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Market Analysis on Virtual Reality Games in Finland

Case Vivendi

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Opinnäytetyön toimeksiantaja on ranskalainen media-alan yhtiö Vivendi, joka toimii erityisesti musiikki-, elokuva- ja televisio-aloilla. Viime aikoina yhtiö on alkanut kehittää investoinneilla videopelien toimialaansa investoimalla kahteen videopeliyritykseen. Perinpohjainen analyysi videopelialan uusimmista isosta jutusta, virtuaalitodellisuudesta on tarpeen Vivendin suunnitellessa lisäinvestointeja. Erityisesti Suomi videopelien ja korkean teknologian maana saattaa olla juuri oikeanlainen maa tällaiselle uudelle teknologialle. Virtuaalitodellisuus on hyvin potentiaalinen, mutta samalla epävarma ala. Se vuoksi, suurimmat riskit ja mahdollisuudet Suomessa ja globaalisti analysoidaan tässä opinnäytetyössä.

Teoriaosuus sisältää viisi erilaista markkina-analyysin menetelmää, jotka antavat pohjan empiriaosuudelle. Teoriassa käydään läpi yleistä tietoa jota tarvitaan toimialan, ympäristön, kilpailijoiden ja asiakkaiden analysoinnissa, sekä SWOT-analyysissä. Teorian jälkeen käydään läpi tutkimusmenetelmät, kuten asiakasanalyysissä käytettävä kyselylomake ja toimialan analysoinnin apuna käytettävä haastattelu. Kyselylomakkeella saadaan tarkempi ymmärrys kuluttajien mielipiteistä, odotuksista ja toiveista. Haastattelu toimii toimiala-analyysin tukena, antaen siihen tarkempaa näkökulmaa.

Empiriaosuudessa käsitellään teoriassa läpikäydyt analyysit soveltamalla niitä Suomen videopeli- ja virtuaalitodellisuusmarkkinoihin sekä liiketoimintaympäristöön. Empirian tuloksissa huomataan monia virtuaalitodellisuuden riskejä, kuten liian korkeat hinnat, virtuaalitodellisuuslasien aiheuttama pahoinvointi, vähäinen pelien määrä sekä kuluttajien ja yritysten asenteet. Kuitenkin, esimerkiksi virtuaalitodellisuuden monipuoliset käyttötavat, uutuudenviehätys, laitteiden kehittyneisyys ja erikoisuus tuovat valtavasti potentiaalia. Virtuaalitodellisuus on alkutekijöissään vielä todella riskialtis, mutta siihen investointi saattaa tuoda mahtavia uusia mahdollisuuksia caseyritykselle.

Avainsanat	virtuaalitodellisuus, virtuaalitodellisuuspelit, videopelit, korkea teknologia, markkina-analyysi.

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ABSTRACT

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The case company of this thesis is Vivendi, a French mass media company specialized in music, movies and the television industry. Recently, the company has started to develop their video games field by investing in two video game companies. A thorough analysis on the newest big thing of video game industry, virtual reality, is needed when Vivendi is planning to do more investments. Especially Finland as a country of video games and high technology could be just the right kind of a place for this new technology. Virtual reality is a very potential, but at the same time a very risky field. Therefore, the biggest risks and possibilities in Finland and globally were analyzed in this thesis.

The theoretical study includes five different market analysis methods, which give basis for the empiric part. The theory goes through general knowledge which is needed when analyzing the industry, the environment, the competitors, the customers and factors concerning the SWOT analysis. After the theory, the thesis goes through research methods such as the questionnaire used in the customer analysis and the interview used to help with the industry analysis. The questionnaire gives more thorough idea of the consumers' opinions, expectations and hopes. The interview supports the industry analysis by giving it a more specific point of view.

The empiric study explains the methods used in the theory, by applying them to the Finnish videogames and the virtual reality games markets and the business environment. In the results, it was noticed that there are many risks for virtual reality, such as too high prices, the motion sickness caused by the headsets, the low number of games and the attitudes of consumers and companies. However, diverse ways to use virtual reality, the novelty, the highly developed products and the uniqueness are examples of things that bring a huge amount of potential to virtual reality. Virtual reality has quite recently taken its first steps and it is a very risky field, but investing in it might bring some amazing opportunities for the case company.

Keywords: virtual reality, virtual reality games, VR, video games, high tech, market analysis

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1 INTRODUCTION

Virtual reality is something that is strange and unknown to some and this amazing, revolutionary technology to someone else. It is something that was created years and years ago, but never really made it to anything big. After enormous amount of technological improvements, a lot of time and efforts and investments of individuals and companies, virtual reality can finally do what it promised years ago. It could be something that could not only revolutionize the gaming industry but make it part of our everyday life by creating another kind of reality with amazing experiences.

This is at least virtual reality's promise and this is what the current virtual reality "hype" has been about. Fulfilling the promise will likely take many years, if it will ever even happen. There are big risks to consider and it is still a bit of a mystery whether consumers are even interested in something that is experienced through high tech glasses in their face. That is also what virtual reality is about: experiencing 360 degree images, videos, games and experiences through glasses that will create this immersive feeling that might make you either say "wow!" or feel nauseated, because of motion sickness. These glasses, most commonly known as headsets, are connected either to a PC, a game console or a mobile phone. With some headsets like Oculus Rift and HTC Vive, it is possible to interact with the virtual reality environment which makes the whole experience feel more real.

Especially the gaming industry has globally hyped about virtual reality, as it creates many new possibilities for games and virtual reality seems a perfect fit for games. Recently also other industries have realized new ways to use this technology and, for example, military has used virtual reality through flight simulations for years now. Since the gaming industry in Finland is a really big thing that also has had great successes in the past years, it is interesting to know if virtual reality games could be a success in Finland as well.

The case company Vivendi is a multinational mass media company which is headquartered in Paris, France. They are concentrating on music, television and the film –sectors mostly, but they have a big history with video games as well.

Vivendi has sold its stakes on big game companies (like Activision) in the previous years, but recently they bought stakes on video games companies like Ubisoft and Gameloft. Ubisoft is known from its willingness to take chances, and currently it is one of the forerunner companies that are making proper virtual reality games (Morris 2015). It seems that Vivendi wants to get back into the video game business. Since virtual reality is clearly the next big thing in the gaming industry, but very risky as well, a proper analysis is in order.

Using different market analysis methods, the virtual reality games industry in Finland and globally is being researched thoroughly by using not only the internet and book sources, but a questionnaire and an interview as well. There are several different factors to consider both in virtual reality and in the business environment in Finland, but most of the challenges come from virtual reality. The high prices of virtual reality equipment, the low amount of good content, different headsets, comfort of the headsets, behavioral challenges and the problem of virtual reality awareness are examples of challenges that Vivendi or any another company could face if they decide to invest in virtual reality.

1.1 Research Problem and Objectives

The aim of this thesis is to find out the current state and the potential of virtual reality games –industry in Finland. This is done in order to find out if there are opportunities to invest in virtual reality now or in the future. However, too much focus on only the Finnish market is avoided, since virtual reality is a very global industry right now, and the importance of virtual reality and its success depends highly on the industry's situation globally.

Virtual reality –industry has recently woken up and many are wondering if it is going to be a success or not. There are great risks to consider, but also big opportunities. Therefore, in this thesis the aim is to find out exactly what the opportunities and challenges that the case company might face are if they decide to enter the virtual reality –industry. Is the virtual reality market in Finland attractive? Does virtual reality have a future? Another aim of the thesis is to find out what the ex-

pectations, concerns and opinions of Finnish consumers concerning virtual reality games are.

The research problem is divided into three smaller categories:

1. What are the opportunities and challenges of virtual reality games - industry in Finland?
2. What are the opportunities and challenges for virtual reality in general?
3. What are the expectations, opinions and hopes of Finnish video game players concerning virtual reality games?

1.2 Structure of the Study

This thesis is divided into seven bigger sections. The study starts with an introduction of the thesis and then continues to explain the basics and the history of virtual reality. The information about virtual reality is done on a general level, and deeper research is left out in this section. After that, the case company is presented and the study takes a deeper look at the video games –area in the company. The fourth section includes the theoretical framework of the study, as it presents different types of analyses that will be used in this study. After that, the research methodology of the thesis will be explained as well as the structure for the questionnaire used.

The empirical part of the study in chapter six is about researching the Finnish market with the help of the different analyses mentioned in the theory. In order to gain a deeper image of the Finnish market, each section of the market analysis is analyzed individually and thoroughly. This is done so that information can be found beyond the general viewpoint and therefore, the thesis gives more value.

The last part (chapter 7) is about the conclusions of the thesis. It includes a summary and evaluation of the thesis, reliability and validity of the research methods and recommendations for the case company and for future research.

2 WHAT IS VIRTUAL REALITY?

Virtual reality, also called VR, has been an on-off topic for years now. Many different organisations have already used virtual reality technology in diverse ways. Military has used the technology for war simulations and healthcare has been using it for medical training and education. (Robertson & Zelenko 2016) But what is it exactly? Simply said, virtual reality is a three-dimensional, computer generated environment that a viewer can interact with and therefore, become a part of the virtual world (Virtual Reality Site 2015). The goal of virtual reality is to produce a quality experience of the magnitude, that a viewer feels like it is almost real. This lifelike feeling is done by using a combination of optics, head tracking and headphones. Head tracking allows the viewer to look around in the virtual environment and possibly move within it. (Kuchera 2016)

Virtual reality is experienced through virtual reality glasses, which are most commonly referred to as "**headsets**". A virtual reality or VR headset in some cases includes only the glasses, and in other cases it includes both the glasses and headphones.

Virtual reality is not a new thing. Its history goes back to the 1950s and 1960s when the first 3D experience was invented by filmmaker Mort Heilig. His invention called *Sensorama* was an arcade-style cabinet which had a 3D display, a seat that vibrated, and a scent producer. After that, several other inventions such as flight simulators, 3D headsets and wired gloves with movement and location tracking were invented. Some stayed interested about virtual reality, while others focused on the development of television and later, the internet. (Robertson & Zelenko 2016) The early 1990's was a popular time for VR arcade games through a leadership of a company called Virtuality. Expectations towards VR games were high and when the expectations were not met, partly because technology was not developed enough, people lost their interest. That is how 1990's VR boom ended. (Fowle 2015)

However, the possibilities of virtual reality technology have remained huge. In 2012, through the project of virtual reality glasses/headset called Oculus Rift vir-

tual reality became a hot topic again and opened new possibilities for the video game -industry. (Robertson & Zelenko 2016) One reason why Oculus Rift was suddenly so big thing was that Facebook bought Oculus for 2 billion dollars, which signaled an unclear but promising future for virtual reality (Schnipper 2016).

The final version of the Oculus Rift headset was released on March 2016 and a couple of other VR headsets, for example HTC Vive, Samsung Gear VR and PlayStation VR are released in the same year. This is one of the reasons why many video game enthusiasts have highlighted the importance of the year 2016 in timeline of virtual reality. Virtual reality has a lot of expectations for success, but like any other thing in the world, it can also fail despite of all the promises. (Robertson & Zelenko 2016) However, what has changed after the 1990's virtual reality flop is technology. People have still high expectations, but now there is a bigger chance that the expectations will be met (Weinberger 2016).

3 CASE COMPANY VIVENDI

3.1 General Information about the Case Company

Vivendi is a big mass media company producing, creating and distributing content for digital entertainment. The company is headquartered in Paris, France, but Vivendi is working everywhere in the world. Vivendi owns for example the French leader in pay-TV: Canal+ Group, a world leader in music: Universal Music Group and Dailymotion, which is one of the biggest distribution and aggregation platforms in the world. The two key persons of Vivendi are CEO and Chairman of the Management, Mr. Arnaud de Puyfontaine and Mr. Vincent Bolloré, who operates as CEO and Chairman of the Supervisory Boards. (Vivendi 2016)

The company's history goes back to 1853 when a French water supplier Compagnie Générale des Eaux started operating. Water supplying later changed to several different businesses such as environmental services, energy, transport, communications, construction and property. In 1983 together with Havas, Canal+ was created and launched a year later. Already in 1990 the company had 173,000 employees and 1,600 subsidiaries after successful expansion and internationalization. In 1998, the company wanted to get rid of its name that linked them to the water business and as a result, the name was changed to Vivendi. After this, Vivendi had two main divisions, communications and environment. (Vivendi 2013)

In 2015 Vivendi's revenue was 10.762 billion euros and most of their revenue came from Universal Music Group (5.1 billion) and Canal+ Group (5.5 billion). The total income was a bit over 1 billion. At the end of 2015, the company had 16 395 employees. Vivendi's turnover has decreased from 2010-2012 when the annual turnover was around 29 billion, and they also had a lot more employees then. These numbers tell about how big the company really is and has been. The year 2015 has been a year of changes for the company, as they acquired a 90% interest in Dailymotion and stakes in two video games companies, named Gameloft and Ubisoft. (Vivendi Annual Report 2015, 3-9)

3.2 Video Games -part in the Company

Vivendi has a complex history with video games. In 2008 the company bought a majority of Activision Blizzard (previously called Activision). Activision Blizzard is a successful video games publishing company owning video game franchises such as StarCraft, Call of Duty and World of Warcraft. However, in October 2013 Vivendi sold over 85% of its stake in Activision Blizzard and later in January 2016 it sold the remaining stakes for 1.1 billion US$. After selling its stakes in Activision Blizzard, Vivendi continued its plan to focus on digital media distribution and content. (Serafino 2016)

However, in October 2015, Vivendi purchased shares in two video games publishers: Ubisoft and Gameloft. From the Assassin's Greed and Far Cry maker Ubisoft Vivendi bought a 6.6% stake for 140 million euros and from Gameloft Vivendi bought a 6.2% stake for 20 million euros. Both of the two companies expressed an intention to remain independent. At the end of year 2015 Vivendi grew its Ubisoft equity to 15.90% and Gameloft's to 29.86%. According to the company's annual report, these investments are part of their plan to develop their other creative industries, especially the video game industry. (Vivendi Annual Report 2015, 3-7) Today, Vivendi owns 17.73% of Ubisoft's shares and 15.66% of the voting rights. According to several different websites, it seems that Vivendi is trying to take over Ubisoft in a hostile way, but the company denies the claims. (Brightman 2016)

What's interesting about Ubisoft is that they are publishing a variety of virtual reality games in 2016, and they have plans to continue with virtual reality as well. According to the company, they believe in VR and want to take advantage of it in order to make their games more immersive. The company is aware that virtual reality is a potential, but a very risky field and that is why they try to make sure that the company does not suffer if VR does not succeed. They are providing several different virtual reality games this year and in the future, as they believe that VR will bring more players to the video games industry. (Purslow 2015)

4 THEORETICAL BASIS FOR MARKET ANALYSIS

The fourth section of the thesis forms the basis for the empirical study, as it goes through the theory that is relevant in order to perform a thorough research. When building a business strategy for a company or just hoping to get a more thorough idea of the dynamics of a market, market analysis is a useful tool. It gives a company a broad view of the current market situation, highly concentrating on customers and competitors. Therefore, the primary objectives for a market analysis could be, for example, a chance to assess the prospects of a market for participants or a chance to understand the market dynamics. Things that are most often included in market analysis are factors such as actual and potential market size, market growth, market profitability, cost structure, distribution systems, trends and developments and key success factors. Short-term and long-term forecasts are made based on the data found. In order to make a fully functional marketing strategy, it is important to understand the market more thoroughly. (Proctor 2000, 82-83)

In order to do a thorough market research, several different analyses are being discussed in the following sections on a general level. Industry and environmental analyses forms the basis for micro and macro environments. After that, the theoretical part moves to information about competitor and customer analyses. The last part is about SWOT analysis, which goes a bit deeper to strengths, weaknesses, opportunities and threats.

