National College of Ireland

< Bsc Honours in Computing

< Data Analysis>>

<Academic Year i.e. 2020/2021>

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< Does the introduction of microtransactions in games decrease user enjoyment >

Technical Report

Contents

Executive Summary

This report will be on the introduction of microtransactions into video games, the types of microtransactions and how the users respond to it. To do this I will be examining a few select games to see how they use microtransactions and seeing how users respond through both social media and video game rating websites such as Metacritic or esrb to see if there is any correlation between them.

1.0 Introduction

1.1. Background

When video games were first created the game was made fully finished and that is what the consumer bought, as time has progressed many video game studios and creators started adding new parts to game to further enhance the story or to add an extra bit of fun to the game. As more and more games started to use this practise some studios and games started to leave bits of the game out and charge extra money as DLC (downloadable content) to play these parts. These parts of the game unlike the extra bits added on later like they used to, were key parts to the games story and with their exclusion the story of the game was incomplete and lacking. This practise has further been expanded as games can charge users to pay for in game currency to use to buy things like extra lives, items or in very rare instances the ability to change how your character looks in the game. The most extreme example of this is loot boxes where consumers pay money for a chance to get an item they were looking for and must pay more money if they don't get the item. As these practises become more and more common many consumers are starting to go back to earlier games that are finished or start playing independently developed games away from video game companies that use these practises. I have also started to ignore games for the same reason, and I want to see if this is becoming a common thing. As more games are created without this method, they seem to become popular faster than most games. Some notable games that have Microtransactions in them or were introduced later are PUBG, The FIFA franchise and the SIMS franchise. I will be investigating these games and other games that use similar practices in this project.

1.2. Aims

The objective of this project is to investigate whether the inclusion of microtransactions in games has caused users(gamers) to lose interest in the game. In recent years this type of practice in the video game industry has become more and more common while the general reaction of this practice seems to be mostly negative. I am investigating this as I have seen this happen in many games and want to provide a concrete example of this with and end goal of showing that while companies make a bit of extra money, they inevitably lose their customers as they grow increasingly more frustrated with the lengths the practice takes. I will be investigating games that have these kinds of microtransactions and comparing how users rate the game on social media and on websites that rate games. To investigate this idea, I will be finding the relevant data from game rating websites, game shops like steam and social media to see how users react to having these kinds of microtransactions in games. As an example, I will be looking into notable games like PUBG, the FIFA franchise and the sims franchise as these games all introduced microtransactions that users found questionable.

1.3. Technology

2.0 In order to get all of the information I will need for this project I will be searching for games that contain these kinds of microtransactions and comparing how they are rated by different sites and social media. I will also be looking for datasets and other sources of information that can be gathered and transferred to my chosen analysis software. Once I have got all of the data, I plan on using the RStudio software to bring all of the data together, process the data and begin graphing it to see how the data looks. After seeing how the data looks in the graphs that I have created, I will then use RStudio to perform a number of tests that will allow me to more accurately analyse that data.

2.1. Structure

In the following report I will be going over my data and how I went about getting the data to use. I will also be discussing the data that I got and how I used it to get the information that I used for this project. Next, I will be going over the methods that I used to get the information that I got to use to confirm my results. Then I will go over how I went about analysing the information that I got and confirming the information. Finally, I will be going over my results and the conclusions of the project as a whole to see if my hypothesis was correct. At the end of the report, I have put my initial project proposal, my project plan and the reflective journals that I have been making throughout the year.

3.0 Data

Tools used to get information: RStudio, websites, databases, social media.
To start with I searched the web for any relevant datasets or information that I could use for this project. After searching for some time, I found some datasets from the website "Kaggle", this site allowed me to get most of my information that I used for this project. After getting the information, I brought the data into RStudio and began analyzing the data. I used a number of tests and processes to process the data into useable information that I could then use to check if my hypothesis was correct. During this process I created graphs and plots to visually display the data so that it was easier to understand and created a number of correlation tests to check if there was any correlation between the variables of my data.

Stats:
Game with
most negative rating: 487076 -PUBG
Most positive rating: 2644404 -counterstrike
min negative rating:0
min positive rating:0

FIFA pack prices:
100 points -€0.99
250 points -€2.49
500 points- €4.99
1050 points – €9.99
12000 points -€99.99
Ultimate pack -2,500points odds:2.4% 90+

Gold – 100 points odds 3.6% 83+
Premium gold – 150 points odds 4.9% 84%

highest rating FIFA: 94

lowest FIFA: 45

Best chance at getting a good player is the ultimate pack at 2,500 or about €25 at 2.4%.
FIFA base -€70
In FIFA players can spend €25 to have a 2.4% chance at getting a character that they want, if they don't get it, they have to spend more till they get it.

