ANALYSING USER SENTIMENT SHIFTS

A Knowledge Mining Approach for Developers & Designers

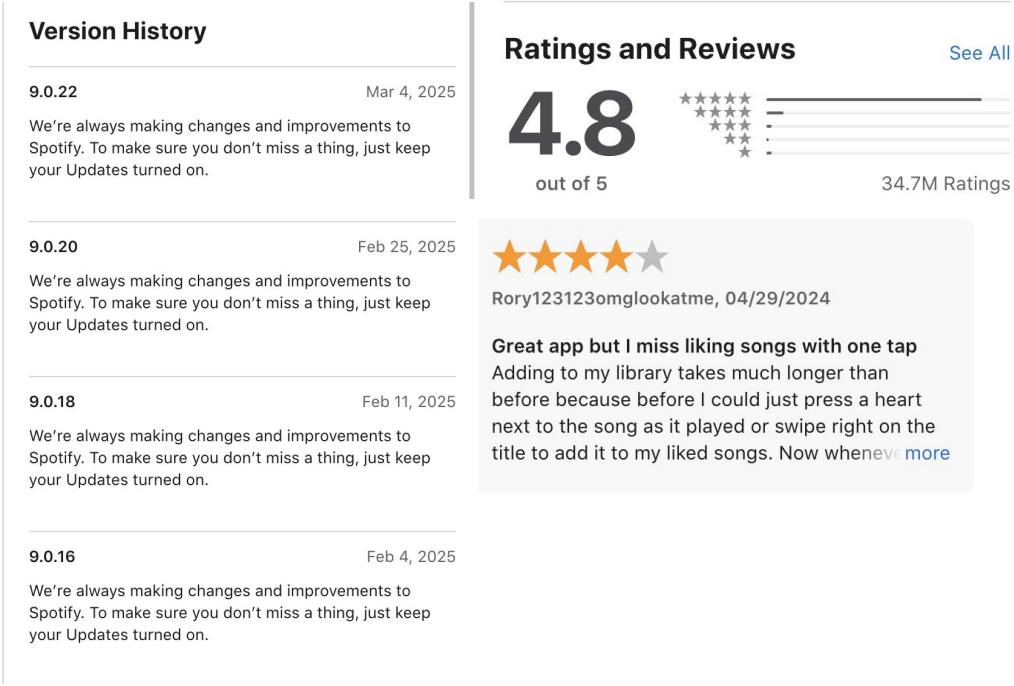
Oliver Myers | 03-04-2025

BACKGROUND:

Developers and designers use app reviews to understand user sentiment, including positive feedback, complaints, and feature requests.

After an update, users often resist change and leave more negative reviews, even if the update improves the app. This can make it hard to differentiate temporary backlash from real issues.

By analyzing sentiment over time, teams can focus on meaningful trends rather than short-term reactions, helping them make better design and development decisions.



RESEARCH STATEMENT

Research Statement:

Understanding user sentiment over time is crucial for app success. User reviews contain valuable insights, but early post-update negativity can distort real usability issues. This project applies knowledge mining methods to analyze app reviews, investigating how the timing of user reviews after an app update (independent variable) affects the extraction of key pain points, usability issues, and feature requests (dependent variable).

Knowledge Mining Methods Used:

1. **Text Processing & NLP:** Extract keywords and themes from unstructured review text.
2. **Sentiment Analysis:** Classify user feedback into positive, negative, or neutral categories.
3. **Time-Based Aggregation:** Apply time decay functions to reduce the weight of early post-update reviews.
4. **Pattern Recognition:** Identify recurring usability issues and feature requests across multiple app versions.

