How can we increase revenue from Catch the Pink Flamingo?

Ziqing Wang

Hi everyone, it's glad to have you here for today's discussion about how we can increase revenue from the game "Catch the pink flamingo".

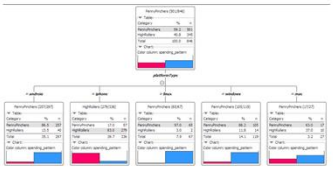
Problem Statement

How can we use the following data sets to understand options for increasing revenue from game players?

To explore the solutions, collected in-game data is the most solid truth to work with. Here, we analyzed data from two major parts, one is all about game related data including in-game advertisement click, in-game purchasing, game clicks, team information, user information and so on; the other one is the conversation information between user to user or team to team. Thus, by analyzing these data we can find out the hidden truth in them which could be valuable recommendations for increasinh the revenue.

Data Exploration Overview

1. Classify users for their in-game purchasing habit with decision tree model .



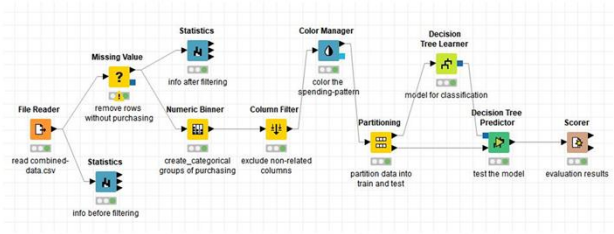
2. Cluster users into different groups depending on their game data by machine learning.

3. Visualize and analyze the relationships among users or teams to find out solutions to increase revenue.

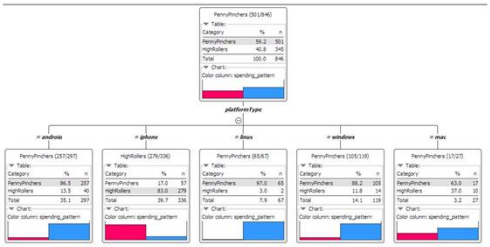
Generally, we analyzed the above data through three different methods. First, we classified the users for their in-game purchasing habit with a classification model trying to find out any plot contributing to the in-game shopping. Second, we distributed users into different groups which can help us predict user performance with a clustering model. Last, we analyzed and visualized the in-game conversations among users or teams to seek recommendations for increasing revenue.

What have we learned from classification?

Model scheme



Classification result



What makes a HighRoller vs. a PennyPincher?

Mobile users with **iPhone** contribute the most of the **HighRollers**. In the contrast, if users are using other platforms as android, linux, windows or mac, they are more likely to be a PennyPincher.

By the machine learning tool KNIME, we built the classification model to analyze the user's in-game purchasing habit. The result indicated that the mobile users tended to spend more to purchase in-game items than any other platforms. Furthermore, the iPhone users are the most significant contributors of the in-game purchasing than any others.

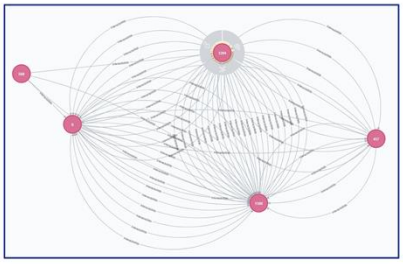
What have we learned from clustering?

- **Cluster 1**: Users are **core players** who click game much more frequently than the others.
- Cluster 2: Users show average interest for ads and spend average amount of money for in-game purchasing. Users are one group of least active players **who are the majority of the total players**.
- **Cluster 3**: Users **spend the most for in-game purchasing and click ads very frequently**.
- Cluster 4: Users play game a lot but show average interest in ads and in-game purchasing.
- Cluster 5: Users are interested in ads much more than the other players.
- Cluster 6: Users are not interested in everything.
- Cluster 7: Users spend average amount of money for in-game purchasing, but are not interested at all in ads and game play.

By the clustering model, we can distribute all the users into seven major groups which differ in all kinds of patterns. The users in group one are those so-called uber users who click game much more frequently than the others. The users in group two are the casual players who show average interest for advertisements and spend average amount of money for purchasing. However, these players are the majority of the total users for the game. The users in group three spend the most for in-game purchasing and show a strong interest to the in-game advertisement. There are also four other groups of users with less significant patterns. Therefore, we should focus more on the users from group one, two and three.

From our chat graph analysis, what further exploration should we undertake?

The graph data model here is to display the relationships between different users or different teams through their conversations (chat data) from several different sources.



Interesting question:

What is the relationship between top 10 chattiest users and top 10 chattiest teams?

Among the top 10 chattiest users, only one user is in one of the top 10 chattiest team. The other chattiest users are not in any of the top 10 chattiest teams.

At last, we analyzed the conversation data in a graph model to explore the relationship between users or teams trying to find answers for some interesting questions. For example, what is the relationship between top 10 chattiest users and top 10 chattiest teams? However, the result revealed that there is no significant relationship between the chattiest users to the chattiest teams.

Recommendations

1. Invest more in the game development on mobile ends including both android and iPhone, which contribute the most of the revenue.
2. Try to attract more iPhone users who are the major source of revenue in mobile ends.
3. Improve mission rewards, down-regulate mission difficulty to attract more casual players because most of the users are casual players. Thus, the company should take the casual players as the major target to grow the popularity.
4. Improve the quality of in-game ads to attract more clicks because the most spending users click ads very frequently. Better ads can arouse more of their interests so as to increase revenue.

Finally, based on our analysis with the data, in order to increase the revenue we recommend that:
#1. The company could invest more in the game development on mobile ends including both android and iPhone, which contribute the most of the revenue.
#2. Try to attract more iPhone users who are the major source of revenue in mobile ends.
#3. Improve mission rewards, down-regulate mission difficulty to attract more casual players because most of the users are casual players. Thus, the company should take the casual players as the major target to grow the popularity.
#4. Improve the quality of in-game ads to attract more clicks because the most spending users click ads very frequently. Better ads can arouse more of their interests so as to increase revenue.

That’s all for my report of the data analysis. Thank you!