PUBG – base price €30 – battle pass €10

Allows for exclusive cosmetics that have to be earned through play, and a new map that you have to wait to play on if you do not pay for the battle pass. Better than FIFA but still locks content behind additional price.

Difference between dlc and microtransactions: many different ways of thinking but most accepted difference is that dlc is something you can purchase in addition to the base game while microtransactions are a part of the monetisation of the game used to purchase things already in the game.

The main hated thing about microtransactions is that they stack up, unlike in dlc once you buy the dlc you have the thing that was unlocked but with games with microtransactions, you have to keep buying the transaction to make progress.

4.0 Methodology

To begin with I searched a number of websites and database sites to gather the data that I used in the project, once I got the data, I used RStudio to bring the data together and began prepossessing the data. To do this I created a boxplot graph that displayed the data in the datasets that I will be using, this allowed me to get a better understanding of what was in the data that I was using and allowed me to make the best decision on what tests that I needed to perform. Once I got an idea of what data I had in each of the datasets and what information they contained, I then began creating a number of graphs that allowed me to visually display the data and make it easier to understand what the data is telling me. After this I began to perform a number of correlation tests to see if there was any correlation between variables in the data that will give me a better idea of what information is related to each other and from there I can start comparing games and how they are reviewed. After getting these correlations together I can then check if the games contain microtransactions by checking on the data that I got from an online source.

For my case studies I looked at the games FIFA and PUBG. In my tests to analyse these games I used similar approaches to what I used for the general data in the rest of the project. Using these tests I found that the two games use two different types of microtransactions, the method used by PUBG is the battle pass system, this system allows users to buy a "battle pass" that allows them to get more cosmetic rewards for the game as the play, as the rewards for the game are only cosmetic it does not interfere with the balance of the game. In contrast to this FIFA's method of microtransaction

sees players buying packs that give them a chance to get a player that they want, if they didn't get the player that they wanted from the pack then they have to buy another pack and hope they get lucky. On top of the random chance nature of the microtransaction, the players that can be gotten from the packs have an impact on the game e.g., the gamers who purchase the packs and get lucky enough to get a "rare" character have an advantage over players who don't buy the packs. This has made me split microtransactions into two types and then compare how these types of microtransactions are reviewed by gamers. To do this I found games that use similar microtransaction methods and compared the reviews against the two types, from this I found that the method used by PUBG tends to get better reviews than the FIFA method.

5.0 Analysis

To analyse the results of the data that I got after performing the various tests on my data I used a number of techniques and practices. One of the methods that I used was the use of graphs to visually display the data. After I completed some of my tests, I displayed the information on the graphs that I made, this allowed me visually to see what the results of my tests were and from there I could easy see what the information was telling me. In the graphs I learned which companies have the worst reviews and from there I checked if their games had microtransactions to see if that was a possible cause of the bad review. In one of my graphs for my case study on FIFA I wanted to display how many of the characters had what rank, as I have discussed earlier the rank of the character directly affects the gameplay of the game and since the characters are harder to get in the packs I wanted to use the graph as a way of calculating the odds of getting each rank of character and how many packs you roughly have to buy to get the character. In addition to the graphs, I also used correlation tests on the variables of the data to check to see if any of the data related to each other, this allowed me to see the relations between data and make it easier to perform tests. Finally, I performed a linear prediction test to predict the relation between companies and their revenue and their reviews based on the data that I have in my dataset. These predictive models were useful as they gave me a much better view of the companies, how they are currently doing by using these microtransactions methods and predict how they will do in the future if they continue to use these methods.

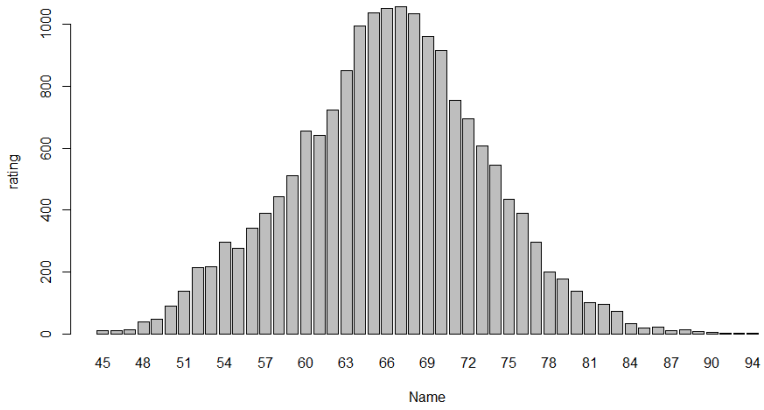
I chose these methods for analysis as they gave a wide variety of results that I could easily double check and confirm. The graph methods for analysis allow for easy-to-understand results that can be useful for visually displaying information and making it easier to understand what the results of tests are. I chose the corelation tests because it was an easy test that gives me a lot of information on the relationships between variables in the data and from that information, I can then more accurately choose what data to use in my tests for example if there was no relationship between publishers and reviews then I would have known not to test those variables against each other. The final tests that I performed, the prediction tests were chosen because I wanted to see if there was a noticeable decline in ratings as microtransactions become more relevant and if this trend will continue in the future unless publishers do something about it. I chose the ratings, publishers and revenue for my predictive model so that I could check the future rating of the companies that use microtransactions and how those potential decline in ratings affect their revenue, my

