Mobile App Data Analysis

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1. Insights

a. Weekday Patterns

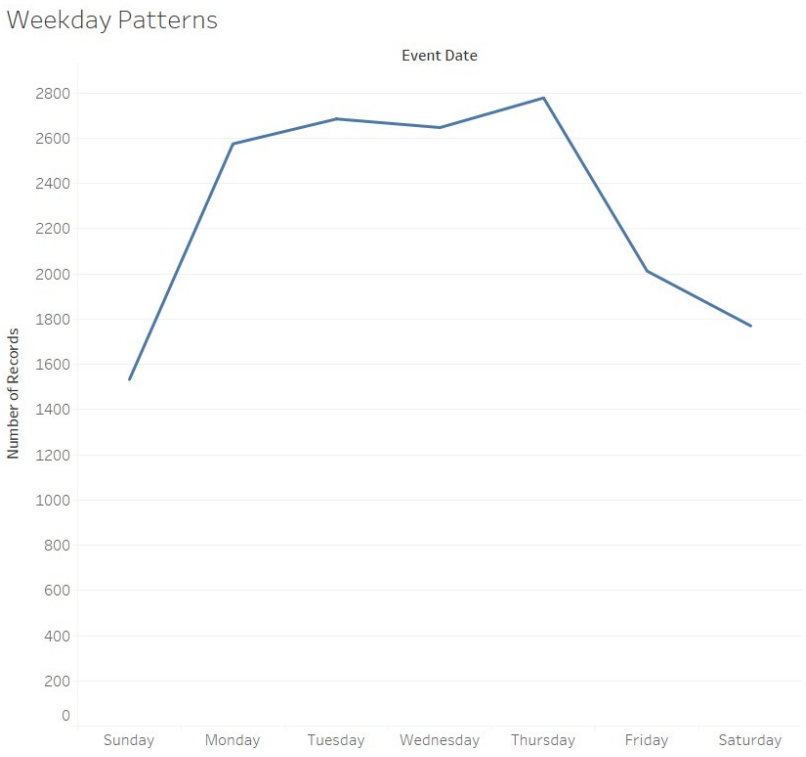

Figure 1

One of the most important details to know about app utilization is how the utilization of the app varies with respect to different time periods. As shown by Figure 1, there is a clear trend that is shown through the app's activity patterns through the week. It is clear that Fridays, Saturdays, and Sundays are days where there is less activity as compared with Monday through Thursday. Thursday also has a slight spike in activity when compared with the remaining days of the week. (Level 1)

b. Dropout of User Activity

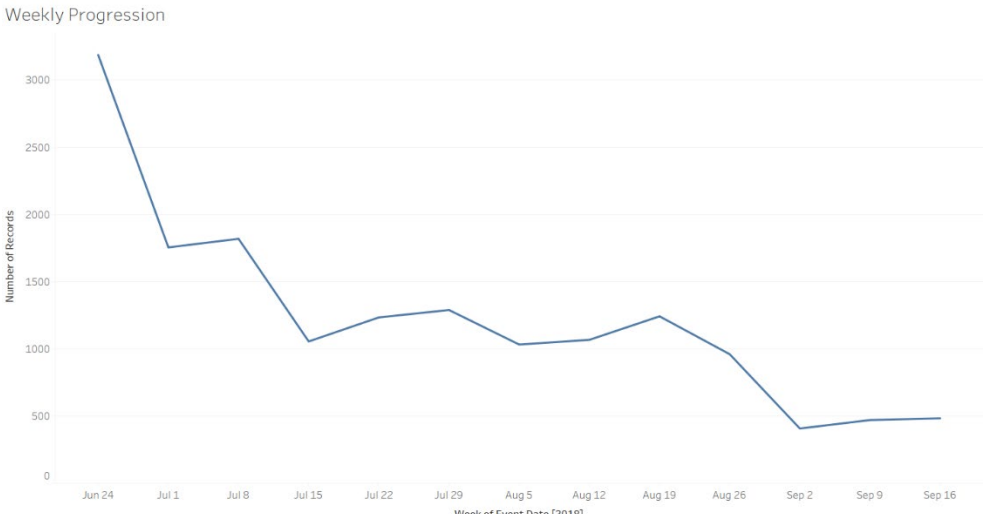

Figure 2

Another interesting insight that we found was that there were initially a lot of user activities in June, however, that dropped off drastically as the year progressed as shown in