4.1 Industry Analysis

An industry is defined as the collection of competitors that produces similar or substitute products or services to a defined market. Industry analysis is a market assessment tool which provides an idea of a certain industry's current state. (Duff 2016) It involves analyzing the political, economic and market factors that influence the way the industry develops (Business Dictionary 2016).

When analyzing an industry, three major categories have to be considered. The first category is size and sales patterns, which describe the basics of an industry. It is important to consider both the actual and the potential market size (Proctor

2000, 84). In the second category, competition, market growth and profit situations are analyzed and in the last section, general environmental influences are focused on. The analyzing starts with gathering and interpreting the past and current data and after that, projections are made. If there is a certain situation in the industry right now, what will it be in a couple of years? This will help the company to see the possibility of achieving a desired level of return on its investment. (Lehmann & Winer 2002, 43)

Industry analysis is also known as Porter's Five Forces Analysis. The previously mentioned category two and three are focused more deeply in the following paragraphs. The five forces of the industry analysis are industry rivalry, threat of substitutes, bargaining power of buyers, bargaining power of suppliers and barriers to entry. They mainly focus on competitive factors. (Porter 1998, 3-5)

The first force, an industry's rivalry can tell something about the attractiveness of a market. If the amount of competition is high, activities such as price wars, escalated marketing expenditures and employee raids can be common. This of course makes the market more challenging. In an industry analysis, it might be good to try to predict whether industry's current competitors are likely to stay in the area or the market, and whether other new competitors are likely to enter the market. (Lehmann & Winer 2002, 47-51)

Threat of substitutes is referring to the number of companies that sell the same kind of a product that the company is selling. If there is a large number of substitutes, the market is less attractive and more challenging. Almost all industries have a high number of substitutes. (Lehmann & Winer 2002, 47-51)

The third force of Porter's Analysis is bargaining power of buyers. A high number of powerful buyers reduces the potential of a profit in an industry. This is because buyers could increase competition by forcing down prices, bargaining for improved quality or more services, and making competitors to act against each other. The bargaining power of suppliers is more or less the mirror image of the previous one. High supplier power allows a supplier to dictate price and other terms such as delivery dates to the buying industry. If the company cannot recoup, for example,

cost increases in their prices, the result is reduced profitability. This, of course, is not an attractive situation for the company either. (Porter 1998, 24-27)

The last force is barriers to entry. These barriers are things that prevent the company to enter specific market and they act as a deterrent against new competitors. A barrier most likely is about one (or more) of the above mentioned forces. The forces determine the intensity of the competition in an industry and therefore, the attractiveness of the industry. (Porter 1998, 24-27)

As a summary from the above mentioned facts, can be said that an industry is likely attractive, if it is large, profitable, growing, and noncompetitive. However, the same industry can be attractive for one company but unattractive for another (Porter 1998, 24-27). With the help of Porter's five forces, industry analysis can try to predict the future profits and growth of the industry and also determine the major threats and opportunities in order to see the attractiveness of the market (Lehmann & Winer 2002, 42).

4.2 Environmental Analysis

Environmental analysis is a strategic tool that identifies all the internal and external elements affecting an organization's performance. The most common way to analyze the environment is through a PESTEL analysis, and often companies choose to do only the PEST analysis. This is also what is done in this analysis, because it serves better the purposes of this thesis. PEST is a part of PESTEL analysis, but without the L and the E, which stand for legal and environmental factors. Therefore, in PEST analysis the following factors are analyzed: political (P), economic (E), social (S) and technological (T) factors. All these factors will be explained one by one in the following paragraphs, as they all have an important role when evaluating and identifying the environmental factors affecting the business. (Pestleanalysis 2015 a)

First, political factors will be analyzed based on the country's current political condition. It is advisable to consider the effects of global political situation on the country and business. Examples of the factors that could be analyzed are: taxes,

laws and tariff, government policies, stability of government and entry mode regulations. To get an idea of a country's economic situation, all the determinants of the economy and its state are being identified and evaluated. With the help of the economic factors, a company can try to predict the direction in which the economy might move in the future. This might help the company to predict, for example, the future profits or losses and with the help of that information, unwanted situations can be avoided. This means that strategies that are in line with upcoming changes can be build. Some determinants that could be analyzed are, for example, the inflation rate, the interest rate, credit accessibility, disposable income of buyers, the rate of unemployment, the foreign exchange rate and the monetary or fiscal policies. (Pestleanalysis 2015 a)

Since each country is different, it is important to know the mindset of the target country, in order to avoid mistakes concerning social factors. These factors affect not only to consumer's home life and ways of thinking, but also to the way the business works and to what kind of attitudes drive the purchase decisions of people. The social factors that could be studied in order to get the best idea of the social situation are: cultural implications, the social lifestyles of people, the gender and connected demographics, the domestic structures, educational levels and distribution of wealth. (Pestleanalysis 2015 a)

The last part of PEST analysis is about technological factors that could have an effect on the business. Technology is developing all the time, and its advancement is having a big influence on businesses around the world. Up to date information about the latest technological developments is important for the companies, in order to stay up with the changes and, therefore, avoid losses in the future and be ahead of competitors. Important factors to consider when evaluating technological situation are things such as new discoveries, rate of technological obsolescence, rate of technological advances and innovative technological platforms. In addition to the above-mentioned pros of evaluating the technological situation, technological research can be a way to understand how consumers react to technological trends and how they might use them for their benefit. (Pestleanalysis 2015 a)

The process of the environmental analysis has four basic steps. It starts with the first step which is the scanning of the environment for environmental factors. Then, the relevant factors are identified and monitored and after that those factors are analyzed for impact. Finally, possible scenarios and forecasts will be made and based on those, the developing of new strategies can start. (O'Farrell 2016)

4.3 Competitor Analysis

In this thesis, the industry and the business environment are discussed. These two analyses already talk about competition from different points of view. However, identifying more closely the companies which satisfy the same customer needs, is the goal of a competitor analysis.

The phrase "competitor needs" is important to understand, since it opens a broad view to the competitor analysis. It refers to the fact that not only the companies that offer the same product are the only competitors. A competitor for a typewriter shop could also be a company offering a product which fills a need to write, for example a company which sells pens, pencils, and computers with word processing software. Considering the subject of the thesis, it could be useful to take into consideration not only companies that sell virtual reality equipment and games but also companies that sell other kinds of video games and similar entertainment that fills the need to play, enjoy and experience through games. (Kotler 2001, 127)

Therefore, the first step of doing a competitor analysis is to identify the company's main competitors. After that competitors are analyzed by focusing on their strategies, objectives, strengths and weaknesses, and reaction patterns. (Kotler 2001, 127)

The first factor being analyzed is the strategies of competitors. *A strategic group* is a group of firms that follow the same strategy in a certain market. In a competitor analysis, it is useful to identify different strategic groups of competitors based on, for example, product quality and level of vertical integration. It could be clarifying to draw up a chart about the differences of these groups. Based on this in-

formation, the company doing the competitor analysis identifies itself as a part of one of the groups, as the company has the most similarities with this group. The other companies inside this specific group are the key competitors for the firm and as a result, should be analyzed more closely. The strategies of companies change continuously, and therefore, it is smart to monitor current competitors, and follow possible new entrants to the strategic groups. (Kotler 2001, 128)

After identifying the competitors and analyzing their strategies, it is useful to figure out, what the objectives of the key competitors are. Through the following questions the objectives are easier to find. What is each competitor seeking in the marketplace? What drives each competitor's behavior? Usually one of the main objectives is to maximize profit. However, there is a difference between how much weight different companies are putting on short-term and long-term profits. In some countries, it is more common to focus on short-term profits in order to satisfy stockholders. In some other countries it might be more common to value market-share-maximization through lower profits. Other objectives could be, for example, cash flow, technological leadership and service leadership. Many companies tend to pursue a mix of objectives. By knowing the objectives the of competitors, it is easier to anticipate to their actions. It is also advisable to monitor competitors' plans to expand and based on this, adapt their actions. This could mean that the company answers the expansion plans by making actions that give the company a competitive advantage. (Kotler 2001, 128)

Whether competitors can carry out their strategies and reach their objectives depends on their resources and capabilities. This is why it is important to find out strengths and weaknesses of each competitor. These factors can be analyzed by monitoring each competitor's share of market, share of mind and share of heart. Share of mind refers to the percentage of customers who name the competitor as the first company that comes to mind in certain industry. Share of heart refers to the percentage of customers who name the competitor as the company from whom they would prefer to buy certain product. In general, companies that make steady gains in share of mind and heart will inevitably make gains in market share and profitability. (Kotler 2001, 129)

The last area to analyze in a competitor analysis is reaction patterns. Each competitor belongs to one of four categories based on their philosophy of doing business, their internal culture and guiding beliefs. The four categories are: the laid-back competitor, the selective competitor, the tiger competitor and the stochastic competitor. Laid-back competitor is as it sounds: a company that does not react quickly or strongly to a rivals move, partly because they trust the loyalty of their customers. This kind of a company might not use a lot of resources or time to monitor competitors' moves and they might lack the funds to react. It is important to try to understand the reasons for laid-back company's behavior. The selective competitor however, is a company that reacts only to certain types of attacks, like price cuts. The tiger competitor is a company, that reacts in a swift and strong way to any assault and the stochastic competitor has no predictable reaction pattern. Many companies are unpredictable, since they compete on miscellaneous fronts when they can afford it. (Kotler 2001, 130)

In addition to the previously mentioned factors, it is also advisable to take into consideration a couple of other things that might help to understand competitors. Since media is nowadays a popular and efficient way to make a company and its product known, it is useful to think what type of media competitors use to market their products and services. How much resources do they use for advertising in media? Also, it is useful to consider what kind of potential opportunities competitors make available. (Entrepreneur 2016) By understanding the factors mentioned in these afore mentioned two paragraphs, a company is more able to anticipate reaction patterns and it can develop efficient strategies that minimize the impact on its own performance (Kotler 2001, 130).

4.4 Customer Analysis

Customer analysis is about researching a company's current customers, competitors' customers or potential customers of a product category. Usually it has something to do with finding new customers, making more sales to current customers or keeping customers loyal (Aaker & Kumar & Day 2004, 723). A customer could

be an immediate customer (such as supermarkets and manufacturers) or a final customer (individuals and businesses). (Lehmann & Winer 2002, 106)

Since each customer is unique, a separate strategy to different kind of customers could be needed. An efficient way of doing this is by first dividing customers into segments and then analyzing the groups. Analyzing each customer one by one would be too time consuming. By using segmentation, a company threats each customer as unique, but at the same time assumes that customers are equal. For a company, segmentation is a way to find out how customers behave and use that information to better marketing programs. (Lehmann & Winer 2002, 106-107)

There are several things to consider when analyzing customers and their behavior. The first step is to recognize the customers for a certain product or a product group and then analyze their buying behavior. What are they buying and how do they use this product? Where are they buying this product from and when? How do the customers make a decision to purchase this product? One important question to consider is why the customers buy this certain product, instead of buying the same or a similar product from a competitor. What do they value more in this product? When considering marketing programs, it is also good to know how the customers respond to advertising and promotions. In order to make long term customer relationships, it is important to know whether or not the customer will buy the product again. (Lehmann & Winer 2002, 109)

Different descriptive variables for consumers include groups such as demographic, socioeconomic, personality, psychographics and values. It is common to analyze these groups when companies want to know general information about consumers. Demographic factors are, for example, age, sex, location geographically (and therefore, the cultural factors), and stage in the family life cycle. Demographics can tell some vital information about consumers, but often the demographic segments do not clearly differentiate customers' buying behavior. Socioeconomic factors include things such as income, occupation, education and social class. However, making conclusions about buying behavior based on these socioeconomic variables could be hard, since often, for example education and buying

behavior does not have much to do with each other. (Lehmann & Winer 2002, 108)

The third variable is the personality of the consumers. Many marketing professional are using knowledge of psychology to help understand consumers' buying behavior. In some cases, personality could be a useful factor when considering what products consumers buy and why. But more often this variable is less useful than demographic and socioeconomic variables. The last part, psychographic variables are often referred to as AIO variables, as they are lifestyle variables which include activities (A), interests (I) and opinions (O) of the consumers. Activities are things such as cooking, travelling and sports and interests are for example art and music. These three factors tell a lot about the kind of life a consumer is living, and they are broadly used as bases for segmentation and creation of advertising themes. (Lehmann & Winer 2002, 108-109)

When thinking about what products consumers buy and how they use them, it is useful to think about factors such as market shares and purchase amounts. It is also important to consider what benefits customers are looking for in the product. When a company is trying to find the best distribution channels for its product, it is useful to know where the customers are most often buying certain kind of products. What is the most efficient way to get a product known? Is it by selling it in a big store in a city or, for example, by advertising it in social media? Where are the customers making the purchases now and what will be a popular buying place in the future? (Lehmann & Winer 2002, 112-116)

When someone is buying a product, there are different roles to be considered in the process. *An initiator* is a person who gives the idea to buy certain product. *An influencer* gives his/her opinion about the idea of buying this product and therefore, has an influence on the decision. *A decider* is the one who actually chooses to buy the product and makes the final decisions. *A buyer,* however, purchases the product. All these persons can be the same person, or they can be different ones. When considering advertising, it is good to know, for example, who is the decid-

er, since he/she is the reason why the product is being purchased, despite of the fact that someone else can buy it for him/her. (Kotler 2001, 96)

When a company is thinking of marketing and selling technology products to customers, it is important to understand how, for example, a new kind of innovative product can reach a situation where the product is purchased by not only technology enthusiasts but also regular consumers. Some products are purchased by only innovators and early adopters (enthusiasts) and then the success ends because the product cannot find its way to other customers/majority. This specific important point of the product's lifecycle is called *the chasm* (seen from the figure 1 below). (Moore 2014)

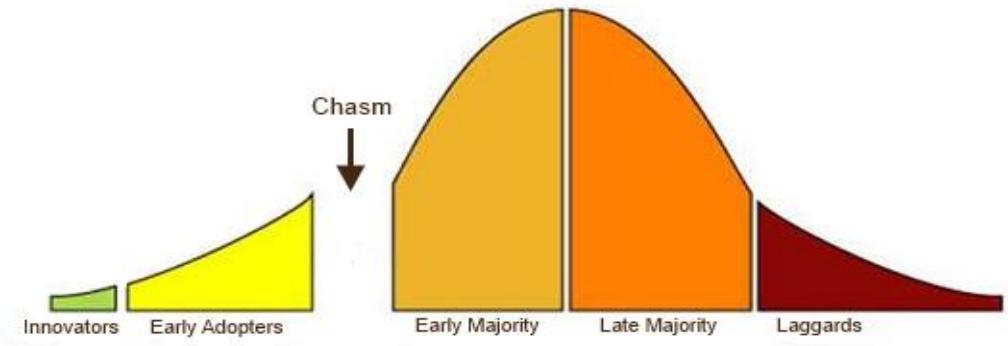

Figure 1. Technology adoption life cycle (Moore 2014)

Innovators and early adopters are consumers who want to be the first ones to own the product and they want to pursue new technologies. Early adopters are people who understand and appreciate new technology and they rely on their own intuition and vision more than other people's opinions. They purchase the product early on its life cycle. Early majorities are a bit similar to early adapters, but before purchasing they first want to see how other people are reacting the product, because they know that many new products end up as failures. About one-third of the adoption life cycle belongs to this group and that makes them a really important group considering the product's success. Late majority is similar to early majority, except they wait until the product has become a standard, and even then they buy when a lot of support and recommendations are available. They tend to

buy the product from big, well-established companies. The last group is laggards, who for personal or economic reasons do not want anything to do with new technology products. They buy the product more likely, if it is somehow hidden in another product, and they are not fully aware that they are also buying the new technology product. (Moore 2014)