thought on this was that if gamers no longer trust these companies as their ratings drop, then this would cause a decline in their revenue.

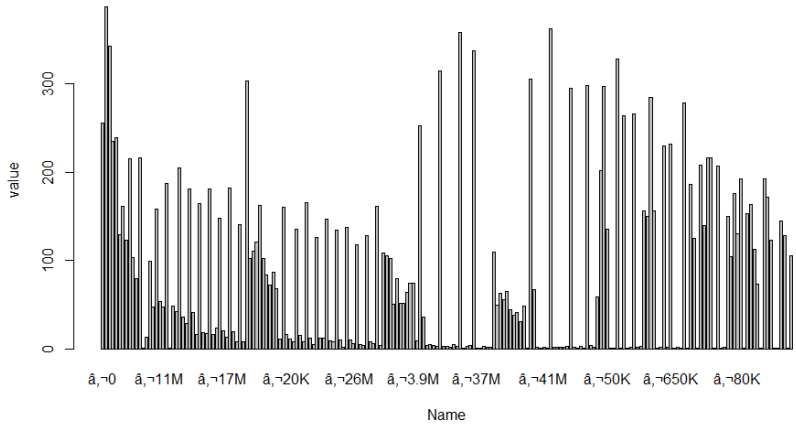
6.0 Results

Best chance at getting a good player is the ultimate pack at 2,500 or about €25 at 2.4%.
FIFA base -€70
In FIFA players can spend €25 to have a 2.4% chance at getting a character that they want, if they don't get it, they have to spend more till they get it.

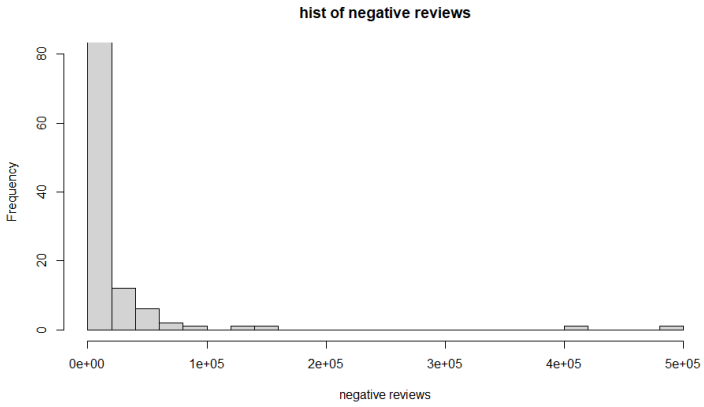
PUBG – base price €30 – battle pass €10
Allows for exclusive cosmetics that have to be earned through play, and a new map that you have to wait to play on if you do not pay for the battle pass. Better than FIFA but still looks content behind additional price.



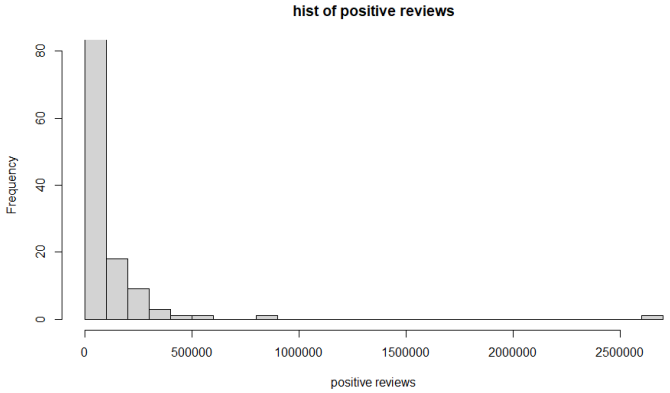
Shows the number of players that have a certain rank.



Shows player value in game



shows negative reviews on steam



shows positive reviews on steam.

