Applying Sentiment Analysis to Video Game Reviews

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Agenda

Introduction

Platform & Pipeline Design

Dashboard Demonstration

Insights

Summary & Conclusion

Driving Question

How can we use the information available in online reviews to understand and improve how a product is received by the public?

Why video games?

- Growing industry & passionate consumer base

- Digital platforms deliver directly to game owners

- Fan response impacts game development

Platform & Pipeline Design
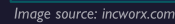
About Steam

75% global market share

$37.6 billion annual revenue

132 million monthly active users

USER REVIEWS

- **Account must have purchased game to leave a review**

- **No star or number ratings**

- **Developers can (and do) respond to reviews**

- **Other users may vote a review helpful or not helpful**

Pipeline Design

The ETL Process

Image source: incworx.com

EXTRACT

Scrape html review data from steampowered.com

TRANSFORM

Clean and process data

Apply sentiment analysis

LOAD

Save processed data in MongoDB

Convert to CSV

ANALYZE

Import data to Tableau for further exploration

Dashboard Demonstration

The Games

STARDEW VALLEY

RECENT REVIEWS:	Overwhelmingly Positive (7,966)
ALL REVIEWS:	Overwhelmingly Positive (553,827)
RELEASE DATE:	Feb 26, 2016

CYBERPUNK 2077

RECENT REVIEWS:	Very Positive (9,250)
ALL REVIEWS:	Very Positive (634,724) *
RELEASE DATE:	Dec 9, 2020

STARFIELD

RECENT REVIEWS:	Mixed (1,780)
ALL REVIEWS:	Mixed (94,487)
RELEASE DATE:	Sep 5, 2023

Dashboard Demonstration

Tableau Public Link

Insights & Conclusions

Sentiments Over Time

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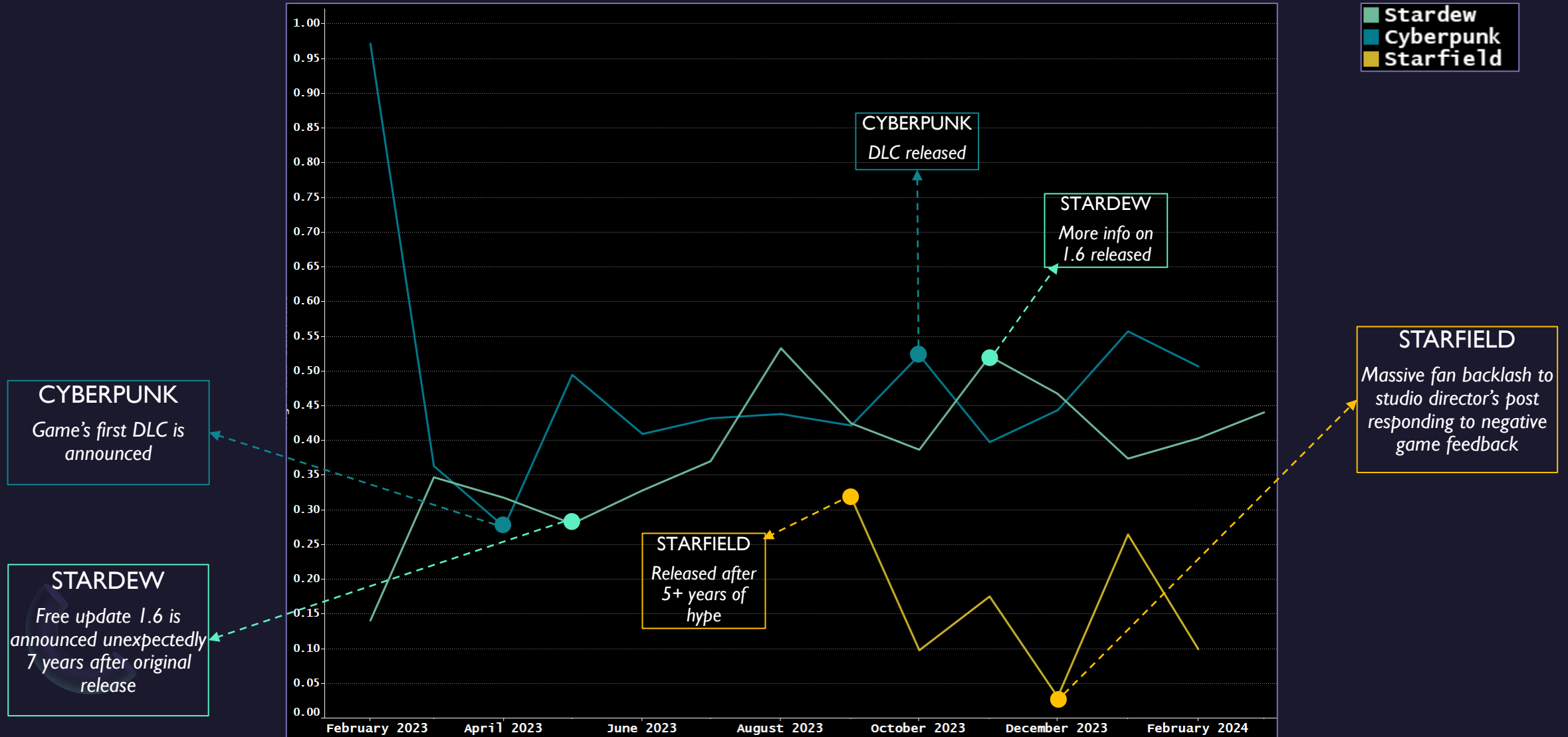
Further Analysis

EXAMPLE QUERIES

Most recent reviews containing *crash*

> was having an amazing time until patch now i cant even run the game crashes the m
> w game tried a fresh install no change doesnt matter what graphics settings i use

> there are still bugs including random unequipping of cyberware clothing always che
> barks and crashes to desktop these were all minor for me but still very much prese

> i do not want to give a onesided review but let me emphasize they these points are
> s some animations of finishers were missing or lacking some bugs and even a crash

Cyberpunk

Top user-voted positive reviews about *dlc*

> you have redeemed yourselves cd projekt red
> amazing game and an even better dlc expansion

> ideo games ever manage to achieve it took a long long time for this game
> he phantom liberty dlc cyberpunk finally manages to live up to the hype

> get the game and the dlc its one of those games that y
> because its so good i want to take my time

Cyberpunk

Highly engaged reviews by sentiment

> Positive: 60 reviews
> Negative: 24 reviews

Starfield

Average playtime for highest weighted reviews

> 551.79 hours

Stardew

Average user votes by developer response

> Developer Response: 667.52
> No Developer Response: 136.03

Starfield

Summary

- Technology has created the expectation of an ongoing contract between producer and consumer to provide a high-quality user experience

- Reviews are crucial components of the feedback loop

- Consumer responses can and should inform business plans and product timelines

Appendix

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Thank You

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