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Kansainvälisenkaupan koulutusohjelma

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Marketing Analytics for Free-to-Play Games

ABSTRACT

This thesis deals with free to play marketing analytics in the light of mobile iOS games. Other platforms will be also discussed as well as mobile marketing aspects such as user acquisition, big data and metrics.

The case company is a Finnish game startup which is about to release their first game The Supernauts. The objective of this thesis was to research what kind of analytics and metrics are needed in the marketing of free-to-play games as well as to examine what are the best practices in the industry. Through this research the company will be provided with information it can further utilize during the development and marketing of The Supernauts.

This research work is a case study, and the collection of data was mainly done through interviews. The interviews followed semi-structured and open design in order to be able to collect as much data as possible and enable freer information sharing. The researcher has worked for the case company as Marketer while making of this research, which enabled access to information and industry insights.

The research findings reveal that free to play model and available amount of data has changed the market towards more analytics and metrics-driven decision-making. Many metrics such as LTV, CPI and retention are used in order to make everyday marketing decisions but every company has their own best practices. Limited tracking on iOS platform is driving marketers to rely partially on assumptions and companies with small marketing budgets are more dependent on gaining information through contacts.

TIIVISTELMÄ

KYMENLAAKSON AMMATTIKORKEAKOULU
Kansainvälinen kauppa

Tämä tutkimus- ja kehitystyö käsittelee ilmaiseksi pelattavien pelien markkinointi analyytikoita iOS -alustan näkökulmasta. Myös muita alustoja käsitellään kuin myös käyttäjien hallintaa, isoa dataa ja metriikoita mobiili-markkinoinnin näkökulmasta.

Tutkimuksen kohteena on Suomalainen peli-startup, joka työstää ensimmäistä peliänsä The Supernauts. Tämän tutkimustyön tavoitteena oli tutkia millaiset analytiikat ja metriikat tarvitaan ilmaiseksi pelattavien pelin markkinoinnissa kuin myös selvittää mitkä ovat alan käytännöt. Täyttämällä nämä tavoitteet yritys saa tietoa, jota se voi edelleen käyttää The Supernauts -pelin kehityksessä ja markkinoinnissa.

Tutkimus suoritettiin tapaustutkimuksena. Empiirinen tutkimus käsitti puolistrukturoituja, avoimia haastatteluja, jotka mahdollistivat vapaamman tiedon jakamisen sekä tehokkaan tiedon keruun. Tutkimus- ja kehitystyöntekijä on työskennellyt kohde yrityksessä markkinoijana tehdessään tätä tutkimusta, mikä mahdollisti tiedon laaja-alaisen hankinnan.

Tutkimus osoittaa että ilmaiseksi pelattavien pelien malli ja saatavissa olevan tiedon määrä on muokannut alaa kohti analyytikoiden ja metriikoiden mukaan tehtäviä päätöksiä. Monia metriikoita, kuten LTV, CPI ja retentio, käytetään joka päiväisissä markkinointiin liittyvissä päätöksissä mutta jokaisella yrityksellä on omat tapansa käyttää niitä. Rajoitettu jäljitys iOS alustalla on ajanut markkinoijat tilanteeseen, jossa heidän täytyy luottaa olettamuksiin ja pienet yritykset ovat riippuvaisempia kontakteista informaation saannin suhteen.

TERMS AND ABBREVIATIONS

A/B testing	Testing method in which two user groups are given different versions of the game and then measured which one performs better.
Advertising Indentifier	Apple corporations's new tracking identifier meant to replace UDID.
API	Application Programming Interface
ARPU	Average Revenue Per User
ARPPU	Average Revenue Per Paying User
ARPDAU	Average Revenue Per Daily Active User
Big Data	Term used to describe the use information both unstructured and structured and also its availability and exponential growth.
CPA	Cost per acquisition. The average cost of acquiring a user.
CTR	Click through rate. Clicks divided by impressions. Basically all the clicks, which users have made on particular banner or other advertisement, divided with the amount of times this particular advertisement or banner was showed to users.
eCPI	Effective cost per install. Complete cost of marketing in that particular channel divided by amount of installs it generated.
eCPM	Effective cost per mille (effective cost per thousand impressions)
CR	Conversion rate. Can be multiple of things but mostly used to see which users have converted from non-paying users to paying users or in user acquisition to see how many users have been converted to "players " by installing the game.
Game client	A piece of software that connects to a game server.
IAP	In-app purchase. A Purchase made inside an application such as game.
Inventory (ad network)	All the games which are under one particular advertisement network and which can be used to show advertisements.
iTunes	Apple corporation's digital marketplace.

LTV, LCV	Lifetime value, Lifetime customer value. Present value of everything that the user will ever spend on a product or service.
SDK	Software development kit
Steam	Valve software's digital marketplace for desktop PC.
UDID	Unique device identifier. Used to uniquely identify particular iPhone or iPad.
UI	User interface is an interface, which shows the player all the information required to play the game, including controls and buttons.

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1 INTRODUCTION

Grand Cru, CMO Thorbjörn Warin first suggested the subject, marketing analytics for free to play games, to me. It would benefit Grand Cru as a company and also me in ways of learning new and highly important things, which would be related to my work as a marketer in a gaming company. The mobile game industry is changing rapidly and thus last year's information is usually obsolete which is making this subject challenging since there is not many books about it or if there is the information is usually outdated. Also while doing my internship at Grand Cru, I have been able to see and learn how a game product is being made. So in a way this is a natural continuum to my internship since now I can see and evaluate the results of how the game performs after launch and see how the marketing is done in accordance to the results of sales and how customers use the product. My research should also help Grand Cru to better understand and evaluate the marketing related analytics data they have from the game and how it affects the whole company. This is also something that could not be done by someone who is from outside of the company. My intention was to also interview professionals from other game companies and then compare the results with ours.

1.1 Case company

Six game industry veterans founded Grand Cru Oy in 2011. The Company is located in Kallio, Helsinki and as of April 2013 there are 20 employees. Their main idea was to create user generated content game for the masses. There are these kinds of games already on the market but those have been mainly aimed for hardcore players not to the masses. No one has been able to do this on the big scale yet and Grand Cru Oy is aiming for that. The first product is called "The Supernauts". It will be available for Apple iPad, iPhone and iPod. The company is funded by private investors, with additional support from TEKES programs. (Vilpponen 2012; Tekes 2013 /)

Company vision 2015 describes Grand Cru in year 2015. According to the vision, Grand Cru has tens of millions of users on its game services, which are leading game products in their respective categories. The company will also have several game developing teams, which consist of the best game developers in the world. Revenue per person will be one of the highest inside the industry.

1.2 (Presentation of)research problem

Grand Cru Oy is a recently set up startup company and most of the technology related to the product must be created from scratch. Also game products are unique in a way that every game usually requires special solutions regarding technology around it. This also applies to metrics and analytics. There are many analytics companies available which provide their universal all around solution for metrics and analytics but as Grand Cru's product "The Supernauts" differs from typical free to play game in many ways, the company has came to a solution in which they are partnering with several analytics companies as well as creating their own technology. As all this is somewhat new to everyone inside the company, it is difficult to define what would be the right way to proceed and how analytics will affect the decisions inside the company as well as the product itself.

For user acquisition purposes Grand Cru decided to begin their user acquisition efforts by partnering with Fiksu inc., which is a company who offers their own mobile advertising platform to manage an advertising campaign on mobile. Fiksu has partnered with several different advertising networks and does real-time bidding on user acquisition. It is, however, uncertain whether it would be better to contact these ad networks straight or work with them through Fiksu. Fiksu offers their analytics dashboard to measure how every ad network is performing but the information usually comes two or three days late. Sometimes it is also uncertain what kind of traffic the network is driving and is the game itself causing the lack of returning users or is the traffic just poor quality. If some of the metrics show poor performance for one or another reason there is no standardized procedure to fix the problem.