4.5 SWOT Analysis

SWOT analysis is a strategic planning tool used to help a company know the potential of a new business or a product. SWOT can also be used to analyze, for example, competitiveness of a service, product or competitor. SWOT stands for Strengths, Weaknesses, Opportunities and Threats, and with the help of these four factors, the company determines the likely risks and rewards of their action and finds the most promising new markets. SWOT evaluates the internal and external factors of the business. The analysis is often done in a 2x2 matrix, in order to make it more clarifying. (Goodrich 2015)

SWOT is done by first listing strengths and weaknesses to the upper part of a 2x2 matrix. These are the internal factors. External factors are the possible threats and opportunities, which are listed to the lower part of the matrix. In the following paragraphs these four different factors are being analyzed more closely. (Goodrich 2015)

SWOT begins when the target of the analysis have been chosen. If the target is a product, the company starts to analyze all the strengths of the product in a certain market. Strengths are about the positive attributes of the company and basically everything that is likely to give an advantage over competitors is advisable to be listed in this part. Another internal factor in SWOT is weaknesses of the product. Companies can control their weaknesses to some point, but there will always be weaknesses that detract companies to perform at an optimum level. Weaknesses lower the competitiveness of a company. Weaknesses such as lack of capital invested in the business, lack of technologies, lack of skilled workers and poor location are common. (Pestleanalysis 2015 b)

After strengths and weaknesses, opportunities and threats are analyzed. Unlike internal factors, external factors are beyond a company's control. Opportunities-factor is the positive side on external factors, as it reflects the potential of a business or a product. If the company has analyzed its opportunities well, it can take an advantage of them and use them to be better than rivals. Opportunities can reveal themselves in situations such as changing consumer demand or taste. A threat, however, is the negative side of external factors. Threats are things that could jeopardize the marketing strategy and the whole business and that is why this part is important to analyze well. A company can try to predict future threats and make a plan to fight against them. Some examples of threats could be government tax regulations, price rises of suppliers, bad media coverage or even competitors. Threats can be categorized based on their seriousness of harm or likelihood. After analyzing threats, a contingency plan is made. (Pestleanalysis 2015 b)

SWOT is not only about listing different business factors into categories. An important step after this is to implement the strategy based on the data received from the analysis. This means taking advantage on the strengths and opportunities and minimizing or eliminating the negative impacts of the weaknesses and threats discovered. (Pestleanalysis 2015 b)

5 RESEARCH METHODOLOGY

5.1 Research Methodology and Data Collection

Often in research studies the research data is first collected by using *secondary data*. This kind of data is found, for example, from books and various internet sources. Secondary data sources already exist and, therefore, they save a lot of time and money, compared to *primary data*. In a research, it is common that not all the information can be found from books and the internet. Researchers might want a deeper insight to their study, and that is when primary data is useful. Primary data is acquired by carrying out, for example, surveys to consumers, by analyzing focus groups or using test markets. (Kotabe & Helsen 2011, 197-206)

Two commonly used research types for primary data are called qualitative and quantitative methods. The qualitative method is used when a researcher wants more thorough and more detailed answers, which have more potential for greater new insights and perspectives. Qualitative research is less structured and questions give more flexibility for the answers. Qualitative research can be done, for example, by using interviews or focus-group discussions. The sample group is usually quite small and the respondents are chosen carefully. (Aaker & Kumar & Day 2004, 188-197)

The quantitative method, however, includes a quite large number of respondents and they are chosen randomly. Basically a larger number of responds means more reliable statistical results. The idea of quantitative method is to find out consumers' opinions in a structured way. Often quantitative research is done by using surveys and questionnaires. These can be done, for example face-to-face, by email, by post or over the telephone. To get reliable and meaningful data, it is important to consider the questions carefully. A quantitative method can tell a researcher things such as how consumers behave, if there is a market for a certain product and whether people are interested in buying this product. (The Marketing Donut 2016)

In this thesis most of the information is found using secondary data sources. However, in order to get more thorough look into consumers' behavior, expectations and opinions, a questionnaire is used for primary data. The goal of the questionnaire is to find out, if there is a need for virtual reality games in Finland. In order to reach the goal, it is important to ask, for example, about consumers' opinions, expectations and hopes towards virtual reality games. If the consumers want something more, there might be a potential for a company that is ready to solve these problems.

The questionnaire was done using Google Forms, and the link to the questionnaire was then sent via email to students in Vaasan ammattikorkeakoulu (VAMK), University of Applied Sciences. The questionnaire was also published in two Facebook groups concerning games. The questionnaire was written in English and Finnish, so that people who are living in Finland but do not speak Finnish, can answer as well. Some Finnish speakers also preferred to answer the English version. All in all, 284 answers were received (32 in English, 252 in Finnish) between 21st of April to 4th of May 2016. The questionnaire was kept open for this time, but most of the answers came during the first days. To Facebook the questionnaire was sent on 22nd of April, and 96 answers were received in that day. VAMK students received it on 25th of April, and 153 answers were received during that day.

In addition to the questionnaire and the secondary data sources, also a qualitative research method is used. Qualitative research is done by interviewing a video games and virtual reality games professional, programmer Antti Veräjänkorva. Mr. Veräjänkorva is working for a Finnish game company, Mindfield Games (more about the company later). Only one interview is included, as the main research methods are the questionnaire and the secondary data. The interview was done in a simple way, without further planning or a specific structure. The interview, however, brings more thorough and more personal look into the game industry. The interview's objective is to be only a supportive and a more detailed factor to the other findings in the thesis.

The whole concept of virtual reality in its current form is still a new thing, and only few headsets are available for purchase right now. The whole development of virtual reality equipment and games is still ongoing. This is one of the reasons why acquiring trustworthy information and data about virtual reality can be difficult in some areas of the analysis, since often the data cannot yet be found from secondary data sources. Data that actually is found is mostly forecasts and highly concentrated on VR globally. However, some of the missing information can be found with the help of the questionnaire. In some cases, data and information about the whole game industry is being used, since virtual reality is part of it. Virtual reality's role in the whole game industry is then analyzed more closely and connections and evaluations are made.

5.2 Questionnaire's Design and Structure

Questionnaires are often divided into three sections: exclusion or security question, screening questions and the main questionnaire. The goal of the exclusion question is basically to find out if the respondent knows too much about the subject or if the respondent is a competitor for the company that is doing the study. If the respondent knows too much about the subject because he/she works in that industry, his/her attitudes and behavior might be different when comparing to other consumers. It the respondent is a competitor for the company, the questionnaire might raise some security questions. (Brace 2013, 29-30)

The objective of the screening question is to find out if the respondent belongs to the research target group or not. Often there is, for example, an age limit for the questionnaire and, therefore, it is good to know at the beginning of the questionnaire if the respondent does not fit to the target group. (Brace 2013, 31)

After the exclusion and the screening questions, the main questionnaire begins. Usually questions start with general ones and then continue to more specific questions. For example, the first questions could be about the respondent's behavior in the market in general, and then questions about the specific product could be asked and finally, the last questions could be about how the respondent would react to a new proposition for the product. Questions about behavior should come

before questions about attitudes. The order of these questions is done so in order to avoid some bias and to make the answering easier for the respondents. General questions in the beginning are preparing the respondent for more detailed questions. The questionnaire should also be clear and logical. If the subject area changes to something else, it is good to avoid coming back to some previous subjects, as it might confuse the respondent. (Brace 2013, 32-34)

The actual questionnaire for this thesis starts with general questions which survey the consumers' demographic factors. Then it moves to questions about video games in general. These questions are meant to give some idea of the consumer's general attitude towards games and playing and also give some idea of their buying behavior.

After that, the questionnaire moves to virtual reality by asking if the consumer is familiar with virtual reality and if not, they do not have to answer to the next questions. The idea of this question is to find out if the consumer's answers are reliable, as a person who does not know about the subject at all, could give unreliable answers. After this, the questions go in more detail to consumers' buying behavior, their opinions and attitudes. Some of the questions also try to find out what the consumers' attitudes and hopes towards virtual reality equipment are. Finally, the two last questions are about consumer satisfaction. These questions are for people who have already tried virtual reality products and the aim is to find out if they have any bigger complains about them. After that, the measures and possibilities to solve these problems can be identified.

In order to make the questionnaire interesting and easy to answer, several types of questions are used. Most of the questions are multiple choice questions, but also include a possibility to answer "Other", so that no opinion or answer is forgotten. There are also two linear scale questions with a scale of 1 to 5 and three open answer questions. The questionnaire is mostly about customer behavior, and the content is, therefore, analyzed in the customer analysis –section. The whole questionnaire with all the questions can be found at the end of the thesis (Appendix 1).

There is a reason why both basic video games and virtual reality games are considered in the questionnaire. It is useful to find out the connection between people who are interested in basic games and people who are interested in buying VR equipment. Therefore, it is possible to try to predict how many people are going to buy VR products in the future. Other reasons are to find out the amount of people who like video games and also, what people are using for playing most often and where they mostly buy the games. This information can be useful when a company considers where they should advertise their games and to what platform it would be wise to make games to.

6 ANALYSIS AND RESULTS IN FINNISH MARKET

6.1 Current Industry Description

In this analysis, first the current game industry in Finland is being explained in order to get a general idea of the whole field. Then, a deeper look to virtual reality in global level is taken. Last, with the help of virtual reality's position globally, the game industry's situation in Finland and with the help of an interview, conclusion on the current virtual reality market in Finland will be made.

6.1.1 Game Industry in Finland

The game industry is the biggest content and culture export industry in Finland and it is recognized as a form of a culture. When comparing Finland's game industry development to other countries in Europe, Finland belonged to top three countries according to turnover. The turnover of the game industry in Finland in 2015 was 2.4 billion euros, while globally it was 84 billion euros the same year. Most of the turnover (2.1 billion) in Finland comes from one game company: Supercell. The amount of the whole game industry's turnover and its development from 2008 to 2015 can be seen from figure 2. All the numbers are marked as thousands euros. From the figure it can be seen that the turnover of the game industry in Finland has started to rise especially after the year 2013. 2012 and 2013 have been the most active years for studio establishing. (Neogames 2016 a)

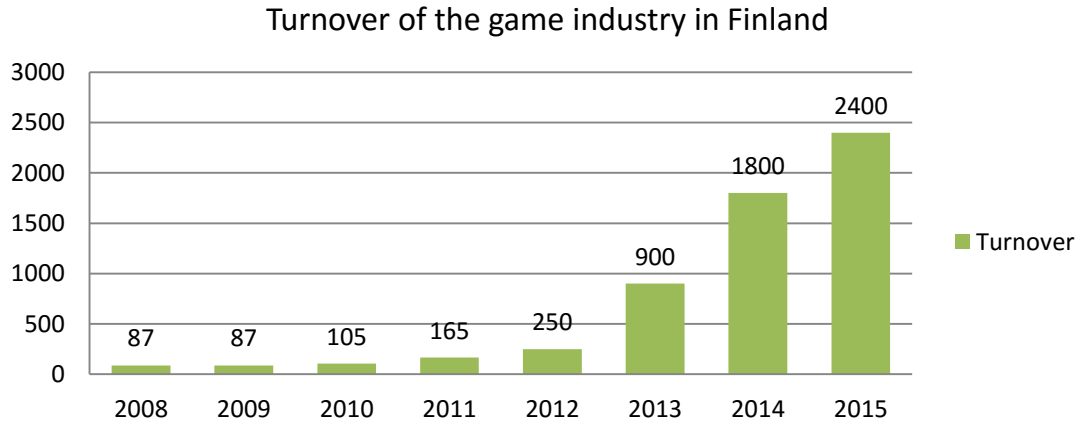

Figure 2. Turnover of the game industry in Finland from 2008 to 2015. (Tekes 2016)

There were 290 game companies in Finland in 2015 of which 29 companies were established in that year. 69% of all game studios in Finland are less than five years old. Over 150 games were published in 2015, and most of them were mobile games. The competition was high last year and entering the market was hard for new companies. (Neogames 2016 a)

Even though most of the games published in Finland last year were mobile games, there was significant game development going on to other platforms as well, including virtual reality and Steam (an internet-based digital distribution platform for PC). (Neogames 2016) As can be seen from figure 3, iOS and Android were clearly the most popular platforms used among game studios in 2015. PC and Windows Mobile were used quite a lot as well. Oculus Rift, being a newcomer in the game industry, had four game studios creating games using it as a platform. 85% of the platforms game studios used were mobile platforms. (Tekes 2016)

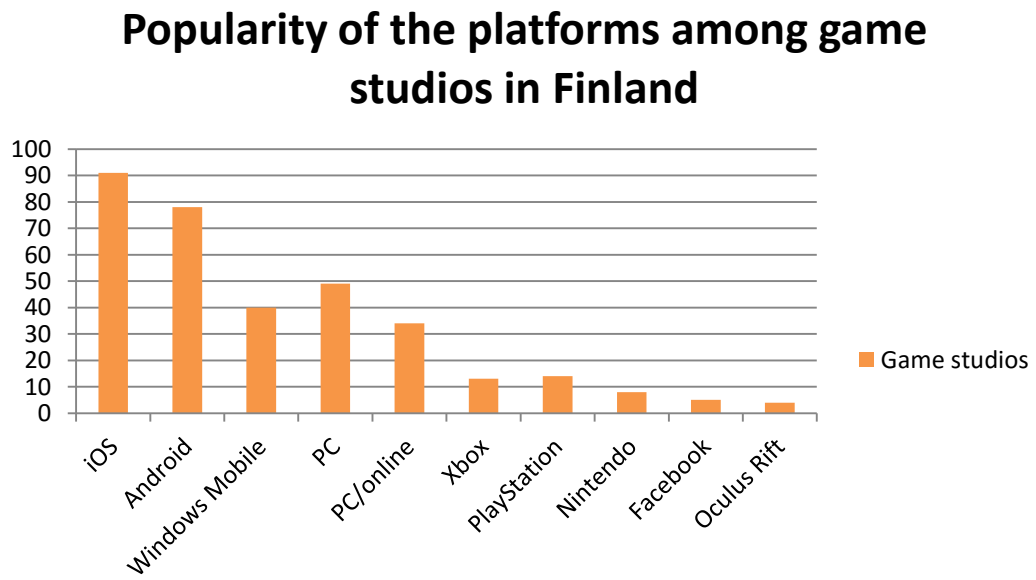

Figure 3. Popularity of the platforms among game studios in Finland (Tekes 2016)

All in all, it can be said that the Finnish game industry experienced a significant start-up boom during the last years. Three main reasons are often mentioned for this success: there has been an easy access to distribution channels in Finland, en-

hanced development tools have been available and attitudes towards entrepreneurship have been positive. The game companies get a lot of support and a chance for cooperation from several different organizations such as Tekes (Finnish government's funding agency for innovation), Neogames (acting as an industry umbrella organization) and Finnish game developers association called Suomen Pelikehittäjät. This cooperation includes a large variety of activities from jointly organized events to sharing market information. (Tekes 2016)

2016 is expected to be a success in the game industry as well. Long-awaited games such as Clash Royale from Supercell and Quantum Break from Remedy are released this year. Several companies that received investments in 2015 are also going to publish new games in 2016. One game worth mentioning from the virtual reality –field is Mindfield Games' Pollen, which is the first full VR game made in Finland. (Neogames 2016 a)

6.1.2 Virtual Reality Globally

When thinking about virtual reality more closely, researchers from the multinational professional services company Deloitte predicted, that virtual reality's worldwide sales will be 1 billion dollars in 2016. 70% of the turnover will come from hardware sales and 30% from content. (Deloitte 2016) However, according to another research, virtual reality will generate 5.1 billion dollars in 2016, including 27 million sold pieces of Google's Cardboard, 2.5 million of Samsung Gear, 6.6 million of PC's headsets (Oculus Rift, HTC Vive) and 1.9 million of PlayStation VR (Gaudiosi, 2016).