Figure 2. This is something that the company should do investigation into to determine why the user activities have been decreasing throughout the year or why the activity was so much higher in June and July. (Level 1)

c. Distribution of User Activity

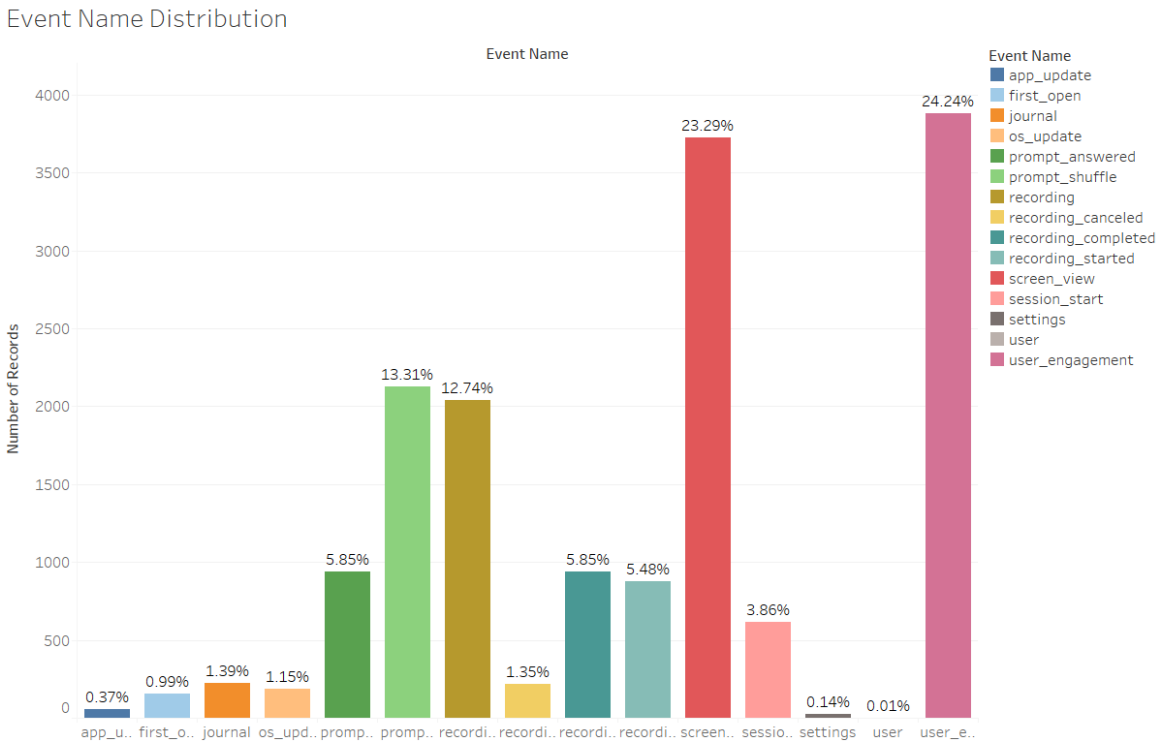

Figure 3

Another interesting insight that we have discovered is how the app is utilized by the different users. To do this, we plotted the distribution of user activity as shown in Figure 3. Figure 3 shows that around 24.24% of the activity is demonstrated by 'user_engagement', with 23.29% of 'screen_view', 13.31% consisting of 'prompt_shuffle', and 12.74% of the activity consisting of 'recording'. (Level 2)