1.3 Research objective and limitations

The aim of this thesis is to research what kind of analytics and metrics tools are needed to collect enough data to evaluate and measure how the product is performing and what is needed to make marketing decisions out of it. All this goes side by side with the development of the product. To make it easier to understand for readers coming outside of the industry, core differences between the "old –model" and new "free to play –model" are defined and ensuing changes in the industry are desrcibed. Also interviewing professionals from other companies should shed some light on differences how they use and evaluate metrics. Inside Grand Cru CMO Thorbjörn Warin is

interviewed. From other companies the interviewees included Eric Seufert, Head of Marketing and User Acquisition at Grey Area studios and Erlend Christoffersen, Head of User Acquisition at Supercell. Focus of this thesis will be on the marketing side of analytics and not on the technical side such as analytics system architecture. This is because the technical side is more related to work of data analyst or back-end developer and I wanted to make this thesis more from marketer's point of view. In addition, this thesis will mostly cover marketing from Apple's App Store although other digital shops are also discussed but the main focus is on Apple. This is due to the fact that Grand Cru as well as Supercell, among others, is concentrating on Apple's App Store.

Research question and related topics

Research question is:

> What kind of analytics data is needed to make good marketing decisions?

Sub-questions, in order to receive more information, are

- How to acquire the needed data.

- Which things affect the quality of the data?

1.4 Structure of the thesis

This thesis continues with literature review introducing key concepts of digital market places and devices to give reader a comprehensive view over the market today. Then it continues with free to play model and its advantages and disadvantages. Also big data and data-driven design will be discussed and after that most used metrics. Big data and metrics is followed by user acquisition and app store marketing related issues. Theoretical framework of this thesis thus consists on issues of user acquisition, metrics and free to play market.

2 MARKETING OF FREE TO PLAY GAME

Because the industry is changing so rapidly, usually books that published are already outdated. However, there are plenty of magazine articles and presentations that have been held in conferences related to the industry.

First the literature review of this thesis introduces common practices with digital market places followed by look into mobile, PC and tablet markets. Free to play and issues related to it will be discussed on chapter 2.2. Finally user acquisition and app store market related topics are discussed in 2.5. and 2.6. respectively.

2.1 Digital marketplaces

At the moment every major operating system/platform has its own digital market place. Although all of these work with their own rules and regulations they also have a lot in common. Typical revenue split between the marketplace and developer is 30% for the market place and 70% for the developer. Also typically the provider of the market place keeps tight control over the titles that are released to keep the quality high and to avoid any kind of scandals or problems with authorities. In reality, to developers this means 1 to 5 weeks of waiting while the game is under evaluation. However, for example, Google play does not have as tight control over content published inside their shops as Apple and Steam have. (Valve developer community 2013; Apple inc. 2013; Average App Store review times 2013)

2.1.1 Mobile & PC

On mobile there are two considerable marketplaces: Apple's Appstore and Google's Android based Google Play. Both of these companies run their own operating system and these marketplaces are integrated in to the operating systems. According to Graziano, (2011) Apple's iOS currently has market share of 18.8% while Android has 68.3%, if measured by number of users worldwide. After these come RIM's Blackberry OS, which stands for operating system and Microsoft's Windows phone which both have market share of less than 5%. McBride (2012) also states that while Android clearly has the biggest market share it is still not so tempting to developers as the complete market share is divided between multiple of devices with different specifications and requirements. Thus, making game that works on one android device

might not work on another one. Also unlike Apple, Google does not require the users to insert credit card information when downloading apps that are free, which affects also purchases of paid apps. According to Eadicicco (2012), Apple's Appstore currently holds the number one spot as a marketplace, which generates the best revenue for the developers. During 2012 in-app payments generated 69% of overall revenue (Average daily revenue was $15 million), whereas Google play only reached $3.5 million.

On desktop PC, eventhough Steam has lost some of its market share to Amazon and Microsoft during the recent years, it still has around 50% share of the market under its control. Thus, on PC Steam is the only noteworthy platform. (Lindig, 2011)

2.1.2 Tablets

Tablets are used for various things like reading books and checking email but recent study on Apple's iPad by NPD.com revealed that almost 30% of iPad owners use it to mainly play games. Even though iPad has been losing its market share from 90% to around 38% during last 3 years, It is still the most profitable tablet platform to make games for. Next in the competition are Samsung's tablets and Amazon Kindle, which was first made only to read books but later expanded to games. (Asay, 2013; Benedetti, 2012) As mostly companies have gone first for iPhone and then to iPad, simply because iPhone market it much bigger than iPad market. Recent success of Supercell with "tablet first" –strategy has made also other companies to opt for the same strategy although they claim that iPad still generates a little less revenue than iPhone. (Venturedata.org 2012) However, Fiksu (2012b) states that iPad users are usually more valuable iPhone users, which compensates for the smaller market.

2.2 Free to play

Free to play model (free2play or freemium, also called microtransactions model) has transitioned from vaguely defined concept to leading business model in mobile during recent years and is still relatively new (Seufert, 2012d). Fields and Cotton (2012, p.21-25) talk about the same matter but call it a social game (the term is more related to Zynga and era of Facebook games, which is discussed in more detail in chapter 2.5.2.). Free to play is a monetization model which evolved in countries like South Korea and China. In the West players were used to model where they had to pay

monthly subscription fee to be able to play the game, typically around $12. In the East (South Korea, China) very few people owned a home PC or console. Instead most of the players rented time in Internet cafes where they played their favorite games with friends. Also in the East piracy was a big issue therefore traditional retail model did not work either. Asian game companies took advantage of the monetization problems and distributed game clients for free but made their money by selling the users equipment and gear inside the game. Their focus on selling virtual items generated huge revenues; transactions were small but frequent sometimes even many times a day by the same user and this is how modern microtransactions model was born. These free to play games evolved even further by introducing type of in-game currency, which could be bought with real money and used only inside the game to mainly speed up progression. Today there are games which distribute the game client for free and mainly generate revenue through in-game advertisement. (Wooldridge and Schneider, 2011, p.130)

2.2.1 Advantages of free to play model

With the old model customer goes into common retail store or specialized game shop and pays for the product before playing it and then hopes the game is worth the investment. This model continues to hold strong also today in traditional retail game markets (Fields and Cotton, 2012, p.21-22). Because of digital distribution and cheap server costs, cost per customer when distributing the game is no longer an issue. Digitally sold and released games can bypass many time and money consuming processes, which are common with traditional model such as printing DVD or blu-ray discs, creating box art for multiple of countries and paying for delivery trucks to drop off the product (Fields and Cotton, 2012, p.39). This has enabled many game companies to self publish their games since all that is needed to get the game into the shop is to upload the game client to a digital marketplace provider's server. Also the revenue curve during a fiscal year of a game company has changed drastically during the era of in-app purchases. As traditionally most of the profit comes during the first couple of months after the launch of the game. With microtransactions model the profit is divided more evenly through out the whole product life cycle as Patrick Wagner prescribed in a video recording 'How can the freemium model work for you? Part2/2'. However free to play model is not suitable for every type of game and requires careful

planning from the start of development to be successfully implemented into the game. (Wooldridge and Schneider, 2011, p.131-132)

2.2.2 Disadvantages of free to play model

As the game client can be downloaded free of cost by the customer, there is no real financial incentive to play the game any further if it does not please the customer for some reason. Because of digital distribution it only requires one click (or tap) to download the next game and move on. Thus, if the game fails to be entertaining, there is no way to make the investment profitable by marketing means (Fields and Cotton, 2012, p.41). As Achrén (2013) states in his blog, there are multiple of reasons why players quit. This can also be seen from the retention metrics as day 1 retention is usually around 40% to 50%, which means that more than half of the players who have installed the game will not come back anymore during the next day. Metrics are discussed in more detail later in the chapter 2.3. (Seufert, 2012b)