Having said that, virtual reality is still an uncertain industry and various forecasts differ quite much, and they are also basically guesses. It is possible to make some kind of conclusions from these different forecasts, as they do have some things that are more likely true.

The biggest part of the headsets' unit sales will be from the cheaper headsets such as different cardboard headsets. The most common way to benefit from virtual reality in 2016 will be by playing video games. Full feature virtual reality games

for PC and different consoles will have more turnover in the following years than VR games for mobile phones, as mobile phone games and headsets are a lot cheaper (and a lot of games are free). Virtual reality usage with movies and television will not be that common in 2016. (Deloitte 2016)

Business consulting and custom research company Strategy Analytics estimates that consumers are interested to try virtual reality products, but they are not ready to spend that much money on the equipment yet. This might change after consumers know more about VR and after they have had their first VR experiences. After experiencing VR with cheap headsets, it is easier to see the potential of VR, for example, what it could be with better equipment. Therefore, Strategy Analytics' analysts (2016) believe that "smartphone-based VR can serve as an effective "gateway drug" to upsell users to higher quality VR experiences down the road while locking them into early but potentially sticky ecosystems." (Raskind, Waltzer, Watkins, Mawston, Upadhyay, Oh & Nair 2016)

Deloitte's research says, that the year 2016 will be likely a year of experimentation. This means that not only game companies are trying to figure out the best way to benefit from VR, but also other companies are trying to figure out, for example, how to best use VR for sales and marketing purposes. Virtual reality is a really complex thing, and it will take some time before game companies learn how to create VR content and understand what kind of games are best for VR. Technology also needs a lot of improvement. Deloitte mentions that companies should be careful when investing into virtual reality, as VR's success might need some behavioral changes that "the majority of people do not want to make". As an example, they refer to the fact that previously consumers were not happy to wear something on their face. (Deloitte 2016)

6.1.3 Virtual Reality in Finland

After analyzing the game industry in Finland and virtual reality globally, more thorough look to virtual reality in Finland is taken. As with the global industry analysis, it is hard to make trustworthy forecasts on Finnish VR industry's turnover, as there are too many factors that can change the outcome.

There are several different companies involved in virtual reality. A more detailed look at the companies is made in the competitor analysis. In general, it can be said that there are some companies that are developing and publishing virtual reality games or are offering services that support VR. According to Virtual reality Finland RY, there are companies providing, for example, platforms for creating and sharing VR content (2 companies), 360 content creation companies (4), Exergames (fitness games and equipment) creation companies using VR (2), 3D and VR content creation companies (3) and some other supportive companies for virtual reality. Earlier mentioned Mindfield Games is one example that is creating VR games. (Virtual Reality Finland Ry 2016)

As can be seen above, the number of companies working with virtual reality in Finland is not that high yet. As mentioned before, the companies might be wondering what the best way to benefit from VR is and it also takes time to learn the basis for it. When thinking about competition in VR game publishing, only a few companies have published a proper VR game. Also, according to Antti Veräjänkorva (2016) from Mindfield Games (a company that has published their first VR game), other companies are not really a problem for them. Only if two companies publish the same kind of a game at the same time would they have to compete for the same customers (Veräjänkorva 2016). This means that there might be fewer customers for Mindfield Games as well. It sounds like the earlier mentioned high amount of competition in the Finnish game industry in general might not be a big problem, at least for a VR company. Mr. Veräjänkorva also said that they keep in touch with other game companies and loan equipment and such. Companies are also quite open about their technologies, according to Mr. Veräjänkorva.

At least for Mindfield Games, it seems that right now the game industry in Finland is a quite open and a respectful environment with some amount of cooperation between game companies. It also helps that the company is ahead of other companies in Finland when it comes to virtual reality, and therefore, the company gets a lot of extra attention and invitations to come and speak in conferences around the world (Veräjänkorva 2016).

Mr. Veräjänkorva's statement about sharing and cooperation among different game companies in Finland is interesting. When researching the subject more deeply, a press release from a Finnish game company Futuremark was found. According to the release, "Finland's fast growing VR ecosystem" is supported by a unique innovation culture and an environment that encourages sharing and community. Lessons learned, new methods and new solutions are shared in a free and an open way. Finland's numerous communities, networks and associations concerning video games are a big help in this cooperation. This puts VR enthusiastic companies in an ideal position. Also according to the release, this open and free business environment is one of the reasons why the country is a world leader in mobile apps and games, despite of the country's small population and workforce. (Futuremark 2015)

According to the interview of Mr. Veräjänkorva, "Finland is a good place for a gaming company right now since we have so many success stories here and investors are interested in Finnish gaming companies". This supports the earlier mentioned fact that the turnover and success of game companies in Finland is increasing. However, according to him, the problem in Finland is the low amount of local people to hire. Employees have to be hired from abroad right now and that is not the easiest task, because Finland's long winter and small cities keep away some foreign workforce. (Veräjänkorva 2016)

When thinking about the difficulties in VR games industry, Mr. Veräjänkorva says that the biggest challenges are the uncertainty of virtual reality's future, high prices and high hardware requirements. Virtual reality's failure would be very bad for Mindfield Games, since the company has invested a lot on VR equipment and VR game development. However, the company's VR games can also be played without a headset, which reduces the potential loss for the company if virtual reality fails. (Veräjänkorva 2016)

Mr.Veräjänkorva's own opinion is that virtual reality is going to be big in ten years' time. It is a whole new way of telling stories. According to him, however, the prices have to be a lot cheaper and the usage of virtual reality equipment has

to be something more general than just gaming devices, so that non-gamers have a reason to purchase VR products as well. This kind of a product could be, for example, a VR phone. (Veräjänkorva 2016)

As a conclusion, the Finnish gaming industry is a quite favourable environment for a VR game company, but since the global VR market has a big effect on the virtual reality game market in Finland, some caution is needed if investments are made. If VR is doing well in the world and a lot of content is available, likely it will increase the market size in Finland as well. However, more time is needed in order to know for sure if VR is something that, for example, high amounts of consumers and companies in Finland would be interested in.

6.2 Macro-environmental Analysis

The macro-environmental analysis is divided into four sections and therefore, political, economic, social and technological factors of Finland in general are analyzed.

6.2.1 Political Factors

According to The Fund for Peace (FFP), Finland was the most stable country in the world both 2013 and 2014. The result is based on political, social and economic factors. Political and economic stability is partly so high because there are constructive partnerships between the government, employers and trade unions. (Invest in Finland 2016 a)

When thinking about taxes, the top corporate tax rate is 20%, and the personal income tax rate is 31.8%. In addition to corporate and personal tax, there is value-added tax and a tax on capital income. Altogether the overall tax burden is 44% of total domestic income. The general VAT rate in Finland is 24%. The tariff rate in Finland and in other EU members is on an average 1 percent. Concerning entrepreneurship, the government encourages it by transparent and efficient regulatory framework. Foreign and domestic investors are treated equally, and investment freedom is 85.9. Trade freedom is 88.0. (Economic Freedom 2016)

Since Finland is part of the European Union, no import duties are applicable and free movement of services and goods is allowed. Finland is also a member of World Trade Organization. (International Business Publications 2012, 144-147)

Concerning virtual reality and game industry in Finland, there are not many political conditions that companies should be worried about. Taxes are quite high, but among EU members the movement of products is free and, therefore, extra costs are at a minimum. The government also encourages foreign trade, entrepreneurship and minimizing the barriers to trade (International Business Publications 2012, 144-147).

6.2.2 Economic Factors

In the political factors (6.2.1) it is mentioned, that Finland is overall a stable country considering political, social and economic factors. However, over couple years, the country's economy has undergone a slowdown and uncertainty has grown (Economic Freedom 2016). The country's economy is slowly emerging from recession and the country is looking for ways to overcome the current industrial crisis (Coface, 2016). Finland is very vulnerable to changes in, for example, the European Union and the country has had some difficulties with recovering from the global financial crisis and Eurozone crisis. Despite of the difficulties, Finland's economy is expected to slowly improve this year (2016), with the help of exports and consumption. (Santander 2016)

Finland is a very industrialized country and its key sector is manufacturing. Wood, engineering, metals, telecommunications and electronics industries are most common industry forms. Export in Finland equals 40% of GDP, making it an important part of the economy. (International Business Publications 2012, 16)

When thinking more closely about the economy of Finland and economic freedom, Finland's overall score is 72.6 (13^{th} place overall). Corruption is not a problem in Finland, as the country was the third least corrupted country in the world (2014). Freedom of corruption was therefore 89.9. Rule of law is very strong in the country. (Economic Freedom 2016)

Government spending is 57.5% of GDP and the budget deficit is over 3% of GDP. 60% of total domestic output is public debt. The GDP of $221 billion allows high living standards. Fiscal freedom is 66.5. (Economic Freedom 2016)

Inflation rate has come down from 2.2 (2013) to 1.3 (2016). It is expected to be higher (2.00) in 2020. The rate of unemployment has grown in recent years, from 7.7 (2012) to 9.5 (2016). However, the rate is expected to decrease in the following years to 7.5 (2020). Finland has an ageing population, and the decrease in the active workforce has a big effect on the country's economy and it creates a burden on public finances. (International Monetary Fund 2016; Santander 2016)

6.2.3 Social Factors

Finland has performed well when measuring well-being, education, high living standards and clean and secure environment (Invest in Finland 2016 b). The workforce is highly educated and the transfer of knowledge between different businesses and universities is one of the key reasons for the country's innovation and economic success (Invest in Finland 2015).

Distribution of wealth in Finland is relatively equitable, although in the recent years some social inequalities have risen (Santander, 2016). For strong social inclusion, Finland is ranked as the best in Europe. This is because the country has strong equality and social services and opportunity to improve economic status are available for every citizen, regardless of their socio-economic background. (Invest in Finland 2014a)

Altogether there are 5.5 million people living in Finland. Figure 4 shows the age and gender distribution among the whole population. 2 701 490 males and 2 785 818 females were living in Finland in 2016. (Statistics Finland 2016)

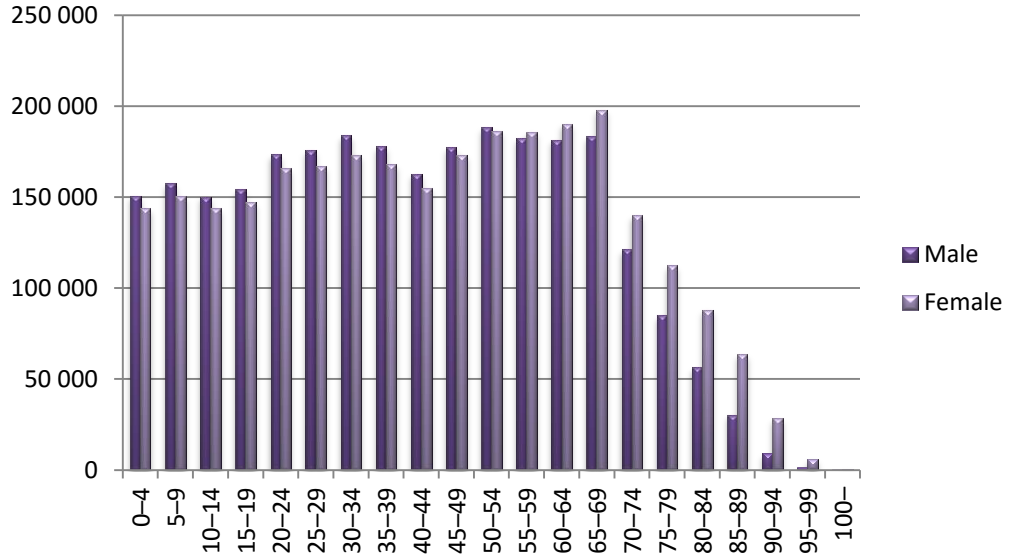

Figure 4. Population by age group, 2015. (Statistics Finland 2016)

When considering salaries among the population, the biggest group is people who earn 30 000-39 000€ a year (16.2%). The second biggest group is 10 000-14 999€ (12.6%). The smallest group is 80 000-99 999 with 1.4% of the population. The average salary per year in 2014 was 28 400€, men's average salary being 32 737€ and women's salary 24 302€. (Statistics Finland 2016)

When considering different age groups in the video game industry, according to Neogames almost 75% of people aged 10-72 play digital games. 93% of people under 40 years play and active players among them are 73%. This is a quite big number of players and all of them could be potential customers to virtual reality as well. Playing digital games is one of the most popular ways to spend time among children and young people. The connection of digital games to social media is strong. Some important reasons for the popularity of games are the versatility of different games and the possibility to make the gaming a social thing. More and more games are played together with other people. (Neogames & Suomen Pelikehittäjät ry 2010) It is also important that the game industry is prepared to offer something new to consumers all the time. People want to experience something they have never experienced before, and this makes virtual reality a potential new hit.

About 30% of the working population in Finland has a degree or higher qualification (2014-2015). This makes Finland the first amongst all countries, according to Global Competitiveness Report. The quality of higher education is important for economies wanting to move up the value chain beyond simple products and production processes. (Schwab 2015, 7-18) One of the most important reasons for the high number of well educated employees is probably the fact that Finland's education, even the higher degree education, is free for everyone, regardless of background. The government is also giving financial support to every Finnish person who is studying (unless their salary is over the annual limit). This makes studying possible for people with less money. When considering the thesis subject, there are about 20 different higher education institutions in Finland providing education for the gaming industry's needs, making it an important field also in education (Tekes 2016).

6.2.4 Technological Factors

Finland is known for innovative ideas, and is among the top countries globally in terms of research and development spending per capita. In the beginning of 2016 the country was recognized as the world's biggest contributor to global innovation (Ezell & Nager & Atkinson 2016). Also, according to the same research, the second most innovative and successful mobile apps are developed in the country's capital, Helsinki. Not only are Finnish companies early adopters of new technologies, but consumers are as well. This makes Finland a good country for companies that are planning to launch new solutions and innovative technologies. (Invest in Finland 2016c)

There is also easy access to public R&D funding, readily available finance and development networks. Highly-skilled workforce, well-functioning infrastructure and innovate environment are attracting foreign investments, and Finland was among the ten best investment destinations in Europe 2013, according EY European attractiveness survey. Especially software and business services had a lot of foreign direct investments. (Invest in Finland 2014b)

6.3 Competitor Analysis

In the competitor analysis VR headset competitors are analyzed as well as competitors concerning video games and virtual reality games. The reason why all these three categories are analyzed is that when thinking about investing in virtual reality, there are many kind of competitors that have an effect on the market and without identifying them, some important competitors might be missed. Virtual reality games also likely fill the same kind of need in customers than video games.

VR headset companies are important already if a company wants to build their own headset or invest in one. However, another important reason is that virtual reality games are sometimes exclusively done to only one of these headsets and when a company is choosing game companies to invest in, they are also basically choosing which headset they are investing in as well. There are also many games that are made for several different headsets and platforms.

Since the case company of this thesis does not have any certain product that they are selling (which is usually a common reason why companies do a competitor analysis), the competitive situation in Finland is analyzed in a more general way, without going into too many details. If the case company then decides to invest in virtual reality, a more thorough and specific competitor analysis might be useful.

