Monetization in free-to-play business model from a game designers point of view
Abstract

Free-to-play games are a growing trend in the gaming world. Microtransactions are a way for the player to get more content in a free-to-play game. Microtransactions are the main source of revenue from free-to-play games. This research introduces important free-to-play key performance indicators also known as free-to-play metrics. In addition to knowing the basics of free-to-play key performance indicators, a game designer should be aware of user acquisition. User acquisition is closely associated with Big Data and data analytics. Data analytics can and should greatly affect the game designing solutions.

The free-to-play world offers several other challenges for the game developer. The three biggest of these challenges are: to make as many players as possible to download the game, to maximize the number of player returning to the game after a while and then maximize the monthly average gross revenue per paying users.

Two interviews were made in a Finnish gaming company called Rovio Entertainment Corporation specialized in free-to-play games and their monetization. According to the literature review and the interviews made data analytics and user acquisition are an essential part in making a free-to-play game profitable. Planning and optimizing a game economy should be done as early as the prototype phase and should be maintained through the life span of the game.
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Important keywords

All of the keywords are from the book “Freemium Economics” by Eric Seufert (2014).

*Average revenue per daily active users (ARPDAU)*

ARPDAU also known as Daily ARPU is “an average measure of revenue contribution on a per-user basis” in a free-to-play game. ARPDAU is closely related to the free-to-play monetization mechanics and especially the changes in it.

*Churn*

Churn in this context represents the players who are most likely to abandon the free-to-play game. The opposite of churn are the players who are highly engaged in the free-to-play game.

*Conversion / conversion ratio*

Conversion or conversion ratio in this context represents the percentage of the users that have used real money to the particular free-to-play game. In the free-to-play game industry the conversion ratio is about 5%.

*Daily active users (DAU)*

DAU is a simple metric which consists of the number of players who play or interact with the free-to-play game in a given day.

*Daily new users (DNU)*

DNU is also a simple metric which consists of the number of new players who play or interact with the free-to-play game in a given day.

*Monthly active users (MAU)*

MAU is a simple metric which consists of the number of players who play or interact with the free-to-play game in a given month.

*Monthly average gross revenue per paying users (MAGRPPU)*

MAGRPPU describes the average revenue produced per-user in one month. This also includes marketing revenue etc.

*Monthly average revenue per paying users (MARPPU)*

MARPPU is the same as MAGRPPU but it consists of only microtransaction revenue excluding marketing etc.
Retention / retention ratio

Retention or retention ratio describes the percentage of users returning to the free-to-play game after a certain amount of time for example one day, one week or one month after starting to play the game.

User acquisition (UA)

User acquisition in this context is essentially trying to grow the player base in a free-to-play game. The aim of user acquisition is also to make the existing users to spend more and in this way enhance revenue. User acquisition is done for example by through marketing.
1. Introduction

Free-to-play (F2P) business model in gaming is a vastly growing trend. Whether one is talking about pc gaming, console gaming or mobile gaming, one can notice that the supply of free-to-play games is a massive one. Simply put, a free-to-play game is a game that is available for free. Usually one can enjoy the main aspects of a free-to-play game even without paying anything. But if one wants to gain full access to everything a game has to offer, microtransactions are usually mandatory (Hamari, Hanner & Koivisto, 2017).

Typically free-to-play games have several kinds of microtransactions. They differ from one another by the amount of payment and by the type of payment. The amount of payment can vary from a couple of euros to hundreds and sometimes even thousands of euros. The type of a microtransaction means that it in addition to real money, the microtransaction may be paid by using in-game currency or a gift card etc. Overall microtransactions are a typical way for a gaming enterprise to get revenue from free-to-play games (Hamari, Hanner & Koivisto, 2017).

In order for a game company to gain revenue through microtransactions, a game company needs players. In free-to-play gaming players are divided into: daily new users, daily active users, monthly users and monthly unique paying users. These are the user groups whose needs the game company must address in order to get players and in order to keep them (Seufert, 2014, p. 88). More information about the different kind of users will be in the upcoming paragraphs.

The aim of this research is to examine the monetization of free-to-play games through literature and two interviews made with a Finnish gaming company specialized in free-to-play games. The research tries to answer questions about how to plan a game economy in a free-to-play game and how game companies can affect to the monetization through game design choices, user acquisition, and knowledge on different international markets. Under examination were also free-to-play key performance indicators and data analytics. Subscription based business model is excluded from this study and it will be included when this study is expanded into a master’s thesis.