Also the ease of publishing game(s) has resulted in enormous amount of games being published every week and thus caused serious competition among companies, which led to issues with discoverability. Therefore small companies or independent developers have hard time getting their games noticed on the digital market places and that is why the use of a publisher is still a good solution as they usually possess larger marketing resources. (Wooldridge and Schneider, 2011, p.2)

Typical for free to play games are also users that do not pay anything during the whole time they play the game. In reality 95 – 97 % of users never perform an in-app purchase (microtransaction). Although on desktop PC side there has been seen conversion rates as high as 30 %. Thus for the game to be successful those 3 – 5 % of users must generate enough revenue to exceed the expenses which occur from all the players who are participating in the game. Monetization of those non-paying users can be difficult as forcing them to do something just makes them to switch to another free game. Monetization of non-paying users is discussed in more detail in chapter 2.6.2. (Schneider, 2013)

2.3 Big data and data-driven design

As Seufert (2012a) states in his blog post. Big data came true during recent years because of cheap storage of data, which enabled companies to store every action they could measure from their customers. With enormous amounts of data it has become easier to spot true trends and derive insights with less sophisticated techniques. Greenfield (2012) calls big data in his blog with a term data scale. He defines it as the millions of pieces of data that allow the company to improve its product or user experience in ways that competitors with fewer users cannot. He states that there are four advantages that can be acquired through data scale.

1. **Prediction**. He uses an example of how PayPal became profitable once they figured out how to accurately detect fraud.

2. **Understanding** the users and what they need and mean with their actions.

3. **A/b testing,** which allows the company to test variable solutions to one problem and choose the right one with help of users and massive amounts of data.

4. **Segmentation** of users, which help the company to provide their users content they like.

Because inside a game it is relatively easy to store and record every step a player takes, usage of big data and metrics has generated a new way to make games which Seufert calls 'data-driven game design' where metrics and analytics has been taken into design from the very beginning. In fact in his blog post 'Analytics-first development' he states that 'analytics is a core component of free-to-play game and it must be considered from the earliest stages of development'. On another post Seufert (2012f) points out how much data one game can produce in average: 250 000 Daily users, with session time average of two minutes, and conducting 5 events per minute, with one session per day, produces 2.5 million rows of information per day.

Nichols (2013) points out the importance of analytics (in his article to Harvard business review). Because of the amount of data there is a big change for companies to conduct mistakes with data calculations such as not understanding the interdependencies between advertising networks and calculating some results double times. Thus it

is beneficial for the companies to start using what he calls "Advertising Analytics 2.0", which means tools that enable marketers to know precisely how all moving parts of campaign drive sales collectively and what happens when those are adjusted. Analytics will be discussed in more detail in chapter 2.4.

2.4 Metrics

As on the web there are tools like Google Analytics which can be implemented into a website to analyze traffic and user behaviour. Mobile applications are no different and knowing as much as possible about users demographics and usage patterns will help developing the game as well as making better marketing decisions. (Wooldridge and Schneider, 2011, p.201)

2.4.1 Retention

According to Seufert (2012b), retention is probably the most important metric. It is usually measured through looking values between day 1, day 7 and day 30. It tells how many of users, which have installed the game return to play the game after 1-7 days or 30 days. Retention is very important because it allows to calculate and estimate lifetime value of a customer, which is then used to calculate ROI for user acquisition (marketing costs). It is also the main metric, which tells a lot about the entertainment value of the game. Typical good retention profile in mobile gaming is 40-20-10, meaning that 40 % of users return during the next day and 20 % after 7 days and finally 10 % still return after one month. Seufert states in an article to pocketgamer.biz that minimum threshold for successful free to play game is 30-15-8 and that the game should not be released until retention values are such. Since players tend to monetize better when they progress in the game, high retention typically means good monetization. (HoneyTracks game analytics, 2012)

Gordon (2013) wrote that they investigated all those apps that Flurry tracks and categorized those apps by retention and size of user base. Comparison of those two metrics into one is presented in the Table 1 presented below.

Table 1. Percent of apps by users and retention

Percent of Apps By Users and Retention

MONTHLY USERS	30 DAY ROLLING RETENTION		
	0-21%	22-36%	37%+
32,000+	Shooting Star 6%	12%	Superstar 15%
8,000-31,999	10%	12%	12%
0-7999	Black Hole 17%	10%	Red Dwarf 6%

Source: Flurry Analytics

As seen in Table 1, 15 % of apps fall into category which Flurry calls "Superstar". Those apps perform well with 30-day retention as well as with the size of their user base. Bottom right corner of the table is a category called "Red dwarf" which have relatively small user base but perform well with retention. Those apps are likely to perform well in the long run. On the opposite extreme can be seen another category with also 6 % of apps. Flurry calls this category "Shooting stars" as they have large user base but are likely to decline fast because of poor retention. On the bottom left corner is a category called "Black hole". These apps perform poorly by both categories and are usually old declining apps, new apps which are still trying to establish user base or apps that are just poor quality. To further measure the differences between these categories Flurry created another table, which shows the average number of minutes users spend in apps by category during one month (Table2 below.)

Table 2. Mean minutes in app by users and retention

Mean Minutes in App By Users and Retention			
MONTHLY USERS	30 DAY ROLLING RETENTION		
	0-21%	22-36%	37%+
32,000+	Shooting Star 50	62	Superstar 98
8,000-31,999	32	44	89
0-7999	Black Hole 29	35	Red Dwarf 62

FLURRY — Source: Flurry Analytics

As seen above, high retention apps clearly indicate greater numbers also in minutes spend per user. High number of users indicates positive correlation with minutes spend per user per month but has not as strong correlation as with retention metric. As these tables above show, retention is very crucial for apps long-term success. Also the association between retention and average minutes spend implies that those apps that perform well with both also perform well with revenue. (Gordon, 2013)

2.4.2 Monetization

Monetization can be measured in couple of different ways. One way is ARPU, which is average rate per user. It can be calculated by taking total daily revenue and then dividing it with all the users that played during that day. ARPPU is similar to above but this time total daily revenue is divided with only users that have made an in-app purchase. Conversion rate is also important, which means the amount of players that have made an in-app purchase and therefore "converted" themselves to paying users. A gaming company can also get revenue from advertisements in addition to in-app purchases, which should be taken into account and separated in calculations. Other im-

portant metrics to measure are average transaction value, payment conversion rate, first purchase trigger and paying user cohort by marketing channel and by geography. To improve these metrics HoneyTracks game analytics suggest on running A/B testing to improve first time buying conversion and optimizing user flow towards first purchase trigger. They also suggest to A/B test different pricing models. (Seufert, 2012b; HoneyTracks game analytics, 2012)

2.4.3 Engagement

Engagement is an important metric for the game to succeed in long term. It is usually measured by evaluating average session length and count. It basically tells how long players are playing the game during one session and how often do they login to game during one day. As discussed before retention metric also tells a lot about the engagement of the game. Even though Seufert (2012b) lists retention and engagement into different categories, HoneyTrack game (2012) analytics lists both into same category accompanied by DAU, which means Daily active users.

Laughling (2012) uses a chart to show how mobile games by category have different engagement levels. He uses two metrics to measure this; weekly frequency compared with 90-day retention. (Figure 1.)