Most extreme example of microtransactions can be found in mobile games like clash of clans, dungeon keeper mobile and balloons TD 6. While these games differ in actual gameplay their use of microtransactions are extremely similar, dungeon keeper for example is a game that allows players to create a dungeon that they have to defend from attackers. The microtransactions come in as the game only allows for so many defences before you get “locked out” to continue playing you can either wait however amount of time for the defence or pay £3 for a few more plays of the game, or to lower how much time the creation of a new item takes. Games like clash of clans and balloons td 6 allow for players to upgrade items in the game to give them an advantage in game. These games got a mix of rating ranging from clash of clans 4.5/5, dungeon keeper mobile’s 40% (though it has been proven that EA has been removing any reviews below 4 stars on android)” As spotted by PocketGamer (via Eurogamer), after playing Dungeon Keeper for a time, players don't get to tap any star rating they wish - instead, they are presented with a question, asking them if they believe the game deserves "1-4 stars" or "5 stars" and if you select the 5-star option” and balloons Td 6’s 4.8/5. While clash of clans and balloons td 6 have similar ratings and their use of microtransactions are similar, while dungeon keepers low rating can be attributed to its horrible microtransaction practice.

Another example of triple A game that was criticised for its use of microtransactions is the game “Star Wars battlefront 2” by notorious game company EA games. This game used loot boxes to hide cosmetic items as well as perks and even vital characters like Luke Skywalker and Darth Vader behind the levelling system of the game. The problem is that the game on launch made progression to earn this loot boxes very long and boring to the point where it would take a full day of gaming to earn one loot box, alternatively if you didn’t have the time to get the boxes, you could pay for them. Battlefront 2 use of microtransactions were so bad that the game had to be taken down for a period of time, any transactions reversed, and the progression system of the game redone to make the

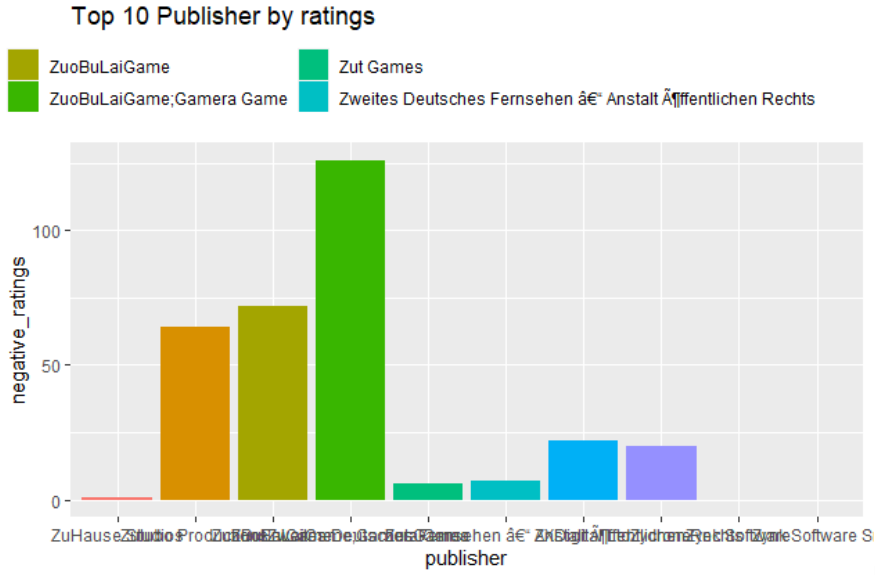
game enjoyable. Since then, Battlefront 2 has been regarded as one of the best Star Wars games ever made, this shows that while users don't mind the occasional microtransaction, too much or too outrageous can make the users who play the game lose all interest even if the game itself is good. This is even more highlighted when you see that almost every review of the game says that the gameplay and visuals are great, but the loot boxes and the progression are terrible. On release Battlefront 2 got a rating of 0.8/10 from Metacritic or 8/100 as it normally rates games, since EA reversed the microtransactions the rating on Metacritic has risen to 68/100 which is an insane 750% increase.

While the vast majority of the opinion from users are that microtransactions should not exist, there are some examples of games that rely on this type of monetization such as free to play games and mobile games. Free to play games and mobile games need to make money do either include adds or introduce microtransactions, while not exactly liked they are tolerated as the alternative would be out right paying for a game you might play once or twice.