This research consists of a literature review, results of the empirical study and a conclusion. The second paragraph of this research is about the main aspects of a free-to-play business model. The third paragraph examines premium business model and the fourth paragraph explains important KPIs. The fifth paragraph examines user acquisition, data analytics and the measurement of ROI. The sixth paragraph covers the game design aspect of free-to-play and its monetization and the seventh paragraph introduces the interviews made for this study. Finally the eighth paragraph covers the conclusions of this study.
2. Free-to-play business model

2.1 The main aspect of free-to-play

The main aspect of free-to-play in gaming is that the user or the player gets the game for free. This means that the game is accessible to anyone anywhere who has the appropriate device and access to the internet. Compared to premium business model where one usually buys a physical copy or spends money for a downloadable game, in free-to-play one just downloads the game free of charge from a web-based game store or something equivalent (Luton, 2013). In free-to-play gaming there aren’t usually physical copies and the game is only downloadable via internet. This decreases the manufacturing expenses significantly since there is no need for physical copies. Also the developing and marketing aspect of free-to-play games is different: from the get-go they use data-driven based development and marketing (Nieborg, 2015).

There are several service providers who offer the free-to-play games for download. Some examples of these service providers are Sonys Playstation Store, Microsofts Xbox Marketplace and Valves Steam. Other popular web-stores are Google Play and Apple Store. All of these web-stores are a great gateway to the games but they also function as an innovation platform for the developers (Nieborg, 2015). All of these web-stores function in a similar way when considering free-to-play games. In the named web-stores players can search for different game categories such as “first person shooter” or “fps”, “roleplaying game” or “rpg” and so on. In addition to these kinds of categories each of the named web-stores also has a category called “free-to-play games”. In the “free-to-play” category there are tens and hundreds of games for the players to choose from. The web-stores make it possible to distribute the free-to-play games all around the world via internet. The web-stores take a certain percent out of each sale and the game company that made the game gets the rest. Typically the amount the web-store takes from making a product available is about 30% (Mackenzie, 2012).

2.2 Microtransactions

Because the price tag for the free-to-play game is free of charge for the players, yet the game company must make profit somehow. This is where microtransactions come to play. Like expressed in the introduction microtransactions are the most typical way for a gaming enterprise to get revenue from free-to-play games. According to Hamari, Alha, Jarvela, Kivikangas, Koivisto and Paavilainen (2017) players buy virtual content trough microtransactions for six different main reasons: unobstructed play, social interaction, competition, economical rationale, indulging children, and unlocking content.

Microtransaction content has a lot of variance basically depending on the game that they are associated with. Typical microtransaction content is the so called “loot boxes” which are really popular in todays gaming industry especially in free-to-play games (Brightman, 2017) These loot boxes usually contain things like in-game currency, cosmic items, playable characters or objects etc. The main aspect of loot boxes is the gambling nature of it. The gamble in this case means that the content of the loot boxes is usually categorizied in different rarities for example “common”, “rare” and “ultra rare”
and players usually cannot affect the odds to receive a more rarer item. Microtransactions can also be used directly to get things that could be received from loot boxes but usually then they are more expensive.

Considering gaming in the microtransactions world, there are terms “pay to win” or “pay to progress”. The first term means that by using real money the player gets a significant advantage compared to a player who has never used real money on the free-to-play product. The latter term means that a players progress in the game is faster by using real money. Considering microtransactions it is worth noting that some of the players who download free-to-play games don’t spend any money on them. On the other hand another defining aspect of free-to-play games is that because players got the game for free, they consider it “okay” to spend money on microtransactions sometimes even more than they would have with a full game in a premium business model. It is the game developers’ task to design the content that can be purchased via microtransaction so that they hold great value for the player (Hamari et al. 2017).

