Context

According to Nintendo´s president Shuntaro Furukawa, Nintendo is starting to explore current interests and its exploration of new technologies (Melnick, 2020), and one of those technologies is augmented reality.

Nintendo is well known for its Mario Bros. videogames and different consoles that they offer, namely, Nintendo Switch and Nintendo 3DS/2DS but they haven't ventured to mobile devices.

For our Natural Language Processing assignment, we designed a survey to understand consumer behavior and test our business success: "Are you willing to download the new Mario Bros. Augmented Reality video game for mobile devices?".

We designed a 5 question survey to collect data from a representative group of our potential market consisting of masters students between the ages of 20 to 30 years old.

Survey Questions

Team 10 Survey - Text Analytics DAT5317

1. Do you like playing video games? If you like playing video games or if you don't like playing video games, please state your reason why.

2. If you like playing video games, what kind of games do you play? If you don't like playing video games, what do you like to do (e.g RPG, adventure, strategy) ?

3. Which platforms do you play your game and why do you play on that specific platforms (e.g PS4, Xbob, mobile)?

4. List all Mario games that you know.

5. If there is a new "SuperMario 2020" game, would you download and play the game?

From the data collected in this study, we expect to understand the current trends between gamers and non-gamers, detect any potential market niche and predict if a person is willing to download and play the Nintendo Marios Bros. videogame on their mobile devices.

Executive Summary

After running our study and collecting the necessary data through NLP, we used the data to run a text analysis using different frameworks namely: TF-IDF, Sentiment Analysis, Word clouds with Sentiments, and LDA. We also created a predictive model based on the Supervised Machine Learning method called Naive Bayes which will predict our business success based on the words that our data contains.

The main insight from our text analysis is that our target market is not interested in downloading and playing a new Super Mario Bros. for their mobile devices even with Augmented Reality technology.

We conclude this by analyzing the different graphic outputs from the frameworks that we used where we arrived with the same conclusion: negative reception towards the new Nintendo strategy to reach new markets.

Business Insight from R Graphics

1. **Sentiment Analysis (Bing +/-, NRC emotions, and Afinn -5/+5)**

- Question 1: The majority of our respondents were women and stated that they don't play video games since they are a waste of time, hard to play and boring. We can make use of this insight and dig deeper to understand what features can be appealing to women that will make a videogame more engaging to them.

- As a general insight, respondents will consider downloading the new game if it's free. To translate this into an opportunity, we can make use of a freemium strategy in order to generate traction and get early adopters. The games with high revenue will subsidize the new Mario Augment Reality videogame during the first stage of the release, this will allow Nintendo to measure the success of the game and decide if they release the premium version of the game or not.

2. Word Frequency

- In question 2, we can identify our non-gamer survey responder's behavior. Most of them like to play sports, read books or watch movies. As we want to launch a game, we can use this information to target the non-gamer users to convert them into a future gamer. Also we can take advantage of the sporty users and design a marketing strategy to be displayed during the Tokyo Olympic Games.

- In question 3, it showcases the traditional platforms that gamers use but none of them mention any new platform such as Oculus the Virtual Reality platform. This could be a chance for Nintendo to explore the VR market.

3. N-grams

From this framework, our most insightful takeaways are for:

- Question 2, the non-gamers prefer sport and leisure activities. From this, we can say that if Nintendo wants to target this group it's better to include in their video game design features that foment physical activity and promotes group interactions. For the moment, Nintendo does not have in their portfolio any Mario videogames that involve real physical activities, they can take advantage of their existing games and release new versions of their multiplayer titles like Mario Party, Mario Olympics or Mario Kart.

- In Question 3, the people that actually play videogames are "mature" or "professional" gamers since the Microsoft Xbox it's known for titles that are for more skillful gamers.
  Also what is important to mention is that all Super Mario Bros titles are exclusive for Nintendo consoles, for this reason, Nintendo should raise more brand awareness among our target market. Even more important, Mobile Devices are

popular among casual gamers and Nintendo does not have any titles available on this platform, so this is a potential advantage that Nintendo can explore.