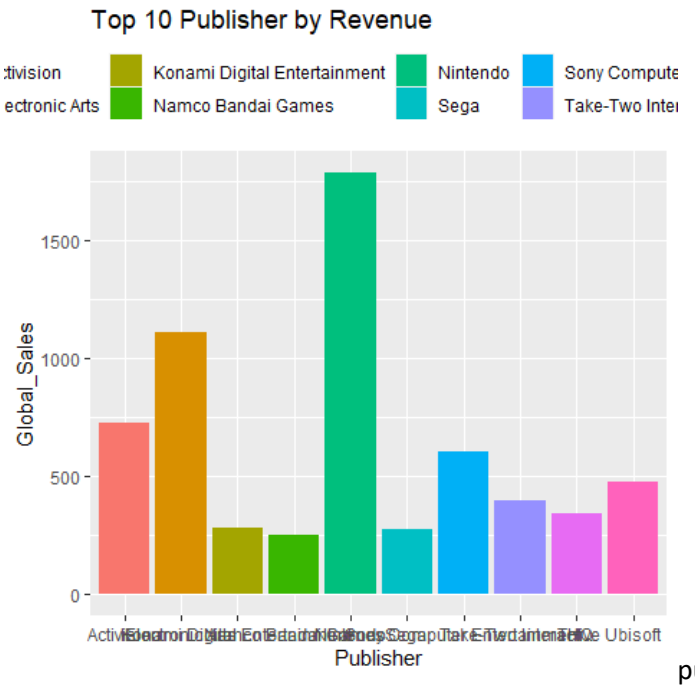
While I would like to compare examples of microtransactions improving a game when they were introduced, but after a great deal of research I have not found any examples of a game where the user ratings for the game improved. This might be due to the fact that no one likes microtransactions or not wanting to spend additional money on a game that they have already bought and assumed that the game was complete.

The general consensus that I am getting from doing this project is that most if not all gamers hate microtransactions but are willing to tolerate them as long as they don't directly impact the game by giving players who do buy them an advantage over those who don't or limiting how much players can do unless they buy them.

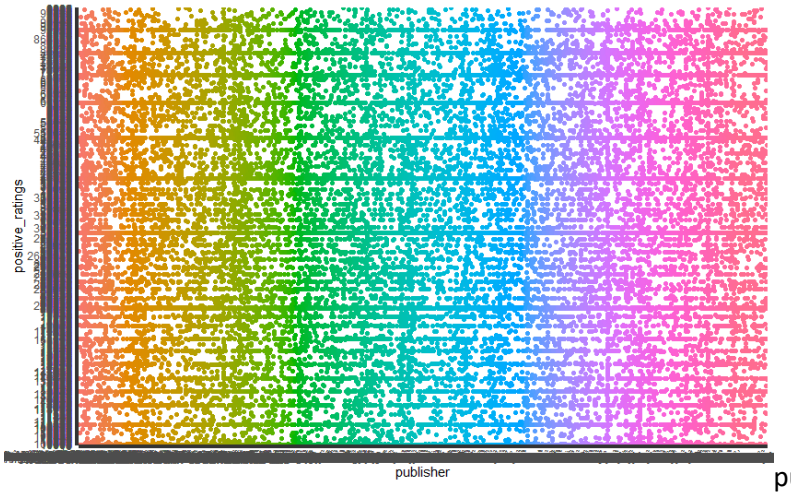
Below is a graph on the top publishers by rating and the worst publishers by rating, after getting these publishers I then went to check if any of the companies employ microtransactions to see if that was a cause for their bad reviews.



negative reviews.



publisher by global sales



publisher by positive ratings

7.0 Conclusions

In conclusion, while microtransactions are a great source of revenue for video game companies as they require very little extra work for the company, consumers i.e., gamers do not like the practice. Consumers have grown increasingly frustrated with the microtransaction practice that has become more common in the industry in the last few years. Though there are two distinct types of microtransactions, one that only affects they cosmetic appearance of the game or the character in game and one that directly affects gameplay and gives players who purchase the microtransaction an advantage over those who don't, consumers are more willing to accept and purchase the type that doesn't affect the gameplay and games that directly affect the game with their microtransactions are rated far worse than other games. As an example, the game Battlefront 2's ratings increased immensely after the game removed the microtransactions that it used, these microtransactions would lock certain parts of the game until the player unlocked them in a random box that they had to purchase.

The main advantage of this project is that it looks at microtransactions not from the business side of the industry but from the perspective of the consumer and what kinds of transactions that they are willing to purchase so that the industry can continue to thrive. The disadvantage of this project is that the opinions and perception of the video game consumer is subject to change as the company behind certain games adds or changes the game and as such the rating of the games can change very quickly, while I am looking at a dataset that contains a lot of information of the industry, the ratings could have changed since the beginning of this project.