2.3 Downloadable content (DLC)

In addition to the things mentioned earlier microtransactions can be used to purchase downloadable content or expansions for the free-to-play game. DLC or expansions are basically more new content that the player usually must pay for. This is one of the key aspects of free-to-play business model: it is not enough that a player downloads the game, but they also must remain active with the game. In order to make the players stay playing the game, the developer should release new content every now and then. DLC is an important source for profit since it makes the “old” players keener on the game and also attracts attention from new gamers. Downloading actual content has a really high mean rate for the players (Hamari et al. 2017).
3. Premium business model

3.1 Premium business model in gaming

Premium business model in gaming is basically considered as the standard model. Until free-to-play and subscription based games became popular, premium was basically the only option. The main aspect of the premium business model in gaming is that there is a full game and a price tag that comes with it. In other words a player buys the game with a certain price and the game can be played through out with full access without spending any more money on it (Davidovici-Nora, 2014). There can be DLC packs for premium games as well but they are not as mandatory for profit as they are in free-to-play business model. Retention in premium games means that a player repeats playing it and it has to affect the player so that he is willing to buy the possible sequel as well (Davidovici-Nora, 2014).

3.2 Characteristics of a premium game

Usually the amount that a player must pay for a premium game is fixed and the game company gets the profit right away when a player purchases it, but in addition to the normal version of the game there are several other versions of it for example deluxe versions. The deluxe versions can be either physical or digital and the main aspect of them is that a player pays more but also receives more. The deluxe extra content can vary from in-game cosmetic items, physical decorative items such as limited edition posters and statues to full expansions or the so called “season passes”.

Season passes can be bought in several ways. They can come in the deluxe versions or they can be bought separately as a whole or in smaller parts in a physical or digital form. The fundamental phenomenon in season passes is that they usually don’t offer much content right away but the amount of content increases through the games life span. Season pass content usually comes available separately but each piece of it costs more than when compared to a purchase of a full season pass. It is important to note that also free-to-play games can include “season pass-like” purchasable content such as “founders packs” etc. but typically they are in a different type or form (Koch 2015).
4. Free-to-play key performance indicators (metrics)

In the next four sections (4.1-4.4) I describe the key performance indicators attached to free-to-play gaming that are needed to analyse development in order to maximize the number of players and by that maximize revenue. The chosen key performance indicators are retention, monetization, engagement and virality.

4.1 Retention

In a player level retention describes in terms “true” or “false” whether or not the player returned to the free-to-play game after a certain amount of time. The retention of every day is described as “true” or “false” depending if the player interacted with the game that day. In a product level retention is calculated like this: “To calculate a product’s day 1 retention for yesterday, the number of users who first used the product yesterday and returned to it today would be summed and then divided by the total number of users who first used the product yesterday” (Seufert, 2014, p. 86).

The purpose of analysing retention is for the game developers to see the time frame for a player from starting to play the game until churning out of it. A higher retention rate means basically means more players returning to the game which can be seen as happy and pleased customers. If customers feel this way, they are more likely to stay playing the game and also spend money on it. According to Lovato (2013) “a strong player retention is correlated with your game’s financial success”. The users that are related to retention are described as Daily new users (DNU) or Daily active users (DAU) (Seufert, 2014, p. 86). One of the most important aspects in maximizing user retention is to optimize the first user experience since most of the time that is the decision point whether or not a player wants to continue playing or return back to it after a while (Setthawong & Thanadsornsarnset, 2016).

4.2 Monetization

One of the biggest questions in free-to-play gaming is what players actually want to buy and why some of them spend a lot more money than the others (Luton, 2013). This question and especially its answer if known can greatly affect monetization. Monetization statistics are important for the developer so that they can follow their revenue and react to players spending patterns. A term that is tightly connected to monetization is conversion and conversion ratio. Conversion ratio is calculated by dividing the players that spend money by the number of all players. Through conversion ratio it is possible for the developers to follow what percentage of users actually spends money on the game. Conversion is caused by direct purchases but also profit that comes from marketing. Marketing aims to reach new players but also the regular customers. (Seufert, 2014, p. 92)
Profit or revenue can be analysed through average revenue per daily active users (ARPDAU). Average revenue per active user (ARPU) can also be analysed by month or lifetime which both give a little different statistics. In addition if the developers want to follow the revenue of a certain item, a product catalog distribution which shows the revenue gained per item, is needed. (Seufert, 2014, p. 92)