6.3.1 VR Headset Competitors

Finnish VR related game companies are focused on developing virtual reality games and, therefore, there are not really Finnish companies selling headsets. However, there are several different headsets sold all around the world, and their impact on the Finnish VR market is big and, therefore, they are the strongest competitors in Finland as well. Five most known headset competitors are compared in table 1.

VR Headsets	Google Cardboard	Samsung Gear VR	HTC Vive	Oculus Rift	Sony PlayStation VR
Price	7€	150€	950€	750€	500€
Wireless	Yes	Yes	No	No	No
Controllers	No	Onboard touchpad, Bluetooth controllers	HTC Vive Controllers	Oculus Touch, Xbox One - gamepad	PlayStation Move, PS controllers
Moving in VR space	No	No	5 x 5 m	1,5 x 1,5 m	1,5 x 1,5 m
Resolution	Varies	1280x1440	1080x1200	1080x1200	1080x960
Refresh Rate	Depends on the phone	60	90	90	120
Quality of the graphics	*	**	****	****	****
At best	360 video	360 video	Movement inside a 5mx5m room	Playing is done when sitting or standing	Playing is done when sitting or standing
Possible to buy already	Yes	Yes	Yes	Yes	October 2016
Works with	Smartphone	New Samsung phone	Good computer	Good computer	PlayStation 4

Table 1. Comparison between different VR headsets (Virtuaalimaailma 2016)

Google Cardboard belongs to the cheapest VR headset category. Google's headset is basically something that a person can create himself/herself at home as well. Therefore, it is an easy, simple and a cheap way to get a virtual reality experience with smartphones. All a person has to do is put a smart phone inside the cardboard and start the experience. However, the graphics are not as good as seen from the table above, and there are no movement detectors or controllers to recognize the movement of the viewer other than head turning. This means that interacting with the VR world is not possible. The lower quality experience is far from the experience with more expensive headsets, but reasonable quality can be achieved.

Despite of the limits with Google Cardboard, it can be a good and easy way to give a consumer the first VR experience, in order to show the consumer what virtual reality is all about. Consumers can easily afford it, which makes it possible for more users. There are many other headsets that belong to this same category and there are also guidelines in the internet on how to make the headset yourself. As mentioned earlier in the current industry section, such cheaper headsets can be a gateway to more expensive VR equipment. Rumors say that Google will join the proper headset market at some point in 2016 with its headset that is close to Samsung's Gear VR (Murphy 2016).

In the customer analysis' theory section the phenomenon called "Chasm" is mentioned. It refers to the challenge which appears when selling new kind of technology products to not only innovators and early adopters, but also to the majority of the market. Therefore, Google's Cardboard and similar products might just be part of the solution for this. They bring virtual reality available and tempting for the majority while the development of higher quality VR equipment and content is ongoing. According to the Google Cardboard -company, 5 million cardboards had been shipped to people around the world by January 2016 (Pierson 2016). However, Google Cardboard is not a very high quality product and because of lack of good technology, it can give the viewer motion sickness. This might scare away some potential customers for higher quality headsets. Another way to get VR more popular is, of course, to make a lot of good content for the headsets and to create different ways to use it.

After Google's Cardboard and similar headsets, the next category is "a bit more expensive headsets for smartphones". This category includes Samsung Gear VR for Samsung Galaxy phones, which is made in cooperation with Oculus. Gear VR has the same kind of look than the more expensive ones do, but the quality of the experience does not fit into the same category with them. Controls are built into the headset and the headset can recognize head turning, but no other movement. There are many games available in Gear VR store, it is lighter than the more expensive ones and the price is more affordable. However, in case one does not have the right Samsung phone already, the price will be a lot higher. (Greenwald 2016)

The third category is higher quality headsets such as Sony PlayStation VR, Oculus Rift and HTC Vive. PlayStation VR tracks movement in a 1,5m x 1,5m space, the refresh rate is higher than with other two but resolution is slightly lower. Since one of the biggest concerns with VR headsets is the possible motion sickness, a high refresh rate makes the motion sickness less likely. The headset does not include headphones, like the two other competitors do. It has been evaluated that PlayStation VR does not reach to the same quality with its competitors, but the great thing is that it is for PlayStation 4, which is a really popular console. There are a lot of potential customers, as PlayStation is already owned by over 36 million people in the world (Venturebeat 2016).

Oculus Rift and HTC Vive are made for PC and they require a very good computer to work which could cost over 1000 euros. However, for people who already own this kind of computer, it shouldn't be a problem. According to Fortune, around 10% of all computers are good enough for headsets such as Oculus Rift and HTC Vive (Gaudiosi 2015).

When thinking about the quality of the experience, it is evaluated that HTC Vive, using the Steam VR platform, has the best technology and it allows movement in the biggest space (5mx5m), which could bring about a lot of possibilities the other two headsets cannot offer. (Lamkin 2016) However, it is the most expensive and again, it requires a very good computer. The possibility to move inside that big a space in one's home could also bring some challenges.

Oculus Rift is likely the most known among all headsets, partly because it was created before all these others and it was the first VR headset that people could take seriously. It is well known and people who do not even fully know the concept of VR still might have heard of Oculus Rift. This could bring some advantage for the company. When thinking about the quality of the experience, Oculus Rift is somewhere between HTC Vive and PlayStation VR. It has the same refresh rate as HTC Vive, the same room for movement as PS VR, and a better resolution than PS VR. Both HTC Vive and Oculus Rift have built-in audio, which means that no extra headphones are needed. With both of these headsets, the VR experience relies heavily on the computer. Oculus Rift does not come with controllers other than the Xbox One gamepad, and after buying separate controllers, the price will likely be close to the HTC Vive's price (Digital Trends 2016).

There are also a lot of other headsets with different qualities. For example Fove VR ($349) can recognize eye movement, Zeiss VR One ($129.99) can be used with many different smartphones and Avegant Glyph ($699) is light, small and easy to handle. (Lamkin 2016)

Some might be worried about the number of games available for the headsets. With all these five competitors listed in the table, there are a lot of games already available and a lot of games are coming out. However, the quality of the games is much higher with the more expensive headsets. More information about VR game developers in Finland can be found in the next section.

6.3.2 Video Games Competitors

Since the game industry is a very big thing in Finland, the competition is also high. From the industry analysis can be seen that mobile games have a lot of financial value among all games in Finland. This is important to consider when thinking about the attractiveness of Finland from the competition point of view.

The earlier mentioned game developer Supercell is an important competitor when considering the game industry in general. The company was clearly the most successful game company in Finland last year, and it has had three globally success-

ful mobile games. Their newest game also seems to be a big hit, as it already has over 10 million downloads in four months and 74% out of 4 million reviewers have given it the highest score (5) (Google Play 2016). Because Supercell is creating games that are all thus far big hits, consumers trust them more and are expectant of their new games as well.

The secret to Supercell's success, according to their website, is killing bad projects at an early stage, should the game in some way not meet the expectations, concentrating on one platform only and learning from their failures. They also said in their website that if they have not failed in a while, it means they have not taken big enough risks. Their strategy is to create games that any person in any country could love. The goal is to create a game that the players want to play for a long time. (Super Cell 2016) Concentrating on only mobile games could be both their weakness and strength. Some potential customers could be excluded from other platforms, which is a weakness. However, by focusing only on one platform, they are making games that are well planned and high quality. They are perfect for this one platform, and this is a big strength. Another strength they have is that even though their games are free to download, they are able to get a lot of money in other ways like purchases inside the games.

Another company worth mentioning is Rovio Entertainment, which is known for its Angry Birds mobile games. Today, Angry Birds is the most downloaded game of all time, according to the company's website. The company has made the game and the whole concept even bigger with Angry Birds books, animations and licensing, and on May 13th, 2016 the Angry Birds movie is released. By the end of May 2016, even Rovio's own Angry Birds series has been viewed more than 5 billion times. (Rovio Entertainment 2016)

What is great about Rovio Entertainment and Angry Birds is that they have created characters that are interesting to a wide range of age groups. They have made something basically simple but something that many people all around the world can recognize and appreciate. They have made Angry Birds a phenomenon.

Even though Supercell and Rovio Entertainment develop only mobile games that are not for VR, their importance have to be considered also when thinking about the competition in virtual reality games, since other kind of games can be seen as threats as well. Virtual reality games fill partly the same need as other kind of games. These two companies are the biggest ones measured by the companies' turnover, but there are many other companies with good and promising games as well. Virtual reality itself does not offer that many game developers in Finland yet.

According to Mr. Veräjänkorva, only a few serious and bigger games are available right now, and most of the available VR games are small demos and prototypes (Veräjänkorva 2016). When thinking about VR game competitors in Finland and outside of the country, it might be a little difficult to know which ones are going to be a success, since a lot of VR games as well as the headsets which are used to play them are just released. Most of the companies also have just released one or two short games for VR, so bigger conclusions of their success and importance as competitors is hard to make. However, some promising companies can be named.

The earlier mentioned Mindfield Games has released the VR game P.O.L.L.E.N., which is an exploration game for Oculus Rift, HTC Vive and PlayStation VR. The game is the first proper and higher quality VR game in Finland and also one of the firsts globally. This is a big strength for them. The company is going to continue with VR games, but at the same time doing the games "normal" way as well. This means that their games can be played with or without a headset. Another VR exploration game is Windlands, from Psytec Games Ltd (Psytec Games 2016). Windlands is a game by two Finnish game developers, and they joined Psytec Games from United Kingdom last year (Hibbins 2015). Both of these games are for Oculus Rift and HTC Vive. (Kärkkäinen 2016)

One example of a company developing VR games is Finnish Lucky You Studio. For now, they have a physics puzzle shooter game called Kumoon. This steam-based game is made for Oculus Rift. (Kumoon 2015) Both P.O.L.L.E.N. and

Kumoon have turned out to be successes in digital distribution platform Steam, as they have been in the top 5 position for a while now (Neogames 2016 b.). Since both of these companies have quite recently just released their first games, and not that much information is found about the companies, it is hard to make assumptions of their strategies, objectives or reaction pattern yet (as these should be included in a competitor analysis). However, it is safe to assume that the main objective of both of these companies is to be a forerunner in VR, and this is also a part of their strategy to success. It is likely that they are not waiting for a huge turnover this year yet, and rather the idea is to get a big market share with lower profits, at least for now. It is hard to make big profits this year for a game company, as it is more of an experimentation year for virtual reality.

Mindfield Games as a publisher of the first proper VR game in Finland, has likely some amount of "share of hearth" and "share of mind" (used in the theoretical study of the thesis). As a forerunner, they get a lot of publicity and Finnish consumers likely are quite excited and interested in supporting a Finnish VR game right now. Right now both Mindfield Games and Lucky You Studio might be quite "laid –back competitors". The competition is not high among VR games (in Finland) and the amount of cooperation between game companies in Finland is high. There is this team spirit among Finnish game companies which includes some trust towards each other.

There are about 300 game developer companies in Finland at the moment, but only a few are working with VR right now. In the last Finnish Virtual Reality Association gathering, there were 16 companies present, so it seems that there is some interest towards virtual reality. The reasons why there is a low amount of VR game developers are that the headset prices are fairly expensive and the technology is still developing. (Kärkkäinen 2016) Hopefully, when the technology improves, the equipment will get cheaper as well.

Virtual reality is a global industry. For consumers it does not really matter that much which country the VR games are made in, because consumers can find the games all in the same places, such as SteamVR, App stores of smart phones, Gear

VR store, Oculus VR store or the PlayStation store. This is the reason why it would be wise to consider competitors outside of Finland as well. However, it might be too soon to know which competitors will be the biggest ones in the VR market and further research of promising global companies is omitted, considering the thesis subject.

6.3.3 Other Competitors

One potentially really successful company with virtual reality related actions is the Finnish technology company Nokia, with its number 8 position of the most promising VR companies, according to Techworld's study (Murphy 2016). Nokia is mostly known from its former success in the mobile phone industry, which was ended by companies such as Apple and Google (android) (Kelly, 2015). Nokia, Intel and the University of Oulu in Finland have a joint research center for creating 3D and VR software for mobile devices. (Murphy 2016)

When it comes to Nokia, it is important to mention their most important virtual reality product right now, named Ozo. Ozo is a professional virtual reality camera which captures 360° spherical video and 360x360 surround sound (Nokia 2016). The camera is therefore designed to make 3D films and virtual reality games. At the end of April 2016, Disney informed that they will work together with Nokia and their Ozo-camera in order to create extraordinary movie experiences (Sawers 2016). With Ozo, much higher quality VR content can be reached than with the earlier mentioned headsets. The role of Ozo therefore is to produce high quality content, so that consumers have something amazing to watch with their headsets. Since it is made for professionals, and the quality of the product is high, also the price is high. With $60 000 (~52 830€) Nokia brings Ozo to the premium category. (Collins 2015)

One company outside of Finland related to virtual reality and worth mentioning is Microsoft. Microsoft's headset, called Hololens, is a mixture of augmented reality, virtual reality and mixed reality (Microsoft, 2016). Hololens basically allows the player, for example, to interact with a hologram in his/her living room. Hololens is more expensive ($3 000/~2640€) than other similar devices on the mar-

ket, and therefore it is targeted at professionals like engineers, designers or construction workers. (Murphy 2016)

6.4 Customer Analysis

In the following sections (6.4.1. & 6.4.2.) different variables concerning consumers will be analyzed based on the questionnaire. The analyzing is divided into two sections: demographic and socioeconomic factors and psychographic variables and buying behavior of the respondents.

6.4.1 Demographic and Socioeconomic Factors

First, the demographic and the socioeconomic factors of the respondents will be analyzed. The questionnaire was answered by 284 consumers and 58% (166) of them were males and 42% (118) were females. Most of the respondents were between 20 to 39 years old (figure 5).

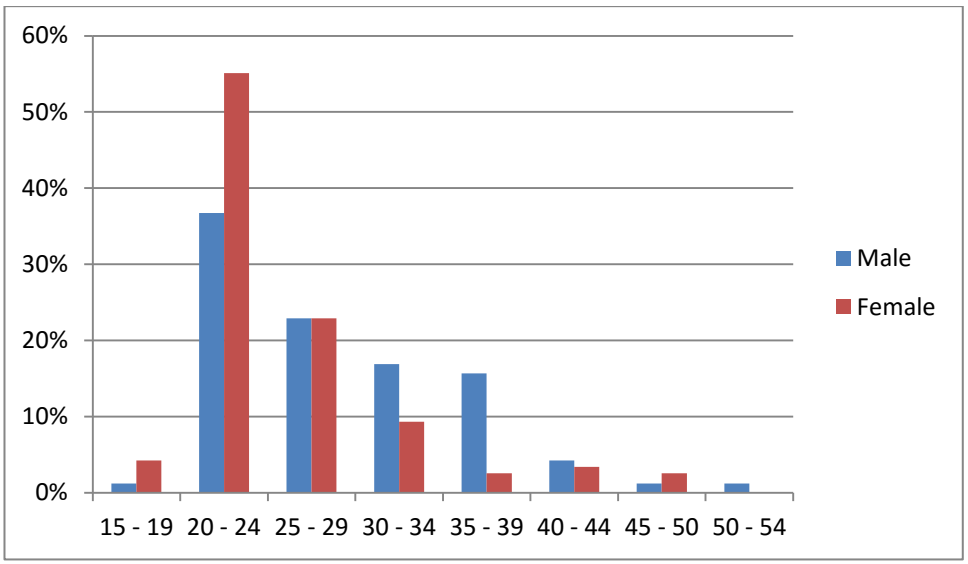

Figure 5. Age distribution of the questionnaire

The biggest age group for females and males was 20-24 years, and this is probably because the questionnaire was mostly answered by university students. Out of all, 95% were living permanently in Finland. This is good to know, as in a market research of Finland, it is better to know the opinions of people living here and therefore, having something to give for the market.