d. Clusters of User Activity

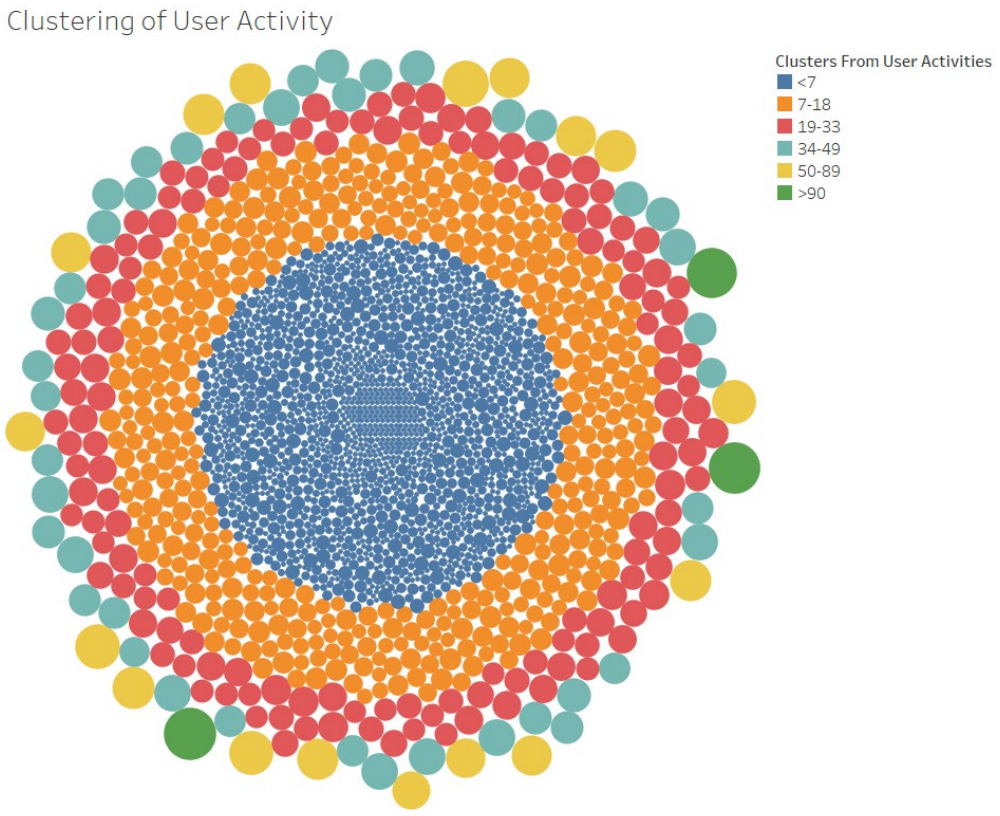

Figure 4

One important insight that we have uncovered is when clustering the users based on their user activities and event activities as shown by Figure 4. This shows that there are generally six different types of users based on their activities in this data period: users with less than seven interactions with the app, users that had between 7-18 interactions, users with 19-33 interactions, users with 34-49 interactions, users with 50-89 interactions, and users with greater than 90 interactions. The majority of the users fall into the first two clusters with less than 18 interactions as shown by the distribution of the clusters. (Level 2)

e. Continent Distribution

Another important insight is determining which localities have the most activity/users. As shown by Figure 5, 76% of the users' activity takes place in Americas, 14.64% in Europe, 5% in Oceania/Australia, and 3.9% in Asia. When considering the Americas, 94.88% of the activity takes place in here in America while 5.12% of the activity takes place in Canada. (Level 3)