4.3 Engagement

Engagement metrics basic function is to show the length of a players interaction with the game and its frequency. It can be seen as a continuation desire metric (Stankevicius, Hawraa, Drachen, Schoenau-Fog, 2015). The more lengthy and frequent sessions a player has with the game, the more likely he/she is to spend money on it. Engagement analysis is important for the developers in a “develop-release-measure-iterate”-cycle, so that they can ensure or enhance customer satisfaction. (Seufert, 2014, p. 98)

If the developers want to follow player engagement from starting the game, through tutorials and to the actual game, an onboarding funnel is beneficial. An onboarding funnel is a figure with the percentage of remaining users on the y-axis and different stages of a game for example “start”, “tutorial 1”, “tutorial 2” etc. on the x-axis. When analysing an onboarding funnel the developers can see the engagement of players on different stages and thus make development choices to increase the number on each stage. Session metrics is used to capture the length and the frequency of the game sessions (Seufert, 2014, p. 98). According to a research engagement consists of “invested time, effort, have interest and being willing to concentrate” (Stankevicius, Hawraa, Drachen, Schoenau-Fog, 2015).

4.4 Virality

Virality describes the games distribution without using professional marketing etc. An example of a game distributing without marketing is an enthusiastic player base who are active in the social media and in the gaming world in overall. To achieve a positive virality is dependent on several factors: release time market conditions, development choices, social media and even pure luck.

To minimize the amount of chance and to maximize the amount of virality, developers need so called virality hooks. Virality hooks happen in social media all the time for example in the feed of Facebook. If a facebook user plays a facebook game, his/her friends who might share the same interest see that he/she has played the game or just receive an advert or a request from it. If the developers want to follow virality statistics a k-factor is beneficial. K-factor is figure which shows the average amount of new users each user has brought to the game (Seufert, 2014, p. 102-105). Virality has a huge connection to social media so even free-to-play games should have ways for the players to be social with each other (Dg, 2013).
5. User acquisition

User acquisition is a way for the game developers to try to grow the player base in a free-to-play game and if one wants to succeed in it, one should truly analyse the players themselves (Jung & Pawlowski, 2014). In the next three sections (5.1-5.3) I describe some basic fundamentals of user acquisition.

5.1 Big data

Big data as a term in this context is basically an enormous amount of user data that is connected to the use of the game. The amount of data is so huge that it must be divided into shards in order to gain beneficial information out of it. A typical way of describing Big Data is in volume, velocity and variety (Frampton, 2015). Basically every interaction the player has with the game is stored and then analysed. The information gained out of big data is really beneficial to the game developers when making design choices whether talking about fixing/adjusting something already made or implementing something new. “A Big Data approach to product development allows the freemium product team to iterate faster, execute deeper analysis of feature performance, and draw sounder conclusions about how users are interacting with the product”. (Seufert, 2014, p. 34)

5.2 Data analytics

Data analytics is as the name suggests: analysing the big data that has been received. The developers need to decide which data is beneficial to analyse and they are trying to find patterns that occur so that they can react to them beforehand. Defining some baseline events within a hierarchical structure can give a good overview of the data to be analysed. Typical user data involved in this are: user ID which identifies the user, user state which describes the users’ state at the time of the event under analysis and lastly the event state which describes the unique characteristics of the specific event. An example of this is a player with a user ID who typically spends money on a certain free-to-play game on his payday from a certain device (user state) during a certain event (event state). In data analytics the gained data is then organized according to the needs of the game developer so that they gain maximum benefit from it when designing the game further according to the users’ behaviour (Seufert, 2014, p. 35).

5.3 Measuring Return on Investment (ROI)

Data analytics is an expensive and time consuming task, so measuring the return of investment is a natural task for any free-to-play game developer. The fundamental aspect of ROI is that it basically tells how much an invest returns for each unit of currency spent (Svanhild, 2009). In free-to-play games updating the game and adding new content to it according to the needs and behaviour of the user base is typical. Since the developers usually have to do updates and new patches often, they need to prioritize
the added content and this priorization is done by measuring ROI and the time needed to actually do the update (Seufert, 2014, p. 42).
6. Game design in free-to-play business model (compared to premium business model)

6.1 Free-to-play challenges for a game developer

The three biggest challenges for a game developer in the free-to-play gaming are: to make as many players as possible to download the game, to maximize the retention ratio and then maximize the monthly average gross revenue per paying users (MAGRPPU).