From all the respondents, most were students or students with a job, 20% of all were full-time employees and 7% were unemployed. From this information, some hints of the respondents' income can be gained (as if they have income at all). Closer knowledge of their income is not that necessary in this case. However, students without a job are less likely to have money for the more expensive headsets than, for example, than those employed full time. 17 of all respondents stated playing games with their children, so at least 17 are in that part of life cycle where they have families. Of course, other respondents also might have children or the children are so young that video games are not played with them yet. When more purchases in virtual reality are done, it could be good to figure out who is the one making the purchase decisions, for example, in families, and what other roles they have. Based on the results, more accurate advertising can be done.

It is hard to tell yet which age group or which life cycle group is the most interested in VR games, since the questionnaire was not answered by younger than 19 year old people and more time, more VR awareness and further research is needed in order to know that. At least in the questionnaire, there was a lot of interest towards VR from all ages from 19 to 50. It seems that right now the games are for a bit older people than really young children, considering the content of the games. However, it is likely that a lot of headsets will be bought for children by their parents and more games and advertising for children is likely to take place in the future.

6.4.2 Psychographic Variables and Buying Behavior

The next section of the questionnaire starts the biggest and the most important section, as the psychographic factors and the buying behavior are analyzed. First, the respondents' opinions about video games in general are researched, as well as their buying behavior and habits towards video games. When asked with a 1 to 5 scale if the respondents like playing video games, the most popular answer was 5 (the highest) with 40% of the responses (as can be seen from figure 6). On the scale 1 to 5, 1 meant not liking video games at all, and 5 meant liking a lot. This could mean that many respondents like video games a lot, but at the same time it

is likely that people who decided to answer the questionnaire, were mostly at least a little interested in video games and, therefore, liked them as well.

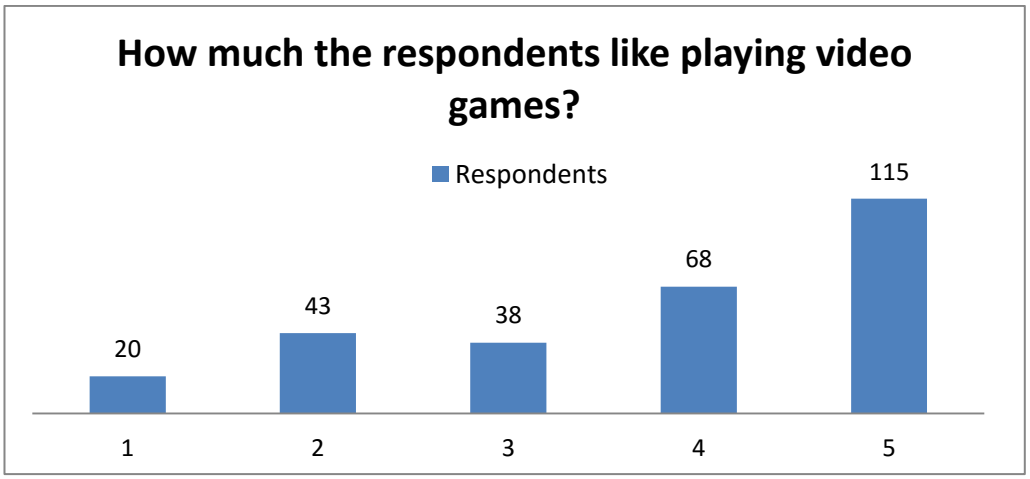

Figure 6. Do the respondents like playing video games?

From table 2, the playing and the buying habits of the respondents, concerning video games in general can be seen. The top five answers are divided into five columns, the first being the most popular answer, the second being the second most popular answer etc. As a conclusion, most commonly the respondents play video games alone and between an hour or two daily, and the playing is done on a computer. Games are purchased or downloaded from digital distribution platforms (such as Steam), and this is done every year.

	1st	2nd	3rd	4th	5th
What do you use for playing?	PC (73.6%)	Mobile phone (51.4%)	PlayStation (43.7%)	Xbox (15.8%)	Wii (12.0%)
How often do you buy video games?	Every year (31.0%)	Every month (21.8%)	I don't buy video games (14.8%)	Less frequently than every year (11.6%)	I only download free games (9.8%)
Where do you buy/download video games from?	Digital distribution platforms (55.6%)	App stores of mobile phones (43.3%)	Online stores (40.1%)	Electronics stores (26.1%)	I don't buy video games (12.0%)
How often do you play video games?	Daily (29.6%)	Several times in a week (25.4%)	Several times in a month (11.3%)	It varies (10.6%)	Several times in a year (8.1%)
How much time do you usually spend on playing video games?	An hour or two (36.6%)	Several hours (28.6%)	Less than an hour (15.4%)	It varies (9.9%)	Less than 15 minutes (8.4%)
If you play games, you usually play..	Alone (82.8%)	With a friend/friends (44.0%)	With friends or strangers in the internet (28.4%)	With a partner (24.6%)	With a sibling/siblings (14.2%)

Table 2. Playing and buying habits of the respondents

When analyzing table 2 in more detail, in addition to a computer, PlayStation and mobile phone are popular choices for playing. This kind of information could be relevant when a company is thinking about different headsets and which platform a company should focus on if games were developed. It seems that a PC (and therefore Oculus Rift & HTC Vive) would be a good choice. However, a PC for virtual reality games has to be really good, and most people have computers that just cannot reach the VR requirements. VR games for mobile phones could be a good idea that probably gets many customers, as the requirements are not that high and the headsets are cheaper. However, it is hard to make a lot of profit from mobile games, as people are not ready to pay that much for them (or at all). PlayStation has also a lot of popularity, and could be also a good option, if the actual headset works well (the headset it released later this year). A lot of people already have a PlayStation 4, and the price of PS VR headset is a lot lower than Rift and Vive. PlayStation owners also might have some kind of customer loyalty that could make them choose PS VR headset over the others.

When thinking about the platforms the respondents use for game purchases, App stores of mobile phones and online stores were popular, in addition to the digital distribution platforms. It seems that the respondents want to buy games easily and quickly, which is not surprising. VR games are already found in these kinds of places (Steam VR, PS store, Oculus store, App stores of mobile phones etc.).

Most commonly the respondents play alone, but often with a friend or a stranger (on the internet) as well. Therefore, virtual reality games likely would be played alone most of the time, but it seems that there is a lot of need for VR games that have a choice for social interaction as well. The respondents usually spend less than an hour to several hours when they play. However, VR games with headsets might be a bit different thing, as the headsets could feel a bit heavy and the player could feel sick or tired after a while (depending on the headset, the game and who is playing as well). Therefore, the playing time could be shorter. However, if the player does not have these negative feelings, VR games could be played for a longer time, as the games are more immersive than normal video games.

After the general video games questions, the questionnaire moves into virtual reality. The first question asks if the respondent is familiar with virtual reality or not. A little over half know about virtual reality, while 21% does not. The rest knows a little. This result is likely like this because the questionnaire was sent to video games enthusiasts and mostly people who like video games also answered the questionnaire. Video game enthusiasts more commonly than others know about the latest trends in the game industry.

The next question asks where the respondent first heard about VR. Most people either do not know, have heard about it from a friend/family member, or saw something about VR in websites concerning games. The most common social media was YouTube. A lot more advertising is needed in order to make virtual reality more known. Many are also hearing VR information from their friends/family member, and this means that a lot of positive experiences in VR are needed. YouTube is also a great place, since consumers can see the actual game play happening, and possibly other players' reactions to different games. There are a lot of players in YouTube who do this as a job, and they have a lot of followers. Advertising in YouTube might prove quite efficient.

About half of the respondents are interested in playing VR games (as can be seen from figure 7).

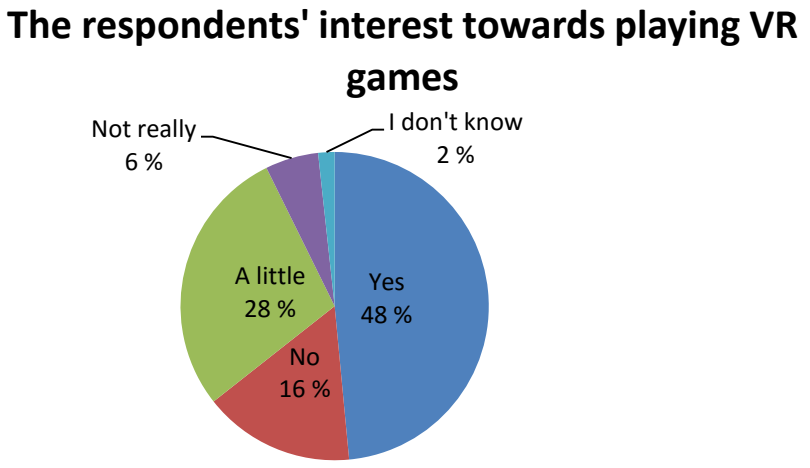

Figure 7. The respondents' interest towards playing VR games

When asked why the respondents do not want to play VR games, the most common answers were (figure 8) the high prices, the technology improvement needs, the low amount of good content and the low interest towards VR games. This result supports earlier findings of the thesis, as most of these are the problems that were analyzed before. It seems that one problem is also that the respondents do not know enough about the subject yet, which will likely be solved in the future through more advertising.

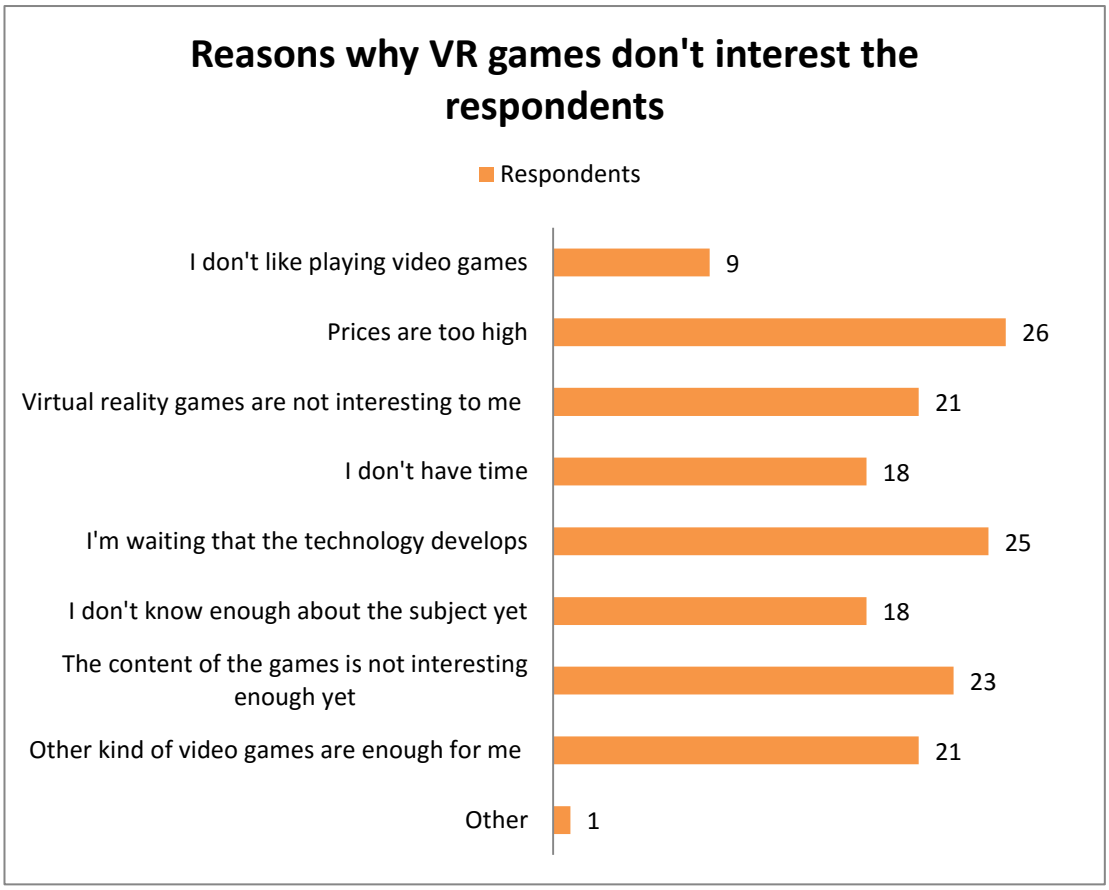

Figure 8. Why the respondents are not interested in playing VR games?

When considered the headsets, only 9% of the respondents who know about VR did actually own a headset. This is probably partly because the headsets came to the market quite recently and these respondents belong to either early adopters or early majority. The most common headset that the respondents own is the cheapest option, Google Cardboard (or a version of it). A few of them also owned Oculus Rift, Gear VR, Vive or some others, but not that many owned these (yet?).

However, 41% have tried their own or someone else's headset(s). Mostly they have tried Oculus Rift or Google Cardboard. Many (28% of the people who had tried) had also tried Samsung Gear VR. It seems that right now there is a lot of interest towards the cheaper headsets for mobile phones, which is not surprising as most of the respondents want the prices to go down and also, mobile phone games are highly popular right now.

52% of the respondents who have not tried a VR headset yet, are eager to try them. 36% do not know yet if they want to try or not. As can be seen from figure 9, mostly the respondents want to try Oculus Rift, HTC Vive or PlayStation VR, which means that a lot of interest towards the more expensive headsets exists.

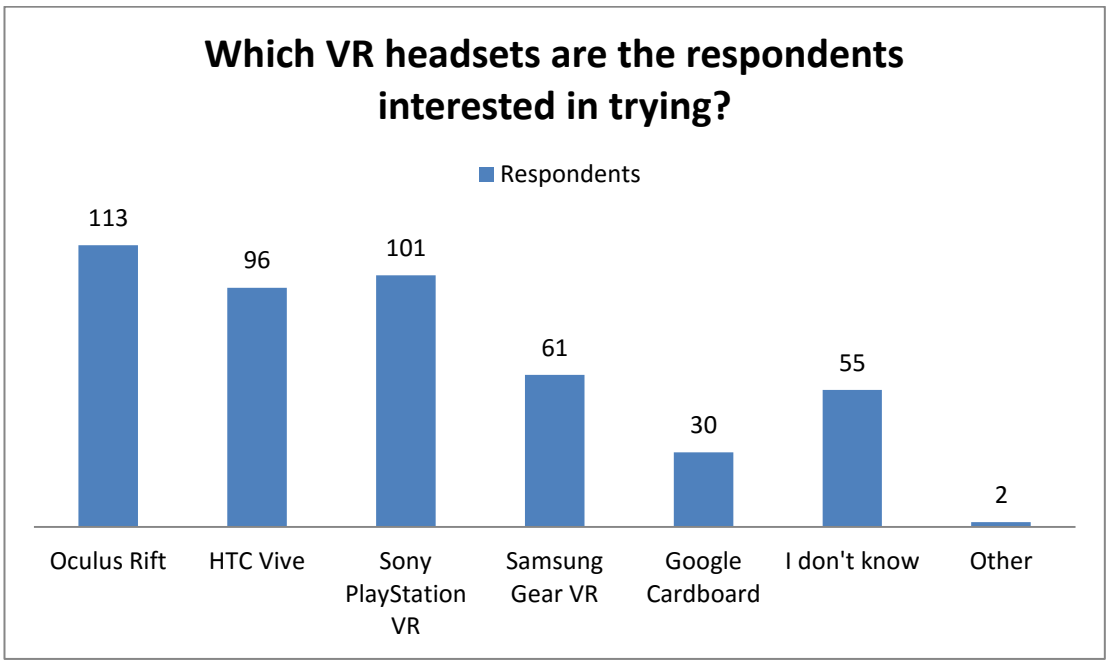

Figure 9. Which VR headsets are the respondents interested in trying?