Enter App name to analyze user comments

Spotify

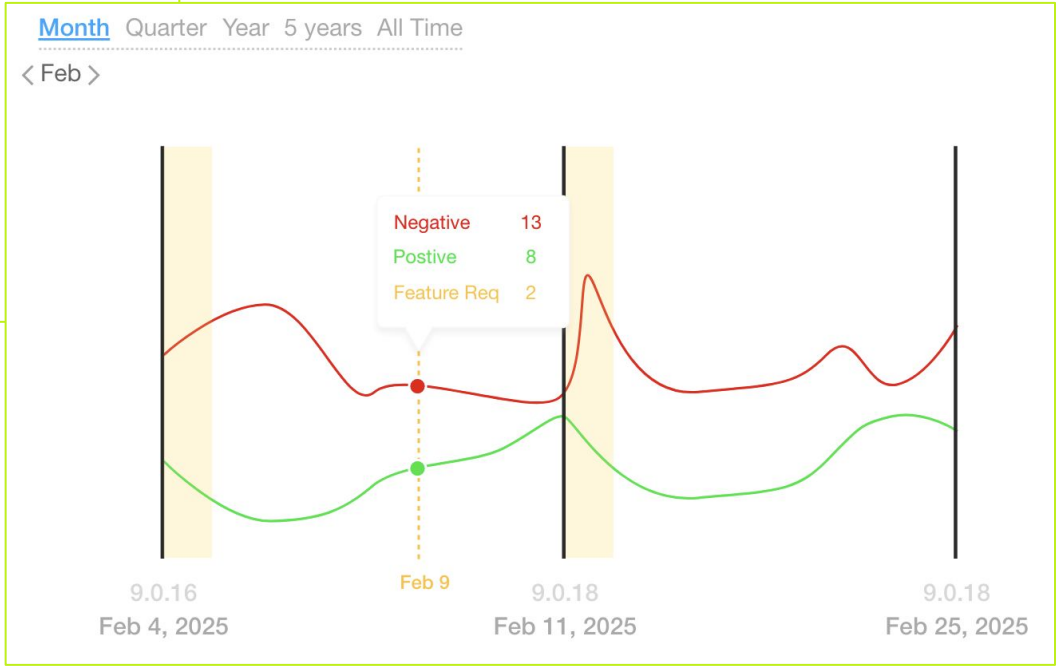
Search

Spotify - Music and Podcasts 12+
Discover the latest songs

Is this correct?

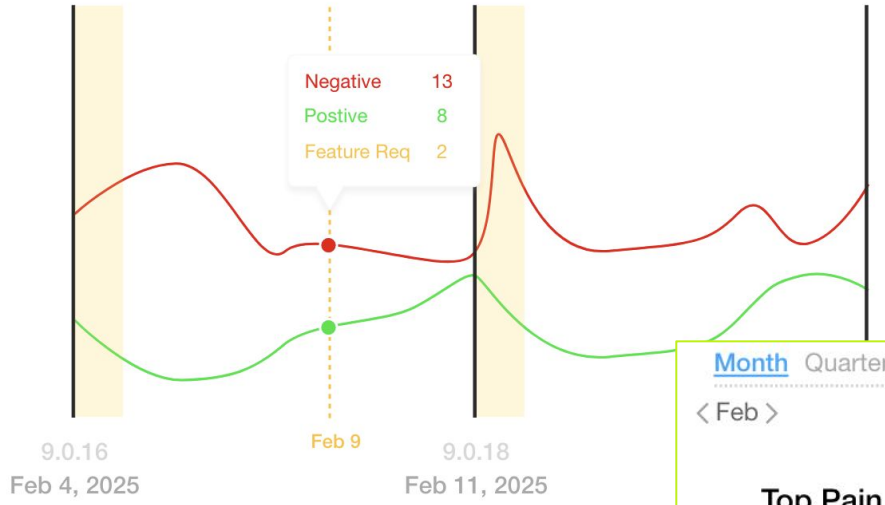
Yes

No



Month Quarter Year 5 years All Time

< Feb >



Month Quarter Year 5 years All Time

< Feb >

Top Pain Points

- Song Issues (4 reviews)
- Ads too frequent (3 reviews)

Top App Praise

- Great recommendations (10 reviews)
- Massive library (5 reviews)

Useability Issues

- Confusing UI (2 reviews)
- Slow app (1 reviews)

Top Feature Requests

- Lyrics for all songs (2 reviews)
- More equalizer settings (1 reviews)

DATA SOURCES / PROCESSING & NLP

A.

Apple App store API

(reviews, Version history)

B.

Sentiment analysis to classify positive & negative reviews

(Pre-trained - BERT)

C.

Keyword extraction for usability complaints, feature requests

(Trained)

D.

Aggregation of sentiment scores per app update period

E.

Weighted comments via data

THANKS FOR LISTENING