6.2 Designing monetization in free-to-play

The starting point for a successful monetization is to get as many people as possible to download the game. Without enough downloads there wouldn’t be enough players to support the game. In web-stores that offer free-to-play games one of the most important aspects is the user ratings. Free-to-play games with low user ratings can remain unknown to the masses or just make the players download something else. Moreover the lower the ranking the lower the game is in the web-stores search bar. At the launch of the game, a big marketing campaign combined with user acquisition can positively affect the number of downloads and reviews the game will receive. Also the indexed landing pages in the search engine and keywords usage must be taken into account in order to maximize visibility within the search engines. With free-to-play games the price tag (or basically the lack of it) also makes downloading the game easier itself. In addition to this traditional media, internet adverts and virality can give the much needed visibility in order to maximize downloads. (Seufert, 2014, p. 222-225). It is worth noting that also user knowledge through Big Data can affect the download rates because of higher odds for better user satisfaction. (Marr, 2016).

In order to maximize the retention ratio the developers have a huge task: they must make the game to fulfil the players’ needs which makes them satisfied in the product which again makes them more likely to return back to the game. It is the game developers’ task to offer valuable content and first class experience even on free-to-play game every day if they want to keep the players coming back to their game (Trader, 2011). Analysing the retention ratio on different timeframes is a key part in this process. For example if the retention ratio drops after a certain amount of time with a certain percentage of users, the game developers must address this and try to analyse the reason for the drop after that specific time. In order to achieve productive data the first day of the product use should be calculated for every user and after that calculate the retention ratio day by day according to how many of the DNUs return on that particular day (Freemium Logics 88-91). Most typical reasons for players to quit or decline returning to a game are simply boredom and frustration and game developers should make in-game solutions that address these problems (Lovato, 2013).

When the download rate has been maximized and the retention ratio is high enough the developers have to maximize the MAGRPPU in order to maximize revenue. According to a Seufert (2014) only 5% of free-to-play games actually use real money on the game. Advertising is considered as a good way to increase conversion but mainly for those
users who didn’t reach the game without them. The paying 5% are considered highly engaged players and monetization is partly dependant on them (Seufert, 2014, p. 92). Knowing the goals that these engaged players pursue can have a big impact on the revenue they produce (Yoonhyuk & Pawlovski, 2014). Also social media and virality affect the MAGRPPU since positive feedback and / or enthusiastic player base can contribute revenue indirectly. Even every non-paying user is important since they all can “spread the word” and thus recruit more people into the game. (Seufert, 2014, p. 92).
7. Interview at Rovio Entertainment Corporation

7.1 Description of the interview

Free-to-play gaming design aspects and ways of revenue maximization depend a lot about the company who owns the game. For my research I have studied a Finnish gaming company called Rovio Entertainment Corporation. Rovio Entertainment Corporation is a worldwide company with its main aspect in creating mobile games. The company is best known from a mobile its Y brand which was born from a mobile game. For example in the first half of year 2017 their games have been downloaded over 3.7 billion times and they had then about 80 million monthly active users. Their headquarters is in Helsinki and they also have offices in Sweden, Great-Britain, China and the United States. All of their games are free-to-play (Rovio Entertainment Corporation listalleottoesite 15.9.2017). The reason interview was chosen as a method for this research is because the gaming companies have first-hand knowledge on the research subject and they are actually involved in the business. The information gained is especially valuable from the specialists who are involved in monetization, business intelligence and game design.

The interview was a themed interview with pre-made topics that were planned beforehand. The topics were chosen based on literature and my research questions. The most important themes for this study chosen in the interview were:

- Free-to-play Key Performance Indicators (KPI)
- Optimization of virtual currency, virtual products and subscriptions
- Relationships to different “online marketplaces” (Google Play, Apple App Store, Facebook and Amazon)
- Monetization differences on different international markets
- User acquisition
- Business Intelligence

