In-Depth Analysis of Fortnite Battle Royale Subreddit

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1 Introduction

This project aims to conduct an in-depth analysis of the Fortnite Battle Royale subreddit to gain valuable insights for improving Fortnite's marketing strategy and community engagement efforts. By leveraging advanced techniques such as network analysis, topic modeling, sentiment analysis, and data visualization, we aim to identify influential community members, uncover popular topics and trends, and gauge sentiment trends related to skins, cosmetic items, new seasons, and map changes within the Fortnite community.

The insights derived from this analysis can be instrumental in informing Fortnite's marketing campaigns, content creation, and community management strategies across various platforms, including Reddit, Twitch, and YouTube. By understanding the community's preferences, concerns, and engagement patterns, Fortnite can tailor its approach to resonate better with its player base, foster stronger connections, and ultimately drive revenue growth and user retention.

2 Methodology

2.1 Data Collection and Preprocessing

The analysis is based on six months of data (June to December 2023) collected from the Fortnite Battle Royale subreddit, encompassing both submissions and comments. To ensure data quality, irrelevant or deleted content was filtered out during the preprocessing stage using Python libraries such as Pandas and NLTK.

2.2 Topic Modeling and Community Detection

Latent Dirichlet Allocation (LDA) topic modeling, a widely-used technique for discovering abstract topics within a collection of documents, was performed on the cleaned submission titles using the Gensim library. The LDA model revealed the following key topics:

- Topic 0: Skins and Cosmetic Items

- Topic 1: Gameplay and Game Modes

- Topic 2: Fortnite Seasons and Map Changes

- Topic 3: Player Support and Account Issues

- Topic 4: Bugs, Glitches, and In-Game Issues

Given their relevance to Fortnite's revenue and user engagement, Topic 0 (Skins and Cosmetic Items) and Topic 2 (Fortnite Seasons and Map Changes) were selected for further analysis. Community detection was then performed on submissions related to these topics using the Louvain algorithm on bipartite graphs created with the NetworkX library. This step helped identify distinct communities within the subreddit, enabling a more granular analysis of the discussions and interactions surrounding these topics.

2.3 Community Analysis

For each of the selected topics, three communities were analyzed, comparing their structure, top words, influential members, and sentiment before and after a three-month period. The analysis included the following key components:

- Identifying top words used in post titles to gauge popular topics and trends using word frequency analysis.

- Calculating centrality measures, such as betweenness and degree centrality, to identify influential community members.

- Analyzing posts and comments of influential members to understand their engagement levels and sentiment towards the game.

- Performing sentiment analysis on comments using the state-of-the-art DistilRoBERTa model from the Hugging Face Transformers library, enabling a deeper understanding of the community's sentiment towards Fortnite and its updates.

- Visualizing community networks, word frequencies, and sentiment scores using powerful data visualization libraries like NetworkX, Matplotlib, and Seaborn, providing a clear and intuitive representation of the findings.

By combining these various analysis techniques, we aimed to gain a comprehensive understanding of the Fortnite community's dynamics, preferences, and sentiments, enabling data-driven decision-making for Fortnite's marketing and community engagement strategies.

2.4   Key Findings in Community Analysis

Topic 2: Fortnite Seasons and Map Changes, Community 2015

The analysis of Community 2015, focused on the topic of "Fortnite Seasons and Map Changes," revealed several key insights. First, there was a surge in conversations related to new seasons, chapters, and map updates within the community. The network visualization (Figure 1) highlighted a dense, interconnected core group, with influential members like Affectionate_Kick705 and ConsequenceApart4391 having high influencer scores based on their centrality and engagement levels.

Sentiment analysis (Figure 2) indicated both positive and negative sentiment shifts among these influential members, providing opportunities for Fortnite to address critic concerns and gather valuable feedback for future updates and improvements.

Furthermore, the word frequency analysis (Figure 3) showed a significant increase in the usage of words like "season," "chapter," "new," "map," "battle," and "think" after the three-month period. This finding suggests heightened discussions around new game seasons, chapters, map updates, and changes to gameplay mechanics, reflecting the community's keen interest in these areas.

3   Recommendations & Potential Impact

Based on the findings of this analysis, we propose the following recommendations for Fortnite's marketing and community engagement strategies:

- Leverage influential community members as ambassadors or critics for targeted marketing campaigns and product development initiatives. Engaging with these influential voices can help shape narratives, build trust, and foster stronger connections with the broader community.

- Incorporate popular keywords like "season," "chapter," and "new" into promotional materials, in-game events, and content creation efforts. Aligning with the community's interests and language can enhance resonance and engagement.

- Foster relationships with influential community members and facilitate open communication channels for gathering feedback. This two-way dialogue can provide valuable insights for product development, community management, and addressing concerns proactively.