The strength of this project is that it contains a lot of information from a lot of different sources that allow me to get a more accurate and precise version of the data that I can use to make the results of my project as accurate as possible. In addition, it looks at a different part of the videogame industry as most other reports on microtransactions look at the business side of the industry. The weakness of this project is that my main tool for analysis RStudio had some issues while computing the results of the tests that I performed, in order to fix these issues I had to reinstall RStudio and redo some of my tests which took some time to complete.

8.0 Further Development or Research

With more time I would have liked to look at more games as a case study like FIFA and PUBG to see if there was more of a comparison of the types of microtransactions and see if there are more types of microtransactions that I could look at. If I had more time to work on this project, I would have liked to look at how microtransactions have changed the video game industry since their release from both a financial view and from the view of the consumer. Since microtransactions are an easy way for a company to earn more money from a product than it was originally bought for, they are very useful for the company's revenue and help to make the company more profitable. With more time I would have liked to compare the change in revenue that a company earns from the use of microtransactions against the reviews that customers have given the products to see if there is a point were the customers bad reviews start to negatively affect the company's revenue. In addition, I would like to make a predictive model that tracks the reviews of a video game franchise that have microtransactions and how consumers rate the franchise as a whole as more microtransactions are added to the game. I would like to check this as it would be interesting to see if established franchises that have tons of fans would lose interest as microtransactions were brought into the game.

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https://christianmhelms.medium.com/microtransactions-are-killing-the-gaming-industry-79fd4fdbdcfd
https://www.howtogeek.com/449521/what-are-microtransactions-and-why-do-people-hate-them/

10.0 Appendices

Proposal: Objectives

The objective of this project is to investigate whether the inclusion of microtransactions in games has caused users(gamers) to lose interest in the game. In recent years this type of practice in the video game industry has become more and more common while the general reaction of this practice seems to be mostly negative. I am investigating this as I have seen this happen in many games and want to provide a concrete example of this with and end goal of showing that while companies make a bit of extra money, they inevitably lose their customers as they grow increasingly more frustrated with the lengths the practice takes. I will be investigating games that have these kinds of microtransactions and comparing how users rate the game on social media and on websites that rate games. To investigate this idea, I will be finding the relevant data from game rating websites, game shops like steam and social media to see how users react to having these kinds of microtransactions in games. As an example, I will be looking into notable games like PUBG, the FIFA franchise and the sims franchise as these games all introduced microtransactions that users found questionable. My ultimate goal is to show that the introduction of microtransactions in video games will inevitably destroy the franchise that the microtransactions were introduced in thus resulting in a loss for the company, as they will have lost a valuable part of their market share. I hope that at the end of the report someone at the various video game industries will see this report and realise that while they will gain a small increase in their profits, it is not worth the inevitable loss of the franchise as consumers become frustrated with the practice and switch to a new product.

Background

When video games were first created the game was made fully finished and that is what the consumer bought, as time has progressed many video game studios and creators started adding new parts to game to further enhance the story or to add an extra bit of fun to the game. As more and more games started to use this practise some studios and games started to leave bits of the game out and charge extra money as DLC (downloadable content) to play these parts. These parts of the game unlike the extra bits added on later like they used to, were key parts to the games story and with their exclusion the story of the game was incomplete and lacking. This practise has further been expanded as games can charge users to pay for in game currency to use to buy things like extra lives, items or in very rare instances the ability to change how your character looks in the game. The most extreme example of this is loot boxes where consumers pay money for a chance to get an item they were looking for and must pay more money if they don't get the item. As these practises become more and more common many consumers are starting to go back to earlier games that are finished or start playing independently developed games away from video game companies that use these practises. I have also started to ignore games for the same reason, and I want to see if this is becoming a common thing. As more games are created without this method, they seem to become popular faster than most games. Some notable games that have Microtransactions in them or were introduced later are PUBG, The FIFA franchise and the SIMS franchise. I will be investigating these games and other games that use similar practices in this project.

The main reason that I would like to investigate this claim is that I have noticed that this kind of practice is becoming more and more common from a video game company that I used to like, in this case the company Bethesda. However, as they started to introduce more and more microtransactions that seem to have no purpose to the game, I began to grow tired with their games and have even started to avoid their games. This has culminated with Bethesda's newest release "Fallout 76", this game was supposed to be an online multiplayer game with tons of new features then previous games. What became very apparent as players started their first play of the game was that the game was unfinished, barely playable at that Bethesda had spent more time setting up the online store for the game then the game itself. The fallout store would allow users to purchase cosmetic things like new colour options for certain weapons and so on. None of the things offered in the store had any impact on the game and it could have been created without its inclusion, many players of the game quit it very quickly and Bethesda lost a lot of money because of it. I Hope that these kinds of practices become less common so that video game industries can improve on the games they make and hopefully improve their customers trust in their companies.