I had two one hour interviews with two different employees from Rovio Entertainment Corporation. The first interview was with the head of the Business Intelligence Department and the second interview was with the Head of Finance Department, Games. Both of the interviews were themed interviews as mentioned above. They were conducted in Helsinki in the headquarters of Rovio Entertainment Corporation. The notes from these interviews were written down to a laptop using Microsoft Word. Both of the interviews were also recorded by permission from both interviewees using a mobile phone recording app. The recordings were used to expand the written notes and were especially helpful in the transcription. The aim of the transcription was to “transfer” the interviews as closely and as efficiently as possible to this research. When listening to the interview recordings I tried to minimize the effect of my own interpretations and transcript them as they happened in real life (Saaranen-Kauppinen, Puusniekka 2006). Before the interview I mailed the interview themes described above to both of the interviewees so that they had basic knowledge about the interview beforehand. During the first interview we discussed mostly about Business Intelligence, User Acquisition and KPIs and during the second interview about monetization and its
optimization and game design. In both interviews discussion was carried out freely but following the topics written above.

7.2 Results of the interview

In this paragraph I will go through the results of both interviews according the topics mentioned in paragraph 7.1. The order is the same as in their presentation. Results come from either of the interviewees and in some cases from both of them. They are analyzed based on my notes and the recordings. The Rovio Entertainment Corporation has also gone through them to verify the correct interpretations of the interviews.

7.2.1 Free-to-play Key Performance Indicators (KPI)

The free-to-play key performance indicators that were discussed are explained in the “Keywords” paragraph of this research. According to the interviews every department of the gaming company has their own key performance indicators and their importance depends largely on the department. KPIs that were discussed in the interview were: DAU, MAU, MARPPU, MAGRPPU, ARPDAU, DNU, retention, funnel conversion (how effectively DNU comes in relation to investment), ROI and engagement.

Two KPIs that are rarely seen in literature were mentioned and they were sessioning and time-for-fun. Sessioning describes how many sessions a player has for example day and for how long do they last. Free-to-play games especially in mobile are aim for continuous and frequent sessions without giving an “overdose” to the player. Time-for-fun is basically a description of how long does it take for the fun to begin for the player. In practice this means how many clicks or seconds does it take for the user to get where he/she wants. The lower the time-for-fun is the more likely the user is to open the app / game several times a day.

Every week everyone in Rovio Entertainment Corporation receive a KPI report which shows weekly DAU, MAU, ARPDAU, sales, retention and engagement. According to the interviews KPIs are mainly for monitoring and game teams need a lot more in depth information than just the KPIs.

7.2.2 Optimization of virtual currency, virtual products and subscriptions

In practice optimization in this area starts from the game designers whose responsibility it is to keep monetization in mind from the get-go. Every game that Rovio Entertainment Corporation makes has optimization model and a game economy as early as in the prototype phase. It is essential to understand the target audience for each game in order to even start planning optimization models or the economy. Every choice inside the game should be done by keeping the target audience in mind and also the audience that is already involved with the company. Virtual products and currency have single purchases, bundles, offers and in some cases subscriptions which grand for example in-game currency on a monthly basis. These purchases made by players are monitored through a dashboard and revenue from them minus the investment forms the economy.
Different game types have different monetization models since their target audience can be different as well.

7.2.3 Relationships to different “online marketplaces” (Google Play, Apple App Store, Facebook and Amazon)

The most famous online marketplaces considering gaming and Rovio Entertainment Corporation are Google Play, Apple App Store, Facebook and Amazon. Considering Rovio Entertainment Corporation the percentages of co-operation in gaming with the marketplaces are about 60% for Google Play, about 40% for Apple App Store and the rest for Facebook and Amazon. Account manager is the link between the gaming company and the marketplace. Every game team collaborates with the marketplaces especially in a time of launches or updates.

7.2.4 Monetization differences on different international markets

According to the interview monetization in gaming is different depending on the location where the game launches or exists. For example in China monetization is a lot more “aggressive” when comparing to Europe. Pay-to-win culture is really different in different countries. In Europe pay-to-win is usually considered to be bad for the players and the game but in Asia it is considered to be a normal part of the gaming world. If a player hasn’t had enough time to play, it is okay for them to “buy their way back in”. It is not just the monetization design that is different, it is the overall design that should be different when comparing different international gaming markets. The consumption pace in Asia is a lot faster when comparing to Europe and that is why new content and new ways of spending money should be introduced all the time especially in Asia.