- Prioritize updates and improvements that align with community preferences, such as new map designs, gameplay mechanics, or seasonal content. By delivering content that resonates with the community's interests, Fortnite can drive higher engagement and satisfaction levels.

By implementing these recommendations, Fortnite can strengthen its connection with its dedicated player base, enhance user experiences, and ultimately drive sustainable revenue growth and long-term success in the highly competitive gaming industry.

Fortnite has an impressive user base, with over 550 million registered users and 221 million monthly active users (MAUs). Assuming a conservative estimate of a 1% increase in Average Revenue Per User (ARPU) from $7 to $7.07 per month across MAUs, and a 1% reactivation of inactive users, the potential change in annual revenue could be a staggering $434.2 million (Detailed Calculation).
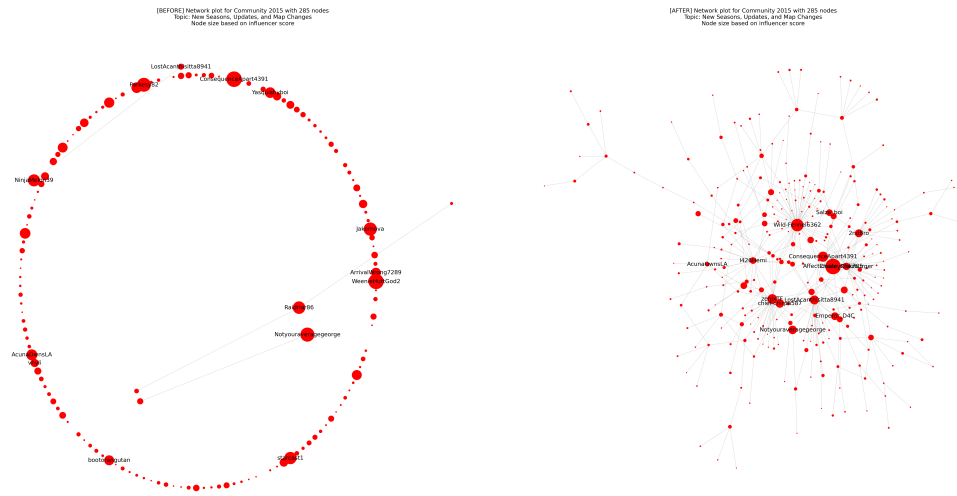
4 Appendix

4.1 Visualizations

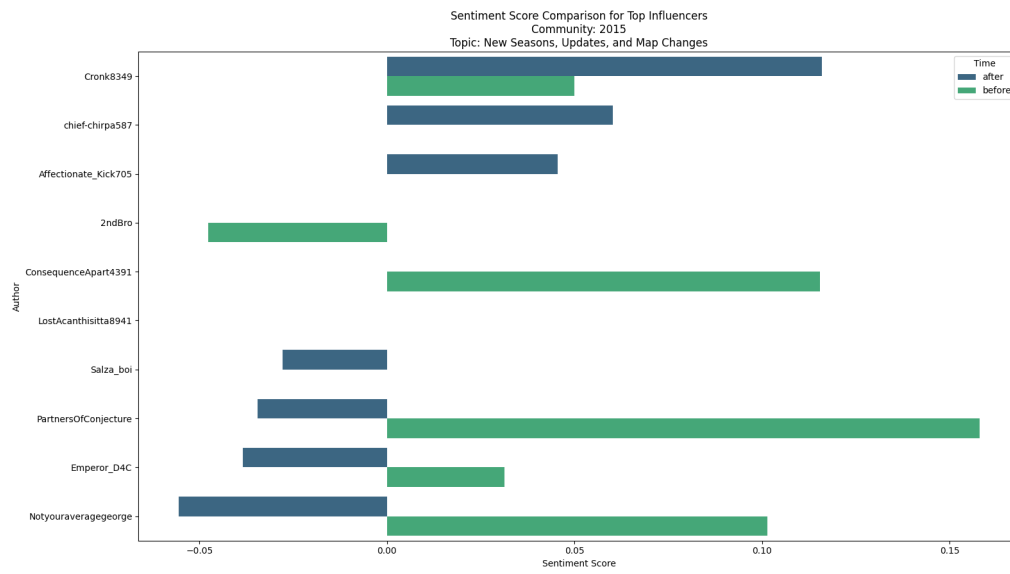Figure 1: Network visualization for Community 2015 before and after the 3-month period.