Figure 1. Mobile game loyalty matrix(Source: Laughling 2012)
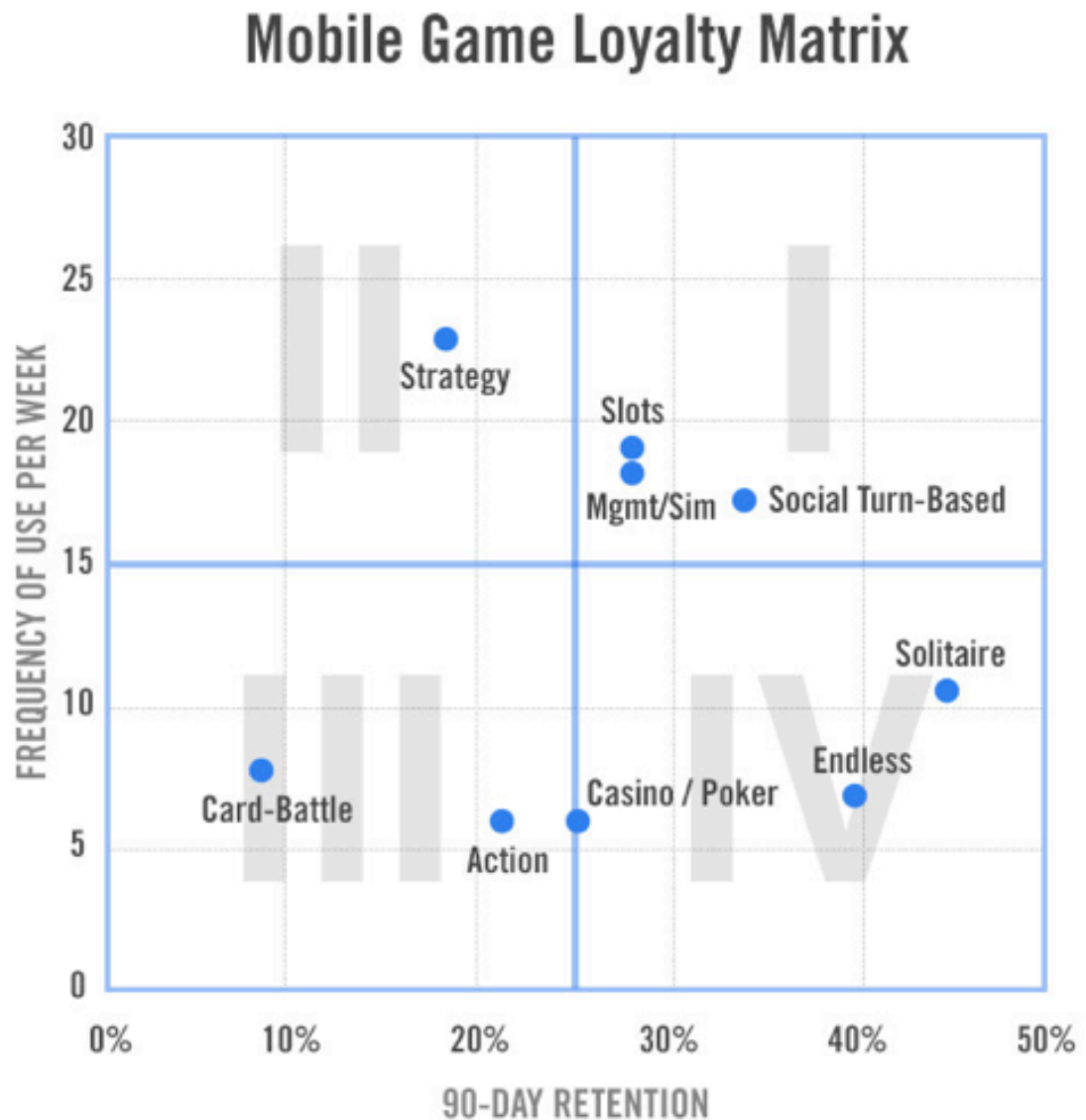
As can be seen in Figure 1 above,quadrant I represents games that are used frequently by highly retained users. These games are well designed and companies that maximize revenue usually monetize through in-app purchases combined with in-game advertisement. More discussion about these both can be found it chapters 2.6.1. and 2.6.2. respectively. Quadrant II is occupied solely by strategy games genre and very typical for games of this genre is intensive usage over short user lifetime. Successful strategy game developers usually drive monetization through player versus player gameplay and fast progression through use of in-game currency, which can be bought with real money. Quadrant III holds two genres which are both hard to monetize due lack of

engagement. Thus, extra attention should be used when making user acquisition decisions since, due to "hardcore" nature of some of these games; developers may end up paying for large batches of users, which will drop off immediately. Quadrant IV represents games, which are highly repeatable and easy to play but may lack depth to monetize well through in-game purchases. However, these games can monetize well in the long run through in-game advertisements, and due to large user base they can be effectively used in cross-promoting developers other more narrowly targeted games. More discussion about cross-promotion is presented in chapter 2.5.1. (Laughlin, 2012)

2.4.4 Virality

Virality is measured by a metric called **k-factor**, which is average number of additional users each user invites to the app. Calculating this on mobile apps is causing trouble as mobile platforms drop almost all indicators for source when users reach digital market place such as Apple's appstore. (Seufert 2012b)

During the era of Facebook games Zynga was the company to follow. Its games were highly based on cheap advertising on Facebook as well as having very high k-factor. Basically in order to play Zynga games successfully it required the user to ask help from friends in Facebook and they also provided advantages inside the game to users who had sent out invitations to their friends to join the game. All this eventually led to so many game spam messages on Facebook that users started to complain. After Facebook changed game invitation messages to the background Zynga was in serious trouble since the k-factor in its games dropped dramatically. (Constine, 2012) Also on mobile going viral is the cheapest way to acquire users. Even though this is relatively hard since sending Facebook messages or emails does not work as well as on desktop PC. However, while designing a game, virality should also be taken into account. As Seufert (2012e) states on his blog 'Virality in Mobile gaming part1' there are three main things for the virality to work in a free to play game. The first is a compelling incentive for the user to invite someone else into the game. Then a well-constructed invitation and last a channel through which the invitation is shared. The incentive is relatively easy to set, as it is basically same thing as on desktop PC. However the channel through which the invitation is shared has been a problem. On another post (predictions for mobile gaming) Seufert (year) is talking about the change in the industry as Facebook launched new advertisements, which feature new frictionless app

install by just clicking the advertisement. Facebook also recently announced new video advertisements for the mobile news feed, which can make Facebook one of the most potential marketing channels of 2013. Seufert (2013a) also talks about Applifier's new video product Everyplay, which allows users to record their in-game play and post it on Internet. This opens a new virality channel to drive installs.

2.4.5 Lifetime value

Seufert (2012g) defined LCV as 'the present value of future revenues attributed to a user'. Basically LCV or LTV is just a prediction of how much a single user is going to ever spend on a service or product. It can be quite easy to calculate for products that are one-time purchase type or with monthly subscription fee. However, for mobile companies, who use freemium business model, calculating LCV can cause problems, as revenues are irregular and not guaranteed even with engaged users. Regardless of the difficulty to calculate LCV, it is very important for the company to know how much can be spent on marketing.

To calculate lifetime value of a user in free to play game the first thing to do is to solve what Seufert calls 'duration'. By duration he means 'number of days in which a user will engage with the service' and not the calendar days user remains in the service. For example, if the user downloaded a game and played it only twice (during separate days) and after one month uninstalled it, would count only as two days not 30. Duration can be calculated with the help of retention. If the company already posses retention data from day 1-7 and day 30, it is possible to generalize users retention curve to some extent for example 365. The points on this curve represent the possibility that a user will interact with the game on that particular day. Duration is then calculated by summing the values. After this, the second component needed to calculate LCV is the value of a user,iIn other words, how much money users spend. This can be measured by taking trailing average spend which is based in a daily per-user basis. It is important to note that this number also should not be calculated by calendar day but rather in engagement days to ensure comparability with duration. Seufert (2012h) uses trailing average because some changes to the game such as new features and bug fixes can cause spending patterns to change. As historical average can be totally different from what it is currently, thus LCV should tell the expected income from a user acquired today to avoid misleading results. (Seufert, 2012h)

Lifetime value of a customer has to exceed the cost of acquiring a new user (CPI) in order for the game to be profitable and to justify advertising costs. There are also several other costs, which should be taken into account when deciding how much to spend on user acquisition. These costs include credit card fees, commissions, hosting, support and royalties. These are not typically included into user acquisition costs and these may cause a company to acquire users, which are not profitable after license fee to Disney or commission to Apple. Therefore when negotiating with, for example, license owners it should be taken into account that they should take their share after the marketing expenses have been deducted. Otherwise both companies can end up in a situation where both of them lose. Thus, if the company is paying a 25 % royalty and the cost to acquire new user is $0.75 and the LTV before royalty is $1. That would make marketing impossible. So both of the companies get nothing. But if the royalty costs are paid after marketing costs it would mean 25 % from a $0.25, which could be significant with millions of users in a month. (Melnick, 2013)

Seufert (2012g) continues with an argument that it should be the marketing department of a gaming company, which ultimately calculates the LCV value as it has 'most at stake' with the accuracy and timeliness. The product department has an interest to keep it as high as possible to boost paid user acquisition and finance uses it conceptually to project revenues. Marketing department also sets the advertisement bid prices, which are usually based on LCV.