7.2.5 User acquisition

In Rovio Entertainment Corporation, different teams are involved in user acquisition in different ways. The game teams who own the game aren’t directly involved in user acquisition. The business intelligence team monitors the Life Time Values of the customers and they produce the data that is used in evaluating the Return on Investment in user acquisition. The marketing team wants to get as many quality users as possible through product marketing which involves for example influencers (Youtube, e-sports) and tv and online campaigns. One of their main goals is to maximize new installations of the game. The user acquisition team makes the campaigns and co-operation with business partners and tries to define the optimal audience. Defining an audience involves the so called look-a-likes who represent the most likely consumers for the game. Look-a-likes have different qualities such as age, country, device and the business partners for example Facebook helps in finding the look-a-likes with the said qualities. The amount of revenue produced by these users is monitored and this is essential especially when evaluating ROI.
ROI is set by the finance department and they operate using the statistics made by the business intelligence team. ROI is evaluated on micro level by the lifetime revenue a user produces in game combined with the lifetime revenue from all other games he/she plays combined with the lifetime revenue produced by the friends of the player. Simply put the main idea is that the amount of investment on a user is smaller than the revenue he/she produces. On a macro level it is all expenses combined with revenue which should be higher than required rate of return.

7.2.6 Business Intelligence

The business intelligence team in Rovio Entertainment Corporation has several key areas. They work under certain games and/or with the general services such as UA, marketing and technology. When the business intelligence team works under several services, it provides a scale advantage because they can each focus on more detailed areas. Analysts are the people who decide what data they want to gather from their games. They define the events (data to be gathered) and significant user actions to be monitored. They work with Big Data from Rovio Entertainment Corporations own games and this Big Data resides in the so called data lakes. Data from the data lakes can be acquired through SQL query.

A large portion of the data is from the marketplaces discussed in paragraph 8.2.3. This data is gathered by an attribution partner who passes it on to Rovio Entertainment Corporation. For example there is a marketing campaign with certain expenses. In order to evaluate the income from the campaign compared to expenses the company needs to evaluate how many new users came from it. Other important aspects considering the user are the quality of the user, their financial behavior in the company’s games, the transactions they make and the new users they produce. This is also called Customer Lifetime Value which has also been addressed in previous chapters.
8. Conclusion

Free-to-play business in gaming is here to stay. In the last five years the free-to-play industry has grown fast and yet growing. Because of this it is the game developers’ task to get specialized with the free-to-play mechanics, standards and especially monetization. A free-to-play game without efficient and carefully planned monetization is doomed to fail. Also user acquisition plays a key part in this and it needs the right level of expertise in order to be executed properly. Results of this study indicate that properly done user acquisition can greatly help in maximizing the new installations of the game. If a game developer doesn’t know their customers, there is little room for tailored solutions which could have a big impact on the revenue of the game. Analysing the potential player base before a new game is even developed could also save companies from a lot of possible mistakes and errors. Big data which is gathered all the time is really important and through data analytics it can be harnessed into proper use. Big Data knowledge can be a way to bypass the competing game companies (Marr, 2016).

Through data analytics the game developers learn the players’ behaviour better which in turn will make them do better design choices. According to the results of this study it is important to examine the quality of the users which contains their financial behavior in the company’s games, the transactions they make and the new users they produce. The key indicators considering the users of the free-to-play games need to be analysed in order to maximize revenue. With the proper kind of game development, marketing is of course also needed (Leaver, 2016).

Proper monetization in free-to-play gaming should be every game developer’s goal from the get-go. As introduced in this study, every game needs to have an optimization model and a game economy carefully planned as early as in the prototype phase. Optimization models and the game economy can vary depending on the market that the game will be released in. It is in the game developers own hands how free-to-play content can be purchased and at what cost and they need proper expertise for it (Hamari & Keronen, 2017). As this study brings forth when measuring ROI, the investment on a user needs to be smaller than the revenue he/she produces.

More research on this subject would be interesting to do especially in real environment with different real free-to-play gaming companies. Combining computer science with economics is essential today and computer science students should be taught economics and vice versa. This also goes for employees of a gaming company: learning economics especially in a free-to-play environment is an important part of the future of this business. Limitations of this research include the lack of a subscription based business model in free-to-play games. The subscription business model is gaining popularity in the gaming business and it is an important aspect to be addressed with. This research will be expanded into a master’s thesis and I hope to interview more free-to-play gaming companies in order to compare their solutions and business models considering free-to-play games and their monetization.
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