In the future, the respondents are planning to buy mostly one of these three most expensive headsets. 15 want HTC Vive, 12 Oculus Rift, 16 PlayStation VR and 6 want either HTC Vive or Oculus Rift. Samsung Gear VR have lower popularity, and one of the reasons might be that for these expensive headsets the are a lot of quite fine games available, but it seems that for Gear VR and Cardboard, the games are quite poor and low quality, and the experienced motion sickness might be too much to handle (depending on the game as well).

There has been a lot of talk about the prices of the headsets, how they are too high. How much then are consumers exactly ready to pay for them? According to the questionnaire, most people do not know or are ready to pay 101-200€. However, it seems that customers to each price range exists (except price 601-700€). More specific information can be found, as figure 10 demonstrates.

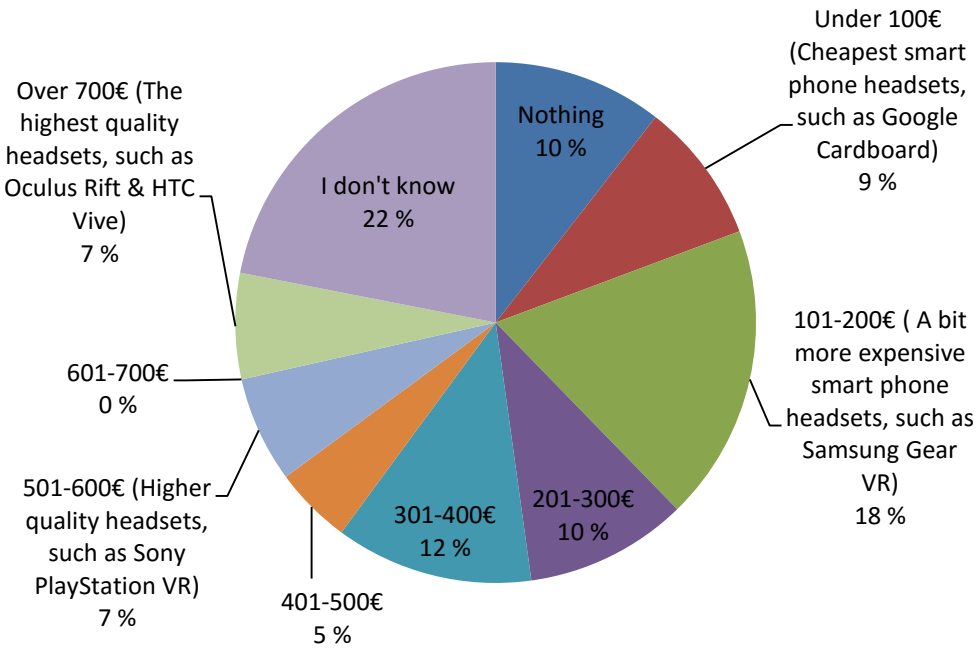

Figure 10. How much are respondents ready to pay for a headset?

Therefore, the respondents want or are going to buy the expensive & high quality headsets, but are not ready to pay the price. The problem in this could be that they are then going to wait around for so long for the prices to go down that they are not interested in virtual reality anymore/something more interesting has come along, or that VR starts to get a lot of loss because of all this waiting.

The factors that the respondents most value when they are considering to buy a headset are **price, the picture quality, the comfort of the headset** (includes motion sickness) **and the amount of compatible applications** (such as games & movies). The platform (for example a smart phone, PS 4 or PC), freedom to move and a wireless headset are also considered as important factors.

When asked what form of VR interests the respondents, video games were the definite number one (80.1%). However, there is a lot of interest towards VR movies and TV shows (50.0%), VR "travelling" (43.6%), psychological VR games (might help with phobias etc.) (28.2%), VR teaching programs (27.3%) and VR events (such as sports events & concerts) (26.4%). Therefore, it seems that consumers are interested in using VR in many ways. This is a very positive thing, since one of the reasons why VR might be popular in the future could be that it can be used in so many ways and different kind of people can fill their different needs with it. Likely and hopefully a lot of content to all these categories will be available in the upcoming years.

It is also interesting to know what kind of games consumers exactly want to play with a headset. According to the questionnaire, most interesting game types are adventure games, action games and action-adventure games. A lot of interest towards other kind of games exists, as can be seen from figure 11.

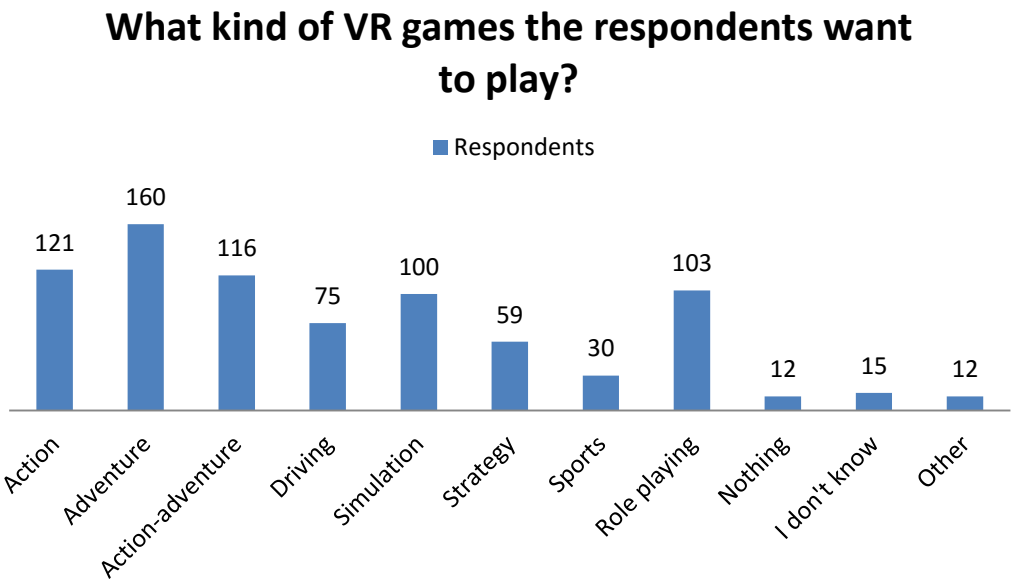

Figure 11. What kind of VR games the respondents want to play?

The last question asked in the questionnaire is about the satisfaction level towards the respondents' VR experiences. The question is in the scale 1 to 5, 1 being not satisfied and 5 being satisfied. 85 answered this question and most of the respond-

ents answered number 4 (43.5%) or 3 (35.3), which means that they were quite satisfied, but there is some (or a lot of) room for improvement. Few (8.2%) answered that they were satisfied, and some (5.9%) answered that they were not satisfied at all.

At the end of the questionnaire the respondents had some room to answer why they were not satisfied with VR games or headsets. It seems that many of the "not satisfied" answers are because the respondent have tried only the cheapest headset, Google Cardboard (or similar), which seems to cause a lot of motion sickness and the few games are of low quality. Other complains, in addition to low quality and motion sickness are, for example, low resolution, low amount of games, too high prices and the wires of the headsets (disturbing the experience). It seems that consumers want the headset companies to get rid of wires in order to get better and more immersive experiences. Some positive feedback, for example about HTC Vive's hand controllers and its higher quality experience, is received. Some of the respondents say that they have tried only the development versions of Oculus Rift, and at least then, it did not yet answer the expectations.

All in all, it seems that the respondents are quite interested in VR and think that the actual experience could be amazing, but they are waiting for the technology and the games to become better, like said before. But again, it seems that a lot of people have not tried the better quality headsets yet, so it is too soon to tell if these headsets answer their expectations and if they think there are some good games available. Also, it seems that many of the respondents who like video games are also eager to try VR games. Since there is a lot of interest towards video games in Finland, there are also many potential VR customers.

6.5 SWOT Analysis about Virtual Reality Games

Figure 12 demonstrates the SWOT analysis about virtual reality in general. The analysis is made in a global level, since virtual reality's position only in Finland is not that strong yet. Some factors in the SWOT are information from the other parts of the thesis and therefore, they work partly as a summary and a reminder. Other factors were found using secondary data internet sources. In this case, the

idea of the SWOT is to make the virtual reality's situation clearer for the reader and for the case company. After the figure, different factors in each part of the analysis are explained more thoroughly.

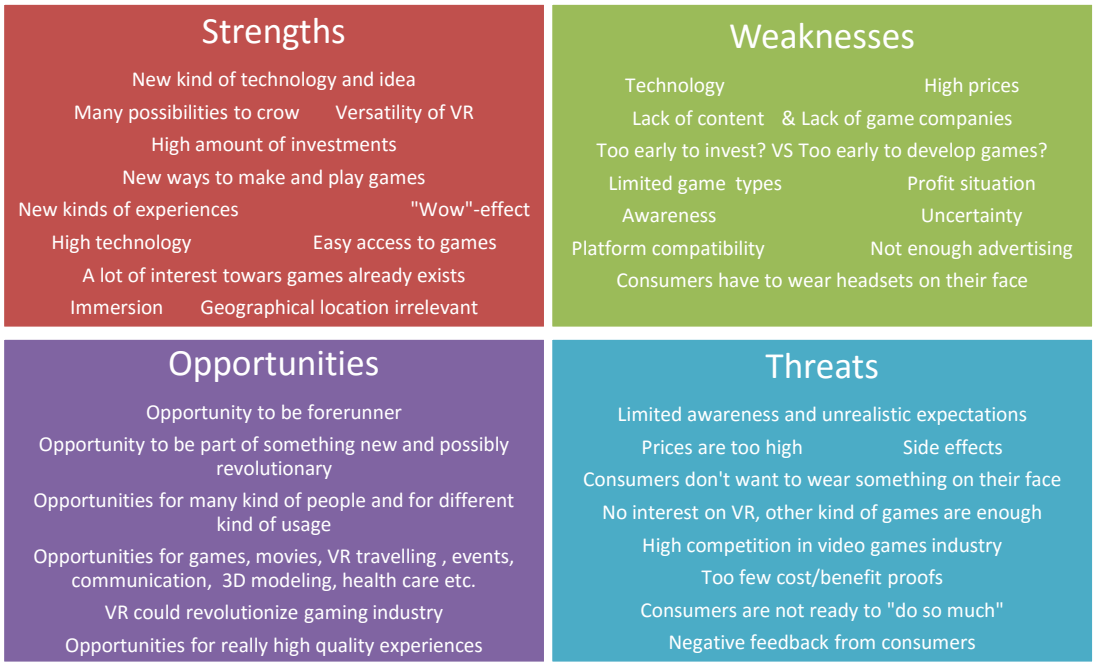

Figure 12. SWOT about virtual reality

As can be seen from figure 12, there are many strengths and opportunities but also weaknesses and threats when thinking about virtual reality globally. Not all the factors made it into this SWOT, but the most important ones are there.

The obvious strength in VR is that it is a new, exciting and innovative technology that consumers have not experienced before. Because it is so new a thing, it also has many possibilities to crow. Since we are in the beginning of virtual reality's timeline, nothing is yet stopping it from becoming a big at some point. If the technology improves, even more high quality experiences can be reached. The technology is also a weakness and a threat. There is still a need for a lot of improvements in the VR technology. At the same time, consumers have really high expectations towards VR, since the hype of VR has been ongoing for years. If consumers feel that the high expectations are not answered, it might lead to another failure of VR, like in the 1990's. Other kind of negative feedback from consumers can also be a threat.

Competition is not that high yet when it comes to virtual reality directly. Competition in the game industry in general is a whole other thing. However, this opens an opportunity to being a forerunner in virtual reality. By entering the VR market, a company also gets a chance to be a part of something possibly revolutionary.

One big problem in the VR industry right now is that, in order to ensure profit, companies are waiting that VR gets "bigger", more clientele exists, and more people are aware of VR. At the same time game developers are waiting for the same thing, as it is not profitable to develop an expensive and challenging game if there is no market for it. And while companies are doing this, consumers are waiting that more content is available and that the prices are not that high. This whole situation could lead to virtual reality's failure. The success of virtual reality lies in the hands of its developers. (Extra Credits 2016)

Right now game developers are mostly developing demo-like games that take only couple minutes to play through and the quality of the games is not that good, at least for the cheaper headsets. There are some higher quality games available, but still, VR industry lacks proper content, which is a big weakness at least for now. There is not enough cost/benefit proofs yet when it comes to virtual reality, and this could affect the companies' willingness to enter the industry. One big question is what kind of content companies should create with VR, and this is why it might take a while for some companies to enter the market.

A strength for virtual reality is that it can be used in so many ways. As mentioned earlier in the thesis, VR can be used, for example, in video games, healthcare, education, movies and events. It can also be used to help with fears and like in healthcare, the training and learning can be done in a safe way. Some other ways to profit from VR are to use it for customer loyalty by giving customers deeper emotions, and for real estate industry, by making for example house showing easier (Gerber 2016). There are also opportunities for different kinds of communication that could make people build stronger connections with each other, and 3D modelling that could be a big help with, for example, designers (Scherba 2015).

The list continues, as different professionals are continuously coming up with new ways to benefit from VR.

Therefore, the users of VR equipment are not necessarily limited to basic video game players. Since there has been a lot of hype about virtual reality, also a lot of VR investments have been made. Many people do want VR to be a success and are working hard in order for it to happen. VR also opens new ways to play and experience, and it gives the possibility to have the strongest “wow”-effect that game industry has ever experienced before. This means, that the player gets a chance to feel deeper emotions that normal video games just cannot give. This, of course, is an asset, if the headset and the games actually work properly.

Other strengths are high, advanced technology and easy access to games and applications (Steam VR, app stores etc.). Also, location geographically becomes irrelevant, as consumers can reach a lot of places and people through their headset, and easily get games that are developed in the other parts of the world. The last strength in the list is that a big clientele already exists in gaming industry, and therefore, a lot of interest towards games also exists. A virtual reality game is a slightly different kind of a game than others, but it still fulfills partly the same needs that people are looking for in video games.

One problem with VR is that it does not work with all kinds of games. Strategy games like Dota or League of Legends just does not work with VR, or does not even need it. As these kinds of games are highly popular, and if VR does not develop these kind of popular games, many consumers will be left out of the VR market. Another problem is that game developers develop games for a certain headset. They spend a lot of money developing the game for this specific headset, and after that they often spend a lot of money developing the game to some other headset as well in order to get more clients. However, the problem could be that the game is working with its full potential only with the first, primary headset. With other headsets, there might be some lack of quality with the game, and this leads to negative feedback from consumers. (Extra credits 2016)

When thinking about consumers' behavior, there are several weaknesses and threats to consider in VR. One important thing, which is also earlier mentioned in this thesis is before, people have not really liked the fact that they have to wear something on their face. Therefore, wearing a headset might need some behavioral changes that majority of people do not necessarily want to make. Another important threat is also that even if the prices of the VR equipment go down, a lot of content is available and everything works well, some people still simply might not find virtual reality very interesting. Some might think that other kinds of games are enough for them. Also, consumers might end up thinking that with the headset and VR, they have to move and do too much. If a person wants to play in order to relax, some kind of VR games might feel like the opposite with a lot of movement requirements. Game companies, therefore, have to find some way to avoid this consequence. While the technology is still developing, the headsets and the games might still have their flaws. Some possible side effects, especially motion sickness could be a threat.