Figure 2: Sentiment score comparison for top influencers in Community 2015.
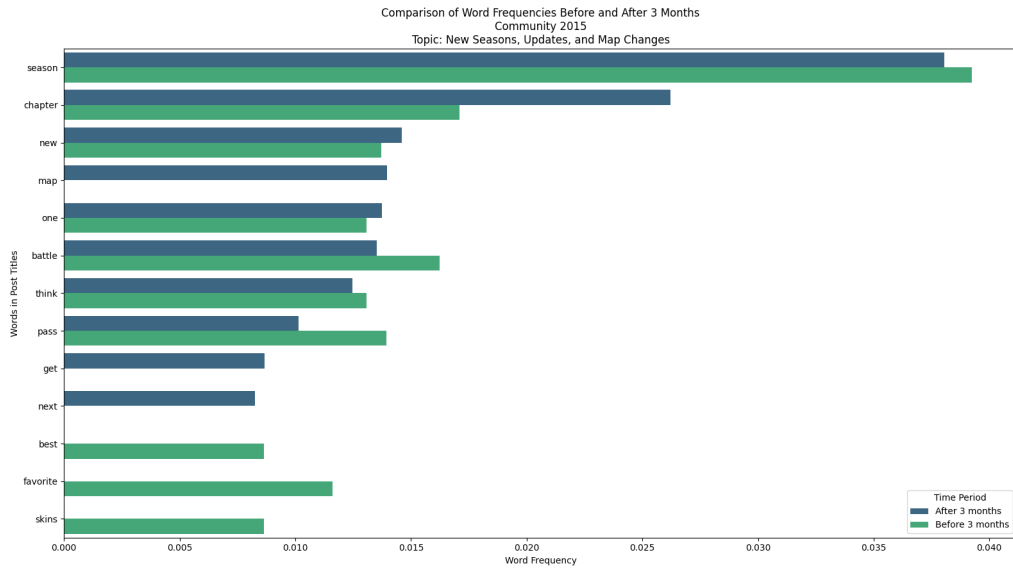
Figure 3: Comparison of word frequencies before and after 3 months for Community 2015.
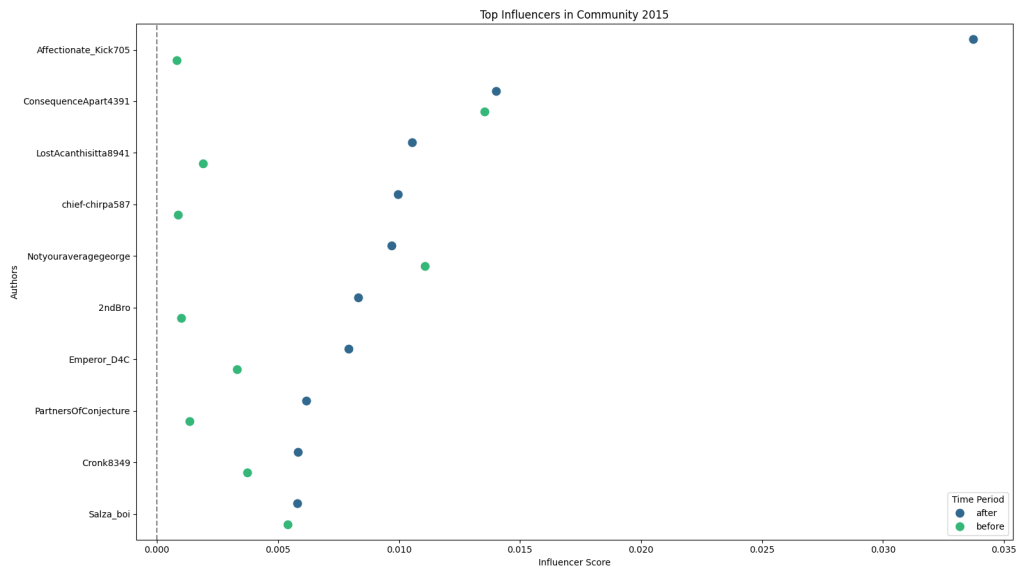

Figure 4: Top influencers in Community 2015 based on centrality measures.

4.2   Potential Revenue Impact Calculation

Fortnite Statistics:

- 550 million registered users

- 221 million monthly active users (MAUs)

- Average Revenue Per User (ARPU) = \$7 per month

Assumptions:

- 1% increase in ARPU from \$7 to \$7.07 per month across MAUs

- 1% reactivation of inactive users

Potential Revenue Impact:

1% increase in ARPU for 221 million MAUs:

$$221 \text{ million MAUs} \times (\$7.07 - \$7.00) \times 12 \text{ months} = \$154.4 \text{ million}$$

1% reactivation of 330 million inactive users:

$$330 \text{ million inactive users} \times 1\% \times \$7.07 \times 12 \text{ months} = \$279.8 \text{ million}$$

$$\text{Total potential change in annual revenue} = \$154.4 \text{ million} + \$279.8 \text{ million}$$
$$= \$434.2 \text{ million}$$