2.4.6 Acquisition metrics

Important acquisition metrics include CTR and CR. Click through rate is used to measure how well the banner and video advertisements are performing. It can be easily seen when combining number of impression with number of clicks. Conversion rate tells how many of the users have actually installed the game after clicking the banner. HoneyTracks game analytics (2012) also states that it is important to measure ad network and marketing channels separately doing cohort analysis. Also when calculating metrics it should be done by dividing the users geographically and demographically. After such user segmentation A/B testing can be used for different targeting.

2.5 User aquisition

On mobile there are many different ways for user acquisition, which is industry specific term for marketing. Users can be acquired through viral methods or by spending money on advertisement. The cost of getting a user will also differ from game to game as some games work better on spreading in viral (has a better k-factor) and also the price for certain type of users varies. However mobile platform is much more limited marketing vice than for example more mature PC. On Mobile tracking appears to be the biggest problem and that has caused problems with measuring performance of the advertisement and ultimately ROI. However, Apple's recent update to iOS 6.0 and introduction of the new Advertising Identifier was meant to solve some of these problems. As Advertising Identifier replaces the old widely used UDID, which has had problems with privacy concerns. (Chantal, 2012).However, as Fiksu (2012a) states that most advertising networks are still using UDID as it takes time for publishers and advertising networks to update their SDKs and consumers to upgrade to iOS 6.0. On March 21 2013 Apple Inc. announced that its app store will no longer accept new applications or updates which access UDID.

2.5.1 Cross-promotion

Fields and Cotton (2012, p.82) say that companies with multiple of games released often market their newest game to the users of their previously released titles and vice versa. This is called cross-promoting in gaming industry. Wooldridge and Schneider (2011, p.118) state that a company having multiple of products in a digital market place such as Apple's Appstore and doing cross-promotion can boost sales four to five times. Today, there are also third-party advertising companies, which are specialized in cross-promotion between games from different companies. It is also not uncommon for two game companies to sign a direct deal with each other for cross-promoting their games. On mobile, this can be done by adding advertisements inside the game itself, so that player usually gets a reward (incentive) when clicking an advertisement or by adding a premade embedded app catalog. (Wooldridge and Schneider, 2011, p.123-124)

2.5.2 Types of traffic

There are several kinds of user traffic which are categorized by the way they are acquired. These can be roughly divided into three different categories which are: Organic, Incentivized and non-incentivized traffic. Organic users are those who download the game without marketing influence. Organic users are usually also very loyal therefore the best kind of users a game can get. Then there are incentivized and non-incentivized users. Incentivized users are those, which are acquired by giving them an incentive (usually in game currency or items) when they, for example, install a game through an advertisement. Incentivized users are usually much cheaper to get than non-incentivized but they are not loyal since most of them only install the game to get the incentive. However incentivized marketing can be still beneficial as buying many installs for free also drives the game's rank in the top lists up and therefore gives more discoverability inside digital stores such as Apple's app store and therefore also generates more organic traffic. Also sometimes the cost for non-incentive user acquisition can be so high that even though incentivized traffic generates less loyal users, because of the volume it generates with smaller budget, it is still more beneficial. (Fiksu, 2012c)

Different kind of traffic can be bought from different mobile advertisement networks such as AdColony, Flurry and Tapjoy. Some networks only offer incentivized or non-incentivized traffic and some offer both. Schneider (2013) talks about ways to monetize users that do not monetize by means of in-app purchase. By selling them to advertisement network the game company can generate revenue. This is done by running advertisements inside the game and the company will get payment for every click on the advertisement. Seufert (2012i) largely criticizes the way this is done in mobile advertising world. He states that the information asymmetry benefits the seller. As the seller does not share any information about the user she is selling. So the buyer knows that the user was put up for sale but does not know anything about the likelihood of conversion or whether or not the user has actually made an in-app purchase. There are two possible scenarios an application developer is willing to sell an user:

1. The developer uses **in-app advertisement** as main model to generate revenue.

2. The developer uses both **in-app purchases** and **in-app advertisement** with help of analytics to decide which users to sell.

So most of the users, which are bought from advertising network, are actually those who are already segmented as little probable to generate revenue. This information asymmetry is also known as adverse selection. He calls this a secondary market for mobile user acquisition (SMMU) and continues to criticize by claiming that bigger companies who buy tens of thousands of users per day have significant advantage over smaller companies as they have much more information due to larger volume. For example some developers might find it difficult to distinguish bad user from badly performing app that does not monetize. Smaller companies must also usually rely on free virality based mechanics and only party on SMMU. (Seufert, 2012j)

2.6 Apple Appstore

Being noticed in the App store might be really hard for many developers as according to Apple there are approximately 15 000 new apps and updates submitted to its app review team each week. Having a great product is a must. It is not possible to fool players when the price for playing the game is zero. However, only having a great product is not enough. If Apple picks up the game as "Featured App" or into "New and Noteworthy" -section or as a "Staff favorite" can instantly boost downloads and sales greatly but there is no guarantee as these are all arbitrary pick by Apple employees. (Wooldridge and Schneider, 2011, p.2; Fiksu, 2012e)

According to Fiksu (2012e), being featured usually boosts sales with an organic uplift of a few thousand downloads. For established apps the lift might not be substantial but for smaller or newer apps this might be the matter of "life and death". There is also approximately 20 % uplift in the traffic during weekends with an emphasis on games. Fiksu (2012d) also claims that there is a possibility that weekend users are worth more as people have more time to concentrate on their iPads.

2.6.1 In-app purchases

Wooldridge and Schneider (2011, p.207-208) say that formerly, because of how the App Store had been set up, all the updates to once purchased app were required to be free. Unlike with traditional desktop software,it was impossible to charge customers

for an upgraded version. Game developers came around this by releasing updates, as completely separate apps. Users were fairly accustomed to this already since for example Xbox and Playstation consoles had been using this as standard procedure for years. However by releasing a completely new app with every update there was a risk that the app would not be noticed by enough users to become profitable as the App Store started to get flooded with games and the competition got fierce. By introducing in-app purchases Apple made many developers life easier. Inside an App there are several ways to sell content to the users. Apple has categorized these into four different types:

- **Non-replinishable** in-app purchases are items that are required to purchase once. As long as items are authorized to the same iTunes account those can be transferred across devices. Typically these are additional functionalities or additional content such as bonus game levels.

- **Replinishable** in-app purchases are items that can be used up and then purchased again multiple times. Good examples of replinishable items are weapon ammunition or virtual currency which can then be used to buy other advancements inside a game. Once the user has depleted the stock of ammunition that was purchased, it cannot be used again until the user buys more ammunition.

- **Subscriptions** are one-time services, which must be bought again after the subscription period ends (typically one month) in order to continue using it.

- **Auto-renewable subscriptions** can be purchased with different durations and are available within the same app on all devices associated with the users iTunes account. (Apple inc. 2013; Wooldridge and Schneider, 2011, p.212-215)

Wooldridge and Schneider (2011, p.222) continue that the app's core functionality will be the primary attraction that brings in new users. However it requires enticing

add-on content with a reasonable price that makes sense to the users for the in-app strategy to succeed.