4. Bayes Prediction Model

For our business success, 1 is they will download and play the game and 0 is they won't play the game. Out of 40 responders, 20 said yes and 20 said no so it is divided into 50:50. For our prediction model, we want to predict which responder would translate into a business success in the future. We split the training and testing to 75% and 25%. Our model predicted 7/10 which means it has a 70% accuracy.

Recommendations

Most of the respondents don't play or own the game, not a lot knows Mario games and if they know them they don't own it and only play with their friends in multiplayer games

More awareness for Nintendo Switch where they can exclusively play Mario Games

Feedback for the future: add more survey respondents to get a better sense of the market's accurate response (university and masters students, and young professionals)

We propose the following recommendations:
- To increase general acceptance in our target market we suggest:
    - Partner with universities and business schools for their own pop-up video game lounges (e.g. Tech week, video game club week).
    - Students can buy one of a kind Nintendo switch items there and will receive a coupon for Nintendo sellers (e.g. Target).
    - The same goes for break room lounges in offices of Google, Facebook, Twitter, etc. (Exclusive Nintendo games provided for use by employees).
- From our insights, we detect a strong trend related to sport and leisure activities instead of video games. Nintendo can take this information and use it to create a new video game that combines their famous character Mario and sports activities.
- Run another study with a bigger target market because the surveyed market is based on a sample smaller than 60 people.

References:
- https://www.highsnobiety.com/p/nintendo-airport-lounges/?format=amp
- https://vrscout.com/news/nintendo-president-says-company-exploring-ar/

- https://www.nintendolife.com/news/2017/06/video_man_plays_super_mario_bros_in_augmented_reality_puzzles_bystanders
- https://psycnet.apa.org/record/2019-28366-001
- https://www.youtube.com/watch?time_continue=109&v=QN95nNDtxjo&feature=emb_title

Bibliography:

Melnick, K. (2020). Nintendo President Says The Company Is Exploring New Ways To Use AR - VRScout. Retrieved 21 February 2020, from https://vrscout.com/news/nintendo-president-says-company-exploring-ar/

Appendix

1. Question 1:
   - Summary: women respondents stated they don't and won't likely play video games because they are a waste of time, boring and only for guys who like to kill time
   a. Frequency graph (bing): the majority of the respondents are women and stated that they haven't played and won't play video games in the near future because they think video games are a waste of time, boring and only for guys who are killing time
   b. NRC: the most common emotions shown are negative, disgust and anticipation on the time wasted
   c. Afinn: boring and kills time (-3), fun (4)
   d. Frequency:

2. Question 2:
   - Summary: respondents who are video game players already have preferred games but for non-video game players prefer active sports or do leisure activities
   a. Frequency graph (bing): respondents that actually play video games have preferences and favored games already
   b. NRC: those who don't play video games spend their time playing sports like basketball, swimming and doing leisure activities (e.g. reading)
   c. Afinn: crap (-3) and fun (4)
   d. Frequency:

3. Question 3:

- Summary: the majority of the respondents prefer to play on their mobile phones regardless of what game and video game players have preferred consoles (e.g. Xbox, PC, and PS4)
  a. Frequency graph (bing): favored consoles where they play are Xbox, PC, and PS4
  b. NRC: mobile is the preferred platform to play any game regardless
  c. Afinn: easy (1) and super, love (4)
  d. Frequency:

4. Question 4:
  - Summary: Super Mario Brothers is the most popular game for all the respondents followed closely by Super Smash
  a. Frequency graph (bing): Super Mario Brothers is the most popular game that respondents know and the second favorite is Super Smash
  b. NRC: Super Smash Brothers is their preferred game, next is Super Mario
  c. Afinn: worry and mad (-3) and super (4)
  d. Frequency:

5. Question 5:
  - Summary: respondents will consider downloading a new game if it's free, interesting, suitable for their schedule and has a similar interface as Super Mario
  a. Frequency graph (bing): positive answers to downloading the game if it's free, interesting and has a similar interface as Super Mario
  b. NRC: They will play it if it's free, suitable to their schedule and an interesting game
  c. Afinn: no (-1) and super (3)
  d. Frequency:

Business Context
  - Nintendo are planning to launch a new Mario Game

- They would like to know their customer behaviour of their population and if they are aware of Mario as a brand
- Conducted a survey with 40 correspondents with these five questions.