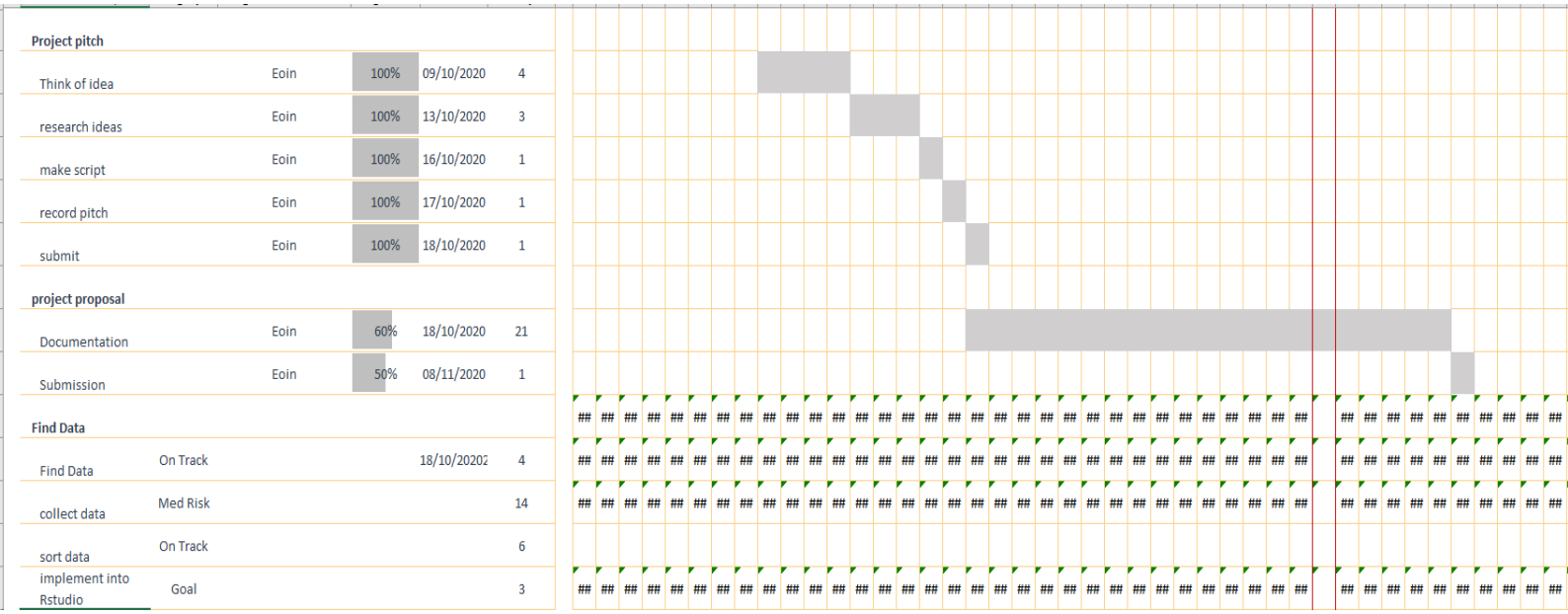
Technical Approach

In order to get all of the information I will need for this project I will be searching for games that contain these kinds of microtransactions form a mix of video game retail sites such as Steam, websites that rate games like Metacritic and comparing how they are rated by different sites and social media. Once I have got all of the data, I plan on using the RStudio software to bring all of the data together and begin analysing it to see how the data looks and come to a final conclusion on whether the introduction of microtransactions in games causes users to quit the game and is inevitably bad for the industry itself as a whole.

Special Resources Required

RStudio, websites, databases, social media

Project Plan



Project pitch				
Think of idea	Eoin	100%	09/10/2020	4
research ideas	Eoin	100%	13/10/2020	3
make script	Eoin	100%	16/10/2020	1
record pitch	Eoin	100%	17/10/2020	1
submit	Eoin	100%	18/10/2020	1
project proposal				
Documentation	Eoin	60%	18/10/2020	21
Submission	Eoin	50%	08/11/2020	1
Find Data				
Find Data	On Track		18/10/2020	4
collect data	Med Risk			14
sort data	On Track			6
implement into Rstudio	Goal			3

