to learn include Arabic, Chinese, Japanese, and Korean. This leaves a big opportunity to offer a special discount to those learning these languages. By offering a special promotion, they would be more likely to make an initial subscription that would last much longer than any other language.

Other business opportunities we found were finding better ways of promoting the discounts they offer for educators. English, Spanish, German and French are all common languages kids are encouraged to learn in Western schools. By advertising the discounts already offered for educators, they will be able to see how using Rosetta Stone can be much better than an outdated textbook. By making the website and app have more features that would allow teachers to not only educate but also quiz and test, they could use one subscription to teach an entire course.

Finally, another business opportunity is using the points to maximize profit. For people scoring between 0 to 2, there needs to be a stronger push to retain them by offering initial joining incentives to get involved. For people scoring between 3 to 5, Rosetta Stone can offer smaller incentives more frequently to get people on the website or app more, eventually getting them to turn on features like Auto Renew and Push Notifications. And finally, for those scoring 6 to 8, those are the customers that can be offered the best promotions and deals as those are the customers that will generate the most revenue.

Code/Visualization

Linear regression comapring variables to Purchase Amount (USD)

Variable	Value
Subscription Type(Renewal/ Initial)	-1.74
Auto Renew(On/Off)	-0.08
lead platform(Website/App)	-10.68
email subscriber (Yes/No)	-0.10
push notifications (Yees/No)	4.06
Top 10 Language Subscriber	31.49
Top 4 Country Subscriber	34.31
Subscription Type (Lifetime/Limited)	0.71
Email Open (Yes/No)	1.26

Count of Total Points

Points	Count
9	0
8	0
7	6377
6	22266
5	34585
4	33028
3	30747
2	15404
1	2177
0	0

US/Canada Total

Others Total

Europe Total

Email subscriber
Free trial
Auto-renew

Limitation

There are limitations and assumptions we made. For one, we did not use the App Activity dataset as we did not see any use in it with most of the users choosing the website over the app. There were also other rows and columns we took out because there were too many missing values making them hard to analyze. We used the columns that we thought had the most impact on the overall revenue in order to find which users were the most profitable.

Conclusion

In order for Rosetta Stone to meet their business goals and continue generating revenue, they need to keep their most valuable customers happy, use their emails and website to promote deals and specials, promote languages that will captivate audience for a long time, invest more in promotion overall, and use daily missions or other ways to encourage daily usage of the app and turning push-notifications on.

There are limitations on this dataset due to a good amount of missing values, and how much the dataset reflects the reality is uncertain. The analytical/action plan we came up with would work as a general guide for Rosetta Stone to make more profits, keeping loyal customers happy while getting new subscribers.

Going forward, we hope to get more data on Rosetta Stone so we can split the big dataset up into the training set and test set, and perform model validation too. With data training and model validation, our findings will be more accurate, and our predictions will be able to be applied to other similar datasets, for future data for Rosetta Stone.

Division of Work

We divided the work by splitting up the variables within the dataset amongst all of

us. We explored our variables and saw how our variables could be applied to the questions within the project. Once we had time to find the relevant data, we met up to discuss which data could be further applied to which questions. With that, we edited the google documents and google slides so we could all collaborate. We did not necessarily have certain questions for certain people, rather we saw which questions our data could be applied to and applied it there.