2.6.2 In-app advertising

Many free "lite" versions of actual games that cost money monetize well with in-app advertisement. However advertisement UI should be carefully planned and usually best suited for not so intense casual games. As integrating advertising successfully into full-screen, immersive 3D games can be difficult. Therefore it is recommended to display advertisements during loading screens, which does not affect the game play itself. Wooldridge and Schneider (2011, p 159-161) also state that it is recommended to include advertisement right from the beginning as users will then accept the advertisements as price for free download. Implementing advertisement during the later stages of game's lifetime will upset many fans as they are already used to advertisement free game.

Schneider (2013) talks about negative effects of banner advertisement. He says that it is very annoying to the players if the normal game play is distracted and also crowds the already small UI. He also points out that the developer has little or no control at all over the content of the advertisements, which are shown in different countries. Because the advertisements are run through ad networks and these are often times blind. Another way to advertise inside an app is an offer wall. It can be customized to have a look and feel of the game. Basically offer wall is a wall full of offers that require some kind of interaction from the user and in return the user will get an incent (ingame currency). It can be used as banner advertisement to monetize users, which would not monetize by means of in-app purchase. Negative sides are that most offers require the user to insert credit card information, inventory can be limited depending on geography and some offers involve users engaging with other applications. Most offers are often for completely different types of products such as DirectTV and Netflix. Fields and Cotton (2011, p161-162) also point out that before 2011 there were many shady deals on offer walls which tricked users into enrolling in expensive cell-phone deals or to install piece of software that turned out to be difficult to uninstall. Thus, developers should treat these with caution, as Zynga and Facebook were drawn into several lawsuits because of using offer walls.

Schneider (year) also talks about the potential "next big thing" in in-app marketing. He calls this as Offline offers. How it works is that the users are required to enter their payment or credit card information to the game application in order to qualify for reward coming from an offline merchant such as Starbuck coffee. When the player uses the credit card in a real shop it is tracked back to the game application and the player receives a reward about the actual purchase in the shop. The information is transferred to the game almost instantly. This new technology broadens ways to advertise beyond online and uses the advantages of mobile devices in a new way that have not been possible before.

2.6.3 Analytics in Appstore

According to Wooldridge and Schneider (2011, p 201) during 2010, Apple revised its policy on in-app analytics, prohibiting apps from collecting and sending device-related data to third party analytics services. In-app analytics are still allowed but only if the transmitted data is directly relevant to in-app advertising or to use of the app. The only ones, which remained after the change in policy, were ones, which had in-app analytics SDKs.

2.7 Analytics and decision making

Seufert (2013) writes that the more there are data and users to measure the better results analytics will yield. Although he does not state that lesser amount of data would automatically produce false or worse results but rather is making decision-making and communication to management harder. Lesser amount of data will usually result in techniques "too complicated to be easily explained" in a presentation to management. He calls this as "black box argumentation". The more complicated it will get less likely its results are to influence decision-making. In other words when there are large volumes of data, which make it possible to conduct straightforward analyses, makes it much easier for the analyst person to be clearer and more convincing. In other words with less data the analyst person have to rely more on his personal presentation skills to be as convincing as with more data.

3 METHODOLOGY

Methodology chapter of this thesis will clarify the research methods used for this study. Methods used for collecting and analyzing the empirical data are explained in the following chapter.

3.1 Qualitative research method and case study

As Ghauri and Gronhaug (2010, p. 106 – 110) state, case study research is usually used when variables and concepts under study or outside the phenomenon are difficult to quantify. Case study is usually closely related to real-life phenomenon. Furthermore, a qualitative method gives information on how the phenomenon or "case" can be understood and why does it work in a specific way. It can be used to provide complicated details as well as critical views on business and its processes.

 This thesis uses exploratory as well as descriptive research design. Exploratory design is used to find out best practices and differentiate bad choices from good. Descriptive design is used to describe the practices and processes of the company. Both of them are used in order to aid the company to make its marketing and user acquiring process more effective. (Ghauri & Gronhaug, 2010 p. 55-57)

3.2 Collection of data

The Empirical part of this thesis consists of data gathered through interviews in three different companies: Grand Cru Games Oy, Grey Area Oy and Supercell Oy. All interviews were conducted as personal interviews. When choosing for persons to be interviewed close attention was paid on how person's work was related to mobile marketing. This was necessary to get the best possible firsthand information about marketing and user acquisition in before mentioned companies.

All interviewees got their questions through email before the actual interviews as Tuomi and Sarajärvi (2009, 73) suggested it would be beneficial information wise, if the interviewees would be able to familiarize oneself with the questions before hand. The interviews had been pre-configured for four themes, in addition to which the interviewees were asked to shortly describe their responsibilities inside the company.

All interviews were recorded with a digital recorder and transcribed from computer during the next day. The interviews lasted from 10 minutes to 45. Semi-structured interviews were used with mostly open-ended questions to enable the interviewees to answer more freely on the questions and also provide more details. The chosen method gave the interviewee as well as the researcher an option to ask further questions and clarify the meaning of a specific question if the interviewee was unsure of its meaning.

The interviews concentrated on subjects related to mobile marketing of free to play game. The subjects are:

- Free to play market, marketing analytics, user acquisition and tracking.

More specifically the interview questions dealt with following subjects:

- Background information

  o About the interviewee's responsibilities inside their company

- Free to play

  o Its effects on the gaming market

  o Ways to get information

- Marketing analytics

  o Most crucial metrics

  o Ways of getting information about the users

  o Ways of segmenting users

- User acquisition

  o Does the quantity affect quality

  o Do the marketers get enough information

  o Could there be ways to improve the process

    o   How to measure success

    o   Is it possible and is there a need to control your own ads

- Tracking

    o   Would it be possible to measure and track users who do not buy anything but some other way are creating content

    o   What would be the value of these kind of users

All the interviews were conducted in English as all the interviewees had different mother tongues, and English is also the main language in companies they represented.

3.3 Data analysis

As Eskola and Suoranta (1998, p 174-175) state, themes are tools to identify similarities and classify findings and data to reduce the amount of data. The purpose of themes is to identify essential subjects, which belong to the research problem. The purpose of data analysis is to clarify problems, gain insights and better understanding of the collected data. To create a better understanding of the phenomenon, data reduction is used for simplifying and selecting relevant information from the collected data. (Ghauri and Gronhaug, 2010 p. 199-200)

Before the interviews, all questions were themed according to field of subject. This helped to transcribe and analyze the data later on. After transcription all the data was analyzed by theme and question. Going through the data by question enabled to easily compare answers and derive insights. After that all answers of the interviewees were compared to existing literature and theories. Finally both sources: interviews and existing literature were used to make conclusions.

4 RESULTS

The main objective of this research work was to find out, what kind of metrics are needed to make good marketing decisions and how to acquire the needed data and which things might affect the quality of that data. The starting point for this research was Grand Cru Oy but to get better insight and for broader point of view also professionals from Grey area Oy and Supercell Oy were interviewed.

4.1 Free to play

It became very clear that free to play has changed the market in many ways. As one interviewee stated *"You don't really release a game any more, you release it like a service and then you continue to maintain that service for years depending on the success of the game"* (I1). The big data is driving games to be free as more data makes it easier to monetize the game better for those users who are willing to pay. The users are also accustomed to this as one interviewee pointed out *"now people expect the game to be free"* (I1). The barrier to enter the market has also been lowered as console game traditionally required budgets of millions of dollars. *"Companies like Rovio and Supercell along bunch of others started out small. It is much more scalable from business and organization perspective"* (I3). As companies do not necessarily need huge start up investments, like console games, it is less risky for them and also the money stream is being spread more evenly through out the whole product lifetime.