It is estimated that most of the expensive, high-end PC and game console headsets this year will be purchased by hard core gamers and early adopter enthusiasts. A big reason for this is the high price that the equipment currently has. The major game publishers are waiting for a higher number of consumers to have these higher quality headsets and when it makes financial sense for them to build their own VR content, they will enter the market as well. (Raskind etc. 2016)

7 CONCLUSIONS

7.1 Summary of the Thesis

Strengths of Finland are that it is a country with a skilled workforce and favourable business environment. Living standards are high and equality among the population is high. Rule of law is strong and corruption is low. Weaknesses of Finland, however, are that the country's economy is very vulnerable to international economic conditions and changes and the ageing population is bringing some challenges. The economy has been on recession for a few years, but it is expected to get a little better on 2016. In the macro-environmental analysis it is also mentioned that Finland is a good country for R&D, innovations and new kind of products. Both companies and consumers are happy to adopt new technologies in the early stages.

Why Finland especially could be a good country for virtual reality is that the game industry is already a big thing in Finland and the industry is also crowing fast. It might be possible that virtual reality will grow with it, if companies start to adopt this new technology more. There are a lot of success stories among Finnish technology and game companies, and it encourages consumers to build their own companies and own games. A lot of people are interested in games and are eager to try something new as well. Right now most of the game companies are concentrating on developing mobile games. The business environment in the Finnish game industry in general seems encouraging and innovative and there is a lot of cooperation between different companies. Competition and other companies are not a problem right now, at least for a VR company. Different organizations are supporting startups continuously, and this makes it easier for consumers to develop their own ideas. A lot of education is provided to people who are interested in the gaming field, and since the education often is free of charge, everyone who wants can try to enter to study gaming. More skilled workforce, however, is needed in the game industry.

Virtual reality is risky right now, since it is so new thing. The opportunities and the potential of VR are huge but so are the possibilities that it will end up in fail-

ure. Only a couple game companies in Finland are developing VR games right now, at least publicly. Likely other companies are waiting for VR to become more common amongst consumers and, therefore, for the whole industry to become less risky. The VR headsets are quite expensive right now, so it is still not known if people really are ready to spend that amount of money on them. According to the questionnaire, there are clients to all price groups, but likely a big part of the respondents are waiting for the prices to go down or they are just buying the cheaper headsets. It is also still unclear if consumers like the whole experience at all after trying the headsets and if they like it, will it be enough to make VR to last.

Even though the virtual reality games –industry is risky right now, it seems that the companies that are actually developing the games get some extra publicity in Finland, since VR games in the country are still rare. It also seems that one reason for VR's possible success could be that so many companies, individuals and organizations are "pushing" VR's success, as they really want it to happen. It is likely that in some way, VR will be a success in the future, but it might take even ten years for it to really be something that the majority of people use every day.

It seems that not enough people know about virtual reality yet so more advertising and exposure is needed in order to raise awareness. In order to make virtual reality popular to also the majority, a lot of programs, events and advertisements promoting VR should be done. Companies should find ways to reach a common consumer who might be a potential customer, but who does not really follow the latest trends. Virtual reality has also a lot of potential when it comes to other things than just video games. Therefore, consumers interested in, for example, "travelling", teaching or viewing events (concerts, sports events) or movies through VR headset should not be forgotten, if a bigger clientele to virtual reality is pursued. These other VR "groups" might be one of the reasons why VR could be used widely in people's everyday life in the future. Therefore content for both VR games and for these other purposes should be created in abundance, in order to ensure a successful future for virtual reality.

Virtual reality needs many changes in the technology, in the prices and in consumers' behavior. It seems that virtual reality's success needs time, as majority of people are not likely adapting to this new technology that fast. According to the questionnaire in this study, it kind of seems that consumers are not exactly sure what they want yet, but they seem excited and interested about VR and new technologies. What consumers do want for sure is the lower prices, high technology and good content for the headsets. A lot of people need some kind of persuasion in order to make them buy the products, but for some of them it might not be that hard, as they already seem eager to know more about virtual reality. Awareness and exposure of virtual reality headsets and games will likely increase the purchase amounts of VR equipment and games. More proper and good games are needed, as the games are a big reason for a headset purchase in the first place.

Some big problems in the industry are too high expectations, feeling of motion sickness and a lot of companies and consumers waiting around. More time is needed in order to know if these high expectations will be answered. Motion sickness is still a problem at least with the cheaper headsets. Likely with the more expensive headsets and their high refresh rates, the motion sickness problem is gone or nearly gone, depending slightly on the user, the platform (PC, console etc.) power and the games played as well. More development is still needed in this area. However, more accurate information can be received when more consumers have tried these headsets and more games with good quality are available. One solution for this could be simply that better and right kinds of games are available. Certain kinds of games are less likely to cause motion sickness less likely. The third problem is that consumers are waiting that more games are available and the prices are cheaper, and at the same time companies are waiting that there are more customers, as then it is safer to invest.

7.2 Reliability and Validity

Reliability is about quality measurement and more precisely, an ability to repeat the measures and results of a study. The results have to be repeatable and not random, and this makes the study more trustworthy. Therefore, a study or a measure

is reliable, if it could give the same results if repeated over and over again. Assuming, of course, that the measured thing is not changing. (Anttila 2006)

The trustworthiness of a research is called validity. The research is meaningless if it is not valid, since it means that something else than the research problem is being studied. A valid research result is something that is similar to general theories on the subject, or the result is able to specify other trustworthy information. Traditionally validity means the research method's ability to examine the thing that was meant to be researched. (Anttila 2006)

Two research methods used in this thesis were the questionnaire and the interview. The questionnaire was carefully planned and translated to two different languages. The translation process was done so that the questions in the English version are equal to the Finnish questionnaire. The questionnaire was first sent to a small test group in order to make sure that there are no mistakes. After the test group, the questionnaire was sent to other consumers. A lot of people answered the questionnaire (284) and at certain point of the process, the answers did not make any change to the results. This means that there were enough answers and more answers would not change the result anymore. The questions were simple and designed so that reliable and valid answers are received. Therefore, considering the high number of answers and the type of the questions, the questionnaire can be seen as reliable. If the questionnaire was conducted again among the same kind of respondents, the result would be the same. However, the answers to some questions might change slightly when the industry develops and when the respondents get more experiences in virtual reality field. In order to make sure that the results are trustworthy, other global research results were kept in mind while analyzing the results, and the results were similar to other global findings.

The interview was planned so that the questions and the answers acted more like a support to the other findings. The answers basically just ensured that other results of the questionnaire are trustworthy and no important information is missed. Since the interview was send to only one person (as the main research method was the questionnaire), bigger conclusions were not made based on only these answers.

However, they were combined to other findings, if they agreed with the other information. Some interview answers were written in the thesis as an interesting opinion of the respondent, but bigger conclusions were not made from these. Some of the answers would likely be a little different if the research was answered by someone else from the field, but the most important and valid answers which also support the other findings would likely be basically the same.

When analyzing the validity more closely from the traditional perspective, both the questionnaire and the interview can be seen as valid researches. The objective of the thesis is "to find out the current state and the potential of virtual reality games –industry in Finland." The objective is then divided into three categories from which the questionnaire answers to the category 3 and the interview partly answers to the categories 1 and 2. Category 3's and also the questionnaire's objective was to find out Finnish video game players' expectations, opinions and hopes concerning virtual reality games. This objective was reached and the questionnaire can be seen as valid. The interview's goal was to give supportive answers to opportunities and challenges of virtual reality games –industry and virtual reality in general. The goal was not to give all the answers to these two categories, but to give supportive answers and opinions that more like specify the other information found. Therefore, the interview reached these objectives and can be seen as valid as well.

7.3 Recommendations

For the case company Vivendi the recommendations right now, based on this thesis, are that if they want to invest in this risky, but possibly revolutionary new and interesting thing in the gaming field, they should. The industry is changing fast and more and more companies want to be part of it. Virtual reality has endless possibilities not only with video games but in in other areas as well. However, all the risks should be considered carefully, and further research is needed if big investments are planned. However, Finland seems a little more potential and attractive place than some other countries if a company wants to invest in something new and innovative. New technology adaption is high in the country, and the

game industry already is a part of the culture and people's lifestyles. That being said, virtual reality is different than other games and need some changes in people's behavior, so that should not be forgotten. Since virtual reality is a new thing in its current form and it is changing a lot right now and in the following years, market situation updates are necessary continuously if there is some interest to invest in VR at some point.

Future research suggestions, for example for students, could be to examine VR more deeply, do another update later on VR's situation and potential in Finland or globally -as the industry is changing fast - or do a VR analysis from a different point of view (for example psychological, financial etc.). Another interesting thing is virtual reality's' "brother", augmented reality. Augmented reality could even turn out to be more successful than VR in the future, but that is hard to know yet.

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APPENDICES

APPENDIX 1

QUESTIONNAIRE ABOUT VIDEO GAMES AND VIRTUAL REALITY (in English)

21.4–26.4.2016

The purpose of this questionnaire is to find out consumers' opinions, expectations and wishes concerning video games and virtual reality games in Finland.

*Required

1. What is your gender? *
   - Male
   - Female

2. How old are you? *
_____

3. You are *
- Permanently living in Finland
- Temporarily living in Finland
- Other:_____

4. Your employment status is *
- A student
- Unemployed
- Student with a job
- Full-time worker
- Other: _____

5. Do you like playing video games? *

	1	2	3	4	5	
Not at all	□	□	□	□	□	Yes, a lot

6. What do you use for playing? You can choose more than one answer. *
- Computer
- PlayStation
- Xbox
- Wii
- Mobile Phone

- I don’t play
- Other: _____

7. How often do you buy video games? *
- Every week
- Every month
- Every year
- Less frequently than every year
- I don't buy video games
- I only download free games
- I don't know

8. Where do you buy/download video games from? *
- Electronics stores
- Online stores
- Digital distribution platforms (such as Steam)
- App stores of mobile phones
- I don't buy video games
- Other: _____

How often do you play video games? *
- Daily
- Several times in a week
- Several times in a month
- Several times in a year
- Less frequently
- It varies
- Never

How much time do you usually spend on video games during the days when you play (if you play?)
- Less than 15 minutes
- Less than an hour
- An hour or two
- Several hours
- Whole day
- It varies

If you play games, you usually play
- Alone
- With a friend/friends
- With a partner
- With a sibling/siblings
- With your children
- With friends in the internet
- With strangers in the internet

- Other: _____

Questions about virtual reality

Are you familiar with virtual reality? *
- Yes
- No. You don't have to answer to the following questions.
- A little

If you are familiar with virtual reality, from where did you first heard about it?
- From a friend/family member
- Facebook
- YouTube
- Twitter
- Instagram
- Twitch
- From websites concerning games
- From events concerning games
- From newspapers/magazines
- I don't know
- Other: _____

Are you interested in playing virtual reality games?
- Yes
- No
- A little
- Not really
- I don't know

If you are not interested, why not?
- I don't like playing video games
- Prices are too high
- Virtual reality games are not interesting to me
- I don't have time
- I'm waiting that the technology develops
- I don't know enough about the subject yet
- The content of the games is not interesting enough yet
- Other kind of video games are enough for me
- Other: _____

Do you own a virtual reality headset/glasses?
- Yes
- No

If yes, which one/ones of the following have you already tried?
- Oculus Rift
- HTC Vive

- PlayStation VR
- Samsung Gear VR
- Google Cardboard
- Other: _____

If you haven't tried, are you going to?
- Yes
- No
- I don't know yet

Which virtual reality headset(s) are you interested in trying? Choose 1-3.
- Oculus Rift
- HTC Vive
- Sony PlayStation VR
- Samsung Gear VR
- Google Cardboard
- I don't know
- Other: _____

If you are planning to buy a headset, which one are you going to buy?
_____

How much would you be ready to pay for virtual reality headset? / How much have you paid for your headset?
- Nothing
- Under 100€ (Cheapest smart phone headsets, such as Google Cardboard)
- 101-200€ (A bit more expensive smart phone headsets, such as Samsung Gear VR)
- 201-300€
- 301-400€
- 401-500€
- 501-600€ (Higher quality headsets, such as Sony PlayStation VR)
- 601-700€
- Over 700€ (The highest quality headsets, such as Oculus Rift & HTC Vive)
- I don't know

If you are planning to buy a virtual reality headset, which of the following factors do you think are the most important ones? Choose 1-5.
- Price
- Picture quality
- Freedom to move while playing
- The headset is wireless
- Platform for games (such as smart phone, Xbox One, PlayStation 4, computer)
- Appearance of the headset
- Comfort of the headset

- Brand (such as Oculus Rift)
- The amount of compatible applications (games, movies)
- Other: _____

What forms of virtual reality interest you?

- Video games
- "Travelling" with virtual reality
- Teaching programs, teaching games
- Psychological games etc. (can be helpful with fears and phobias)
- Movies and TV-series
- Events (such as sports events and music concerts)
- Nothing
- I don't know
- Other: _____

What kind of virtual reality games would you want to play especially?

- Action games (such as shooting games & fighting games)
- Adventure games (games with a plot)
- Action-adventure games (such as platform games & stealth games)
- Driving games
- Simulation games (such as airplane simulations)
- Strategy games
- Sports games
- Role-playing games
- Nothing
- I don't know
- Other: _____

If you have already tried virtual reality games, how satisfied were you with them?

	1	2	3	4	5	
Not at all	□	□	□	□	□	Yes, a lot

If you were not satisfied, why not?

_____
_____
_____

APPENDIX 2

INTERVIEW OF ANTTI VERÄJÄNKORVA, 24.4.2016

Here are the interview questions for the programmer of Mindfield Games (Finnish game company), Antti Veräjänkorva**.**

1. What is it like to work in game industry and among virtual reality? What is it like to work in a company that is a forerunner in virtual reality? What are the advantages and challenges when Mindfield Games is so ahead of other companies?

- I have been working at gaming industry for 11 years. First 10 I worked at Remedy Entertainment, which was mostly developing big screen console games. I joined to Mindfield a year ago since I wanted to get in to the VR world. First thing I noticed that since we focus heavily on VR we also have all toys related to it. So trying out your crazy VR ideas is easy since office is full VR devices. Biggest difficulty is uncertainty of the future. VR may still flop and that would be bad for the company. We also gain quite a bit of interest towards us since we have been profiled ourselves as a VR developers. It's not uncommon that someone ask us to go and talk in conferences around the world. If we would be just fresh normal game studio we would have lot less people who would find us.

2. What are your own opinions about the current headsets on the market? Are they what you expected?

- Currently Oculus Rift and HTC Vive are the devices. Samsung Gear VR is interesting, but due that phone's performance limitation it's unclear what kind of content it can really run. There is also number of other devices which are more or less unfinished or just simply not good enough. There is already quite many VR games, but not many bit bigger and serious games. Mostly games right now are just small demos or prototypes. Many of them has interesting aspects, but as a whole game they often lack content. Proper VR games are now starting to come out such our Pollen and few weeks ago released Adr1ft are pretty much the first proper VR games. It will take some time before developers figure out how to best use VR in games.

3. What kind of expectations do you or Mindfield Games have on the future of virtual reality?

- I think VR is going to be big. It's new way to tell stories and I think VR devices will be on every home in 10 years time. In few years VR is already going to be big gaming devices, but it will need something more general purpose usage to hit really big. Something like VR phone could make it to break through for non gamers. Before that prices need to go down from 700€ to 300€.

4. In your own opinion, what are the biggest obstacles or opportunities that virtual reality is facing in Finland and in the world?

- Price and extremely high computer hardware requirements.

5. What do you think are the biggest competitors of Mindfield Games among virtual reality or in game industry in general? Or have you noticed any competition in Finland yet?

- Other companies success isn't really away from us. But if you release two similar games at the same time you will obliviously share same customers.