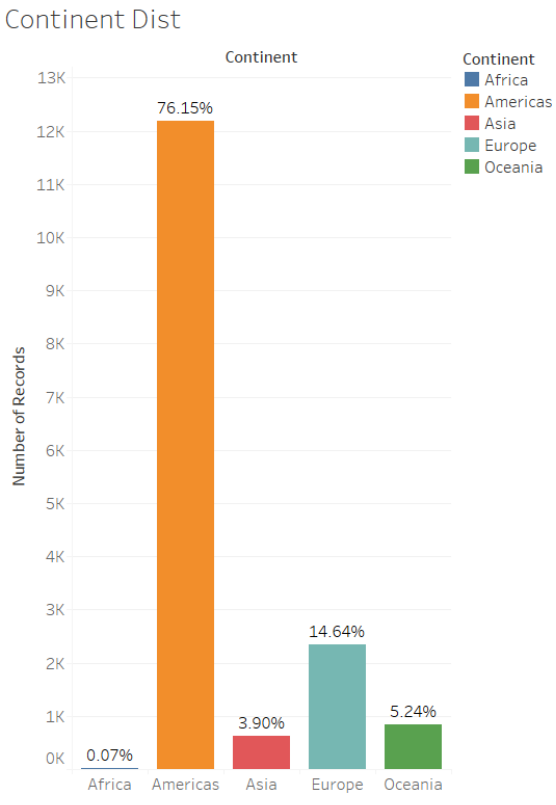

Figure 5

f. Top Cities

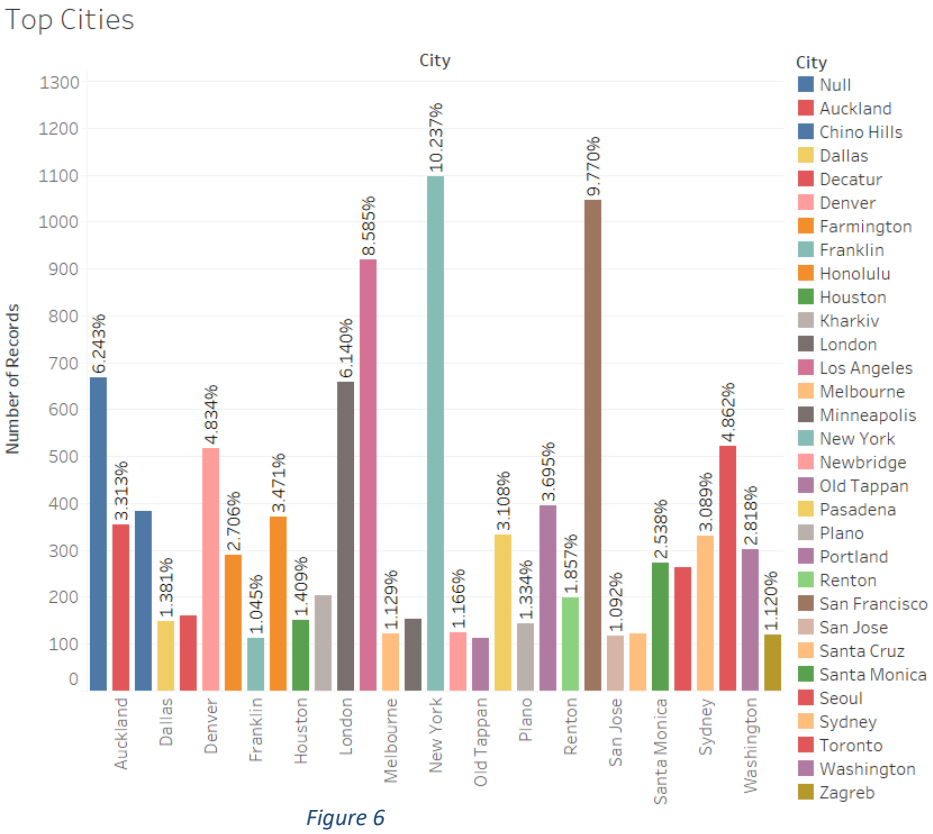

Figure 6

We wanted to determine which cities were the most popular with the app. To do this, we filtered the cities to those that had greater than 100 occurrences, and this is shown in Figure 6. This will be useful to the company when determining pilot programs, advertising campaigns, and much more geotargeting procedures. (Level 3)

g. Mobile Model Distribution

Another important factor that is important in advertising and targeting campaigns is which devices to target in Facebook advertisements. Currently, the most popular devices for the app are the iPhone X, iPhone 7, and iPhone 8 respectively as shown by Figure 7. (Level 3)