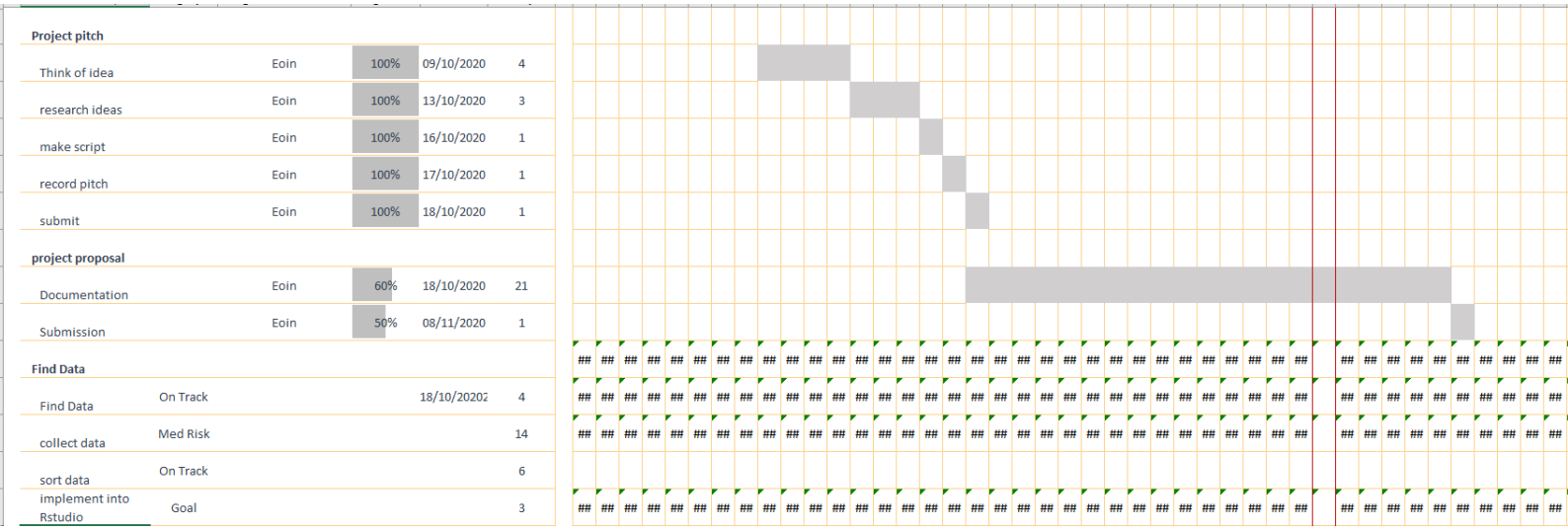
Technical Details

Java, RStudio, the twitter developer's API and some web scraping tools. These tools will allow me to gather the info I need, collect it into the correct software and analyse it.

Evaluation

Once I have gotten my data, I will use RStudio to collect and evaluate my data. Using this system, I will compare everything together and begin my testing.

10.1. Project Plan



10.2. Reflective Journals

First reflective journal:

During this month I submitted my project pitch video and have been researching all the necessary data that will be needed for the project. I am currently waiting for confirmation on whether my idea has been accepted or not and am currently starting the documentation for the proposal.

During the next month I began searching for my data that I will be using in the project. I searched in many places for data that will be relevant for what I am going to be doing and found data on the website Kaggle, here I found 5 datasets that I will be using and implementing into RStudio. In addition, I found three websites that also have relevant information to be used. From here I then began graphing the data that I collected and determining what the results were from this.

Jan: In this month I continued to find more examples of games with microtransactions and what the reaction to them was, I have found a number of good examples and am currently analysing how they are rated. This month I have been looking at mobile games to see how compare to triple A games to see if there is a genre of game that gets better reviews for their microtransactions, I have found three examples that have had a mix of reviews from completely negative to little impact.

Feb: Here I have tried to find examples of games with microtransactions that have gotten better reviews since their introduction but have yet to find any examples that are not DLC or full-on expansions to the games. I will continue to attempt to find examples to see if there is an argument to be made that microtransactions can improve a game and if so in what way are they implemented. I am also in the process of attempting to find if there is any corelation between video game publishers' ratings and if their games have microtransactions.

Mar: During this month I continued to create a few new graphs to display the information that I got from the tests that I did on my datasets. I also did a number of corelation tests to find any corelations between a few factors to see if they cause ratings to fall or increase. During this month I submitted all of the necessary information for the project showcase including the poster images and profile image, I also began doing a bit of the documentation for the end report.

Apr: During this month I didn't do as much as I would have liked as I had other projects and terminal based assessments that needed to be completed. During this month I created the project showcase poster and continued the documentation of the project. I also completed the last bits of the code that would allow me to analyse my data. In the project poster I included some of my graphs, wrote a small abstract description of my project and included a background image for the poster. This month I will complete the documentation and poster for the final submission.

10.3. Other materials used

Any other reference material used in the project for example evaluation surveys etc.