To get enough information about the App Store market most interviewees were relying on third party services such as App Annie, which is basically a search engine that archives all the rankings for all the applications over time. In the words of one interviewee: *"One of the interesting things I'm checking is the difference between top grossing rank and general download rank. The bigger the difference between those two ranks is, the higher the ARPU of that game is. If the game has few downloads but is on top grossing list it means that the game was designed to monetize very well"*(I1) He also pointed out that games like King.com's candy cross saga, which is high on the download rankings, are just basically buying all the users and thus generating not as good revenue as those which are not buying their users. Howeve,r one problem on acquiring data about the App Market seems to be that Apple does not release any data concerning it's Apps Store. That is why everyone is relying on third party companies, which estimate and calculate the data they can get through observation and by collect-

ing information some game companies are releasing about their own rankings. *"It is mostly informal information like reading blogs but no one really knows for sure except Apple"* (I3) As another interviewee also points out *"When ever you get a little tip of information you kind of try to make a note and apply that"*(I1) he then uses an example of supercell *"When Supercell said they are making 1,4 million last week, they got two games that are in top grossing, one is number two and one is number five and then you have to use your imagination"*. This also clarifies another problem, which is that unless you don't have your own game on the top ranks you just have to guess the numbers, which leaves a lot of space for mistakes. On the other hand one interviewee noted: *"App Store rankings could be a little bit more transparent but overall things are good"* (I3). Also Google, with their Google Play store are being a little bit more open with numbers than Apple is.

To get information about the user acquisition market there seems to be couple of different ways depending on the interviewee. *"I simply just test different advertising partners out there and then I am measuring who is giving out the best ROI and who gives us the best CPI versus LTV, is the one that we will continue with"*(I2) as another interviewee relied more on contacts and talking to a people. However it became clear that there is not much of public data released and another problem for smaller companies is that on mobile there is usually a minimum campaign budget of around 1000 dollars, which makes testing different ad networks by paying usually too expensive to do. However as one interviewee pointed out the price of an advertising bid does not change over time drastically unless there is a holiday or a big publisher is launching a game with a big budget. *"Usually 1.5 to 2 dollars is a good general price point and that increases during holidays or when a big publisher releases a game"* (I1). In general the market has changed a lot during the last 10 years. *"You could find an ad network that out performs others by 500 % but it is getting rarer and soon is going to be impossible but of course there will always be fluctuations"* (I3)

4.2 Marketing analytics

All of the interviewees are using the same metrics for user acquisition and marketing purposes but every one is emphasizing different things. As interviewee number one said: *"They are all useful but retention is the biggest one as it gives you general understanding on how good your game is and in addition to that cost per install is im-*

portant". Another interviewee agreed on same metrics but is looking them from slightly different angle: *"There are two metrics which are most important: cost per install and another one being lifetime value. There are also retention and daily average per user but lifetime value is a function of retention and daily average per user so at the end it does not really matter"*. Most important metrics for marketing are LTV and CPI but ultimately everything comes down to return of an investment. *"You can work ROI in two levels; either you get cheaper users or you get more money per user. These are both tied in and good companies do both"* (I3). Then there is also volume; scale, which helps to make decisions. One interviewee also pointed out metrics like DAU, DMU, Average purchase price, ARPDAU and ARPPU, which help to understand the performance of the game itself but are not that important for marketing purposes.

On mobile it seems that measuring virality is an issue. It used to be easier on desktop PC during time when Zynga was on the top lists. However as tracking on mobile is harder one interviewee pointed out that they are using estimations and guesses to calculate k-factor. *"There is no perfect way to calculate k-factor but one decent way is to take the number of purchased downloads on any given day, adding some estimate on how many people download the game without having ever heard of it before and then consider everything else to be viral install"(I1)*. Another interviewee said that k-factor is possible to track and calculate but that is not something they do or take into consideration when planning their user acquisition efforts.

There are few ways to gain information about users demographics but that is not considered as relevant information as user behavioral information, which is gained when users are playing the game itself. One way to get information about the players is when they login to the game through Facebook connect but it seems that it is only a small portion of users that do so. *"If someone connects from Facebook that is great but it is not even close to 100 %. I think in most games it is something like 10 to 15 %"* (I1) although this is somewhat controversial as another interviewee said: *"Wooga has 60 % of their players on iPhone and iPad using Facebook connect"* (I3). Some information can be also gained when a player is connected to game center, which is Apple's own service but that is usually optional. Asking the data from users themselves is not an option as making a user fill out a form of some sort before entering the game would just make most of the players quit.

However, as users' demographics are not considered important, it is common to segment users by behavioral metrics. It is very common to segment users to groups of non-paying and paying. *"I'm primarily looking who are the players spending most money and when do they do it, also what markets do they come from and what device do they have"*(I3). Another interviewee said: *"Segmenting users by how much money they spend is pretty easy; whales are those who spend the most and then come dolphins and so on. I like to break whales into multiple of levels because I feel like mega-whales who spend 5000 dollars are so rare"* (I1). In addition to monetization segmentation, engagement is also used as segmentation metric. One interviewee said that he usually segments users to groups who for example play daily, once a week or twice a month. *"Even users who do not spend a lot of money they still have value as they might tell their friends about the game and so on"* (I1).

4.3 User acquisition

When asked whether the quantity of users would affect the quality of whole user acquisition campaign, interviewees gave different answers. As one interviewee said it does not necessarily affect the quality, another one said it does. There is minimum price for ad networks and with a small patch of users you might just end up getting no whales at all. However the best way to acquire users would be just by spreading the marketing money across as many ad networks that are not aggregated as possible. *"If you run the campaign in just one network and do not have money to run it on multiple of networks because they have their minimums, then you run the risk of just getting a bad patch of users"* (I1). However interviewee number three pointed out that analyzing the data in a proper way will help in driving better results, as you can ask the ad network to target more users of certain kind that monetize well. However that does not matter if the company is spending a lot of money across the ad networks. *"You can have relatively good marketing campaign with smaller budget but it depends on a game as well. If you do a super casual game like Angry Birds it is going to be though"*(I3).

As Apple forbids tracking of users into App Store it makes it difficult to get enough information about which users come from which network. However it does not make user acquisition impossible but more information would make things easier. There are also new companies coming to market, who use sophisticated solutions to track ad

clicks and installs. These are still in fairly early stages of development and therefore are not yet 100 % correct. There are also big differences between ad networks and how they give out information. *"Some ad networks take forever to give you the data and some basically have no data at all. Some will only allow you to do it online (see the data) and you have to send them spreadsheets. Would be cool if they had better systems"* (I1). One interviewee added that Apple could do very simple changes to their systems and dramatically improve the work of mobile marketers, without sharing any unique information related to the user (I3).

One of the interviewees said that most of the advertising networks do not let game companies control to whom and in which games their advertisements are being showed to, then pointing out that if you use a lot of money you can also make bigger demands on the control side (I1). One interviewee also said that some ad networks allow you to either white list or black list certain game publishers. White listing means selecting only certain game publishers who can run your advertisements inside their games and black listing means leaving out certain unwanted game publishers but still showing the ads in other publishers games. *"If you white list, then you will just get very limited amount of installs and since we focus on getting volume that is not something we do"* (I2). Contradictory one interviewee said: *"Sure, you can have control over your advertisement. Many networks offer this, like Chartboost. We cannot really target specific kind of users but companies like Fiksu and Flurry try to do it. They make assumptions based on user behavior. However, I do not think those assumptions are very accurate"* (I3).

To measure the success of a user acquisition campaign one interviewee pointed out the use of lifetime customer value. Basically the acquiring campaign should generate more revenue than what was used into it. However there are multiple of ways to calculate LCV and it is hard to get perfect. *"LCV is kind of controversial to calculate in most companies. No one really agrees on how it should be calculated. You can do 30-day revenue or 10-day or something else"* (I1). One of the interviewees said the same: *"I look at ROI, was the campaign profitable or not"* (I3). However he also added that if the campaign itself was not profitable there is still a possibility for it to become profitable later on with help of organics it might drive.