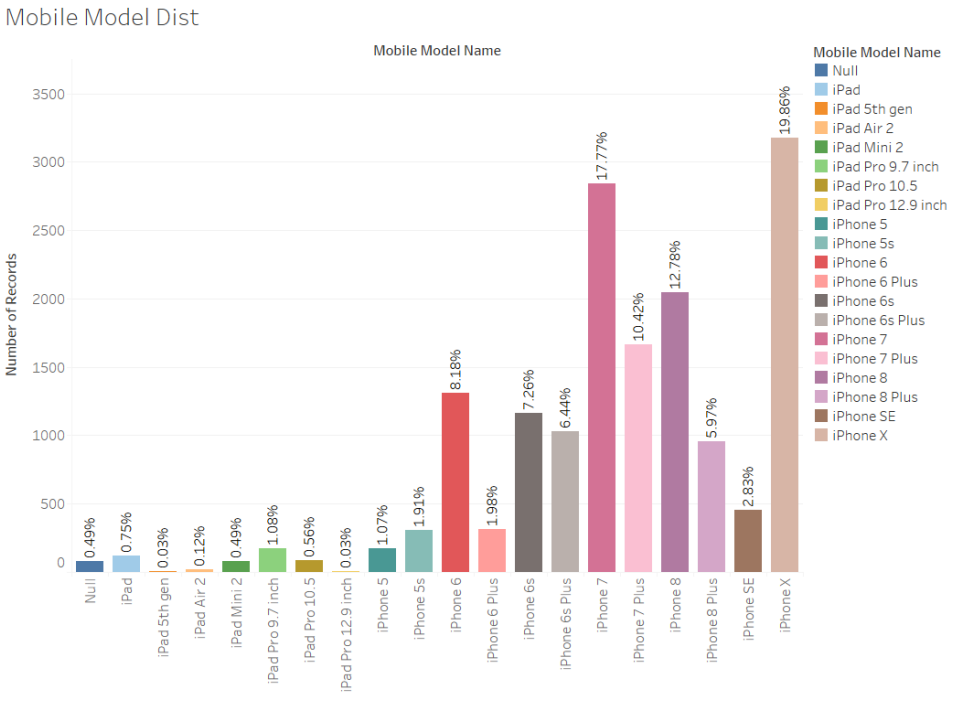

Figure 7

h. OS Version Distribution

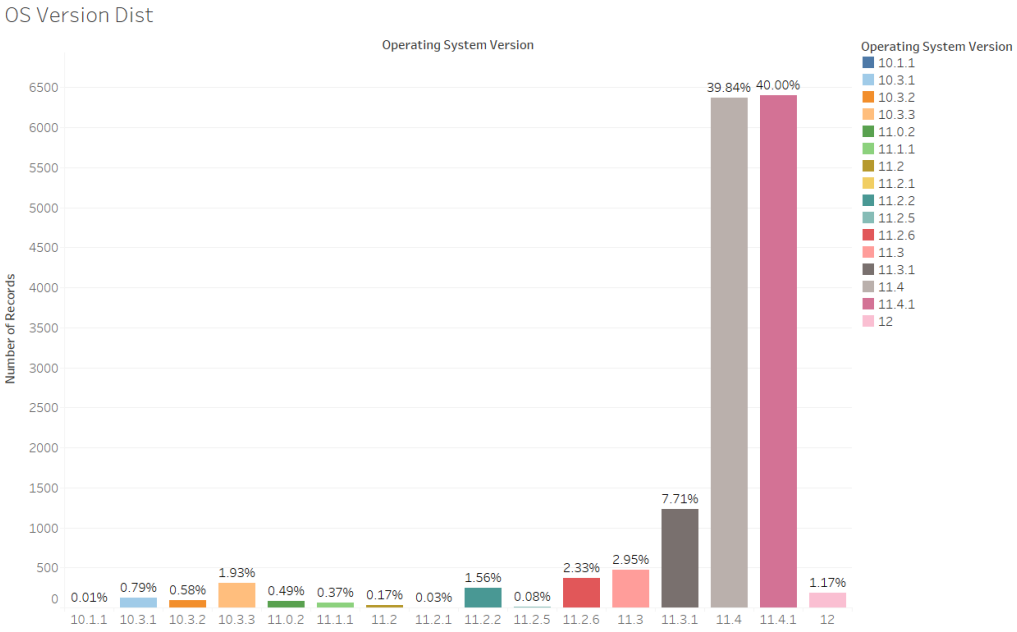

Figure 8

Another important insight for the developers of this app is how the distribution of the OS version varies with the app. Currently, most of the users are on 11.4 and 11.4.1 as shown by Figure 8. This will be important when pushing out updates to the app since legacy versions of the OS may not be able to access the various functions of the app. (Level 3)

2. Recommendations

a. App Reminders

Due to the weekday patterns of app utilization of the mobile app, we have two recommendations for user retention revolving around app reminders. Both of these recommendations are dependent on the goals of the company. First, the app could show reminders or notifications during the week since they know that is when users are most likely to use the app. Since users are already the most likely to use the app, they would appreciate the reminders, it would improve the app experience of the users, and it would improve user activity during the week. However, one downside of this is that users would be more concentrated during the weekday which would skew user activity.

The other recommendation is to send the app notifications or reminders during the weekends to even out overall user activity throughout the week. This would do the opposite effect of the previous recommendation by making user activity stable throughout the week instead of seeing spikes and valleys. This will be beneficial for the server backend to allow for more predictive

user behaviors, so the machine learning models can easily be processed by the server and pushed out to users in a more predictable manner. (Level 2)

b. Implement User Retention Strategies

This is related to the previous recommendation and from the fact that user activities are generally decreasing as time has progressed. This shows that the app needs to do a better job implementing user retention strategies or that it doesn't do a good enough job of providing value to the users. After reading about the app, it is unlikely that the second case is applicable in this case, so the company just needs to implement better user retention strategies to keep users engaged as time progresses. This could be app reminders which were highlighted in the previous recommendation, or it could be weekly insights emailed to users so that users can continue gaining insight from the app. The app could also utilize this to improve user activities that it wants to draw users to since the distribution of the activities are also skewed. (Level 2)

c. Target Advertisements During the Weekday

Since users are generally more active on the weekdays as shown by the current data, then it makes sense to infer that users are utilizing this app on the weekdays to fulfill their needs. Users generally have a greater need for this app during the weekdays as opposed to the weekends. Therefore, to improve advertising efficiency, more advertisements should be run during the weekday because those are the days where the users are most in need for this app. (Level 2)