4.4 Tracking

As discussed before, it became clear that Apple prevents tracking of users to their App Store and is also preventing the use of UDID, which is now being the standard way of tracking users. When asked about way to track and segment "deeper lifetime value" of users, all interviewees agreed that it is traceable but becomes harder when going outside of the game. Deeper lifetime value of a user was explained to them as a user who does not buy anything inside the game but rather creates content or fan page and thus becomes part of the engaging game experience to many other players. *"The more of the networks, the users are interacting with, you control the easier it is"* (I3). Tracking is easier when players can be linked for example between the game itself and game's website forum but becomes impossible when users go out from networks, which are controlled by the company. Another interviewee said that deeper LTV is traceable but it is not something that they do or take into consideration when they are planning their marketing efforts (I2).

When asked on how they would segment these users in comparison to paying users and users who do not create any additional content, they had same kind of opinions. Number one segment will always be those players who pay but then there seemed to be lot of different users who do not play with different values. *"You can look at users who do not spend any money and see if they are power players, content creators or for example super viral players who have lot's of friends"* (I3). Another interviewee said: *"Non-paying users represent a user base that allows paying users to play the game. I think in that sense they provide value. I also feel that every user represents a potential ́net ́ to catch another user. So forcing them out trough showing them ads is not what I feel like a revenue optimizing strategy"* (I1). One opinion was also that by putting monetary value on sharing will make it possible to calculate LTV based on sharing in viral activity but it is more connected to k-factor.

5 CONCLUSIONS

The main objective was to find out what kind of metrics are needed to make good marketing decisions and sub-objectives were to find out how to acquire the needed data and which things might affect the quality of that data.

With marketing metrics is seems that marketers background and responsibilities inside the company affect, which metrics they are looking. All of the interviewees were using the same metrics but in a different way. However clear conclusions can be made that retention is very important for seeing how well the game itself is performing. LTV is important because it is needed to know how much can be used on user acquisition (CPI). Then there are lots of other metrics such as DAU, MAU, ARPU, ARPPU and ARPDAU, which provide information that will help making decisions. But ultimately when measuring a success of a marketing campaign it is return of investment that every one is using. It also became clear that there are multiple of ways to calculate LTV and it is hard to do particularly in free to play games as it can change over time and many users conduct multiple of purchases over their lifetime in the game, which forces analysts to derive prediction based on earlier behavior data. It must be also noted that some of the interviewees looked deeper into analytics depending on their responsibilities inside the company. This is most likely because bigger companies have more people working on the same matter and the workload can be divided where as in smaller companies marketers had more responsibilities. However in order to make good marketing decisions all of the before mentioned metrics provide valuable information along with information about the markets, both user acquisition and App Store, which can be gained through personal contacts and companies such as App Annie or simply by testing different ad networks. But to achieve best results it requires careful planning and using of multiple information sources.

iOS, and the whole ecosystem around it, is Apple's playground. They control and regulate it as they please. Sometimes they also make changes to the rules with short notice and every developer just has to adapt to the new rules. It makes the industry in general challenging. As some of the interviewees stated Apple could change the field dramatically by just releasing more information but Apple has its own goals and as long as releasing more information does not drive them towards those they are not going to do so. However this has created a whole ecosystem of new companies who try

to develop new technology and methods to provide the information Apple is not sharing.

In general to acquire the needed data many marketers on mobile side are relying on assumptions and guesses derived from small hints of data other companies on the top lists are sometimes releasing. I do not see any progression happening on this area anytime soon and so far these assumptions are close enough to be used in calculations. However it is good to keep in mind that these are rarely exact numbers and mistakes do happen.

Ad networks are facing the same problems as developers are but as Seufert (2012i) said in his blog post: the sellers of users are benefiting more from lack of information than buyers are. However, better tools are being developed and some ad networks offer better services than others. One finding was also that they provide bigger companies with better options on what comes to data and controlling their own ads. This makes the whole user acquisition market somewhat unfair to smaller companies who are having hard time already with their small budgets. Also minimum campaign prices as high as 1000 dollars are preventing many companies from testing which network would suit them best. Thus, contacts of a marketer in a company who utilizes with small budget will be much more valuable in gaining information than in a company who has lot of money to spread across ad networks.

The user acquisition market on mobile is still a developing one. Currently many ad networks provide very basic tools but hopefully this will change in the future. Many traking related things on desktop PC are easier as it is not so limited. On iOS Apple is forcing everyone out of using UDID this will cause some headache to marketers around the industry. Some ad networks have developed their own ways of tracking but those provide only little or no help, as the information is not compatible with other ad networks. Apple's goal is most likely to drive everybody to use their new advertising identifier but so far that has not happened. Probably there will be a short transition time, when there can be multiple of solutions on the market but eventually things will settle down. All those above mentioned reasons are, what I believe, main factors affecting the quality of data gained.

Free to play business model has changed the gaming industry a lot. It has made business less risky and easier for smaller companies, as it is possible to start a company

and succeed without a budget of millions of dollars. Thus, recent success stories has caused "gold rush" of some sort to the market and competition has become fierce. The huge amount of games on the market has made the situation go worse with discoverability in digital shops. That has been a problem before and is becoming worse with every new submission. Big companies go around this by buying huge amounts of users from ad networks, which then send them straight onto top lists but small companies with small budgets are having trouble. Free to play has also made the revenues to spread more evenly through out the whole lifetime of the product, which makes the operation of a company little more easier as it has became easier to predict revenues. Free to play and fierce competition has also changed users expectations on how much a game can cost. As one interviewee pointed out, now people are expecting the game to be free (I1).

The product itself has also changed as free to play developers are more of developing a service than a just a game. But still the customers or users are those who benefit most from the situation. As games are free to play, they cannot be fooled with a bad product. The game must be good enough to keep the players entertained so that they think it is worth their time and money. In general there are still a lot of problems to be solved, as typical day one retention numbers on mobile are around 50 % and when running a user acquisition campaign all metrics drop. This indicates problems with targeting the right audience and the quality of acquired users in general. Also typically 80 to 95 % of the players are not paying, which will keep marketers busy in finding solutions on how to monetize them. However, this is more of a development issue and also related to the type of the game, as on desktop PC there have been seen conversion rates as high as 30 %. (Brown, 2012) However it should also be noted that without non-paying users there would not be paying users either. Both are valuable and both are needed. Trying to monetize non-paying users by showing them ads might not be the best way to do it as they might leave the game, although this method has proven to be suitable for extremely casual games such as Solitaire or Angry Birds.

5.1 Managerial implications

The basis of everything is a good product. The game itself must be tested and adjusted with the data gained through users who play the game. Because of free to play model it is not possible to turn the game profitable by marketing efforts if the product itself

fails to satisfy players. Careful planning and A/B testing on different game mechanics should be carried out to ensure the best performance of the game. Along with A/B testing I would recommend running a user acquisition campaign to ensure getting enough data. If the marketing budget enables to run a campaign on multiple of ad networks I would recommend doing so to find out which network produces best results for this particular game. Also setting up community pages, for example discussion forum, for players to interact with the company itself as well as with other players would be preferred as also tracking from game to the community pages could be tested. Whether Everyplay will become a big player in boosting virality in mobile games remains to be seen but I would recommend also implementing and testing of it as it helps players to share content.

On user acquisition I would recommend the use of non-incentivized users, as they seem to perform better. Testing of different advertising banners and videos is also recommended, as the advertisements should pass on right kind of message to drive users who will get engaged. Finding out behavioral and demographic data about average user could help in targeting specific kind of users when planning acquisition campaigns.

5.2 Further research and development

Because of time and resources it was not possible to go deeper into systems other than iOS. For example Google's Android and Steam on desktop PC both operate in slightly different manner and they have different rules than what iOS has. Also with more time there could have been more companies involved and more interviews but because of tight schedule there was no time. It would have been interesting to know how Rovio for example is doing their marketing in comparison with smaller companies. Also a viewpoint of some of the professionals working at ad network companies such as Fiksu, Flurry or Chartboost would have brought more insight to the whole user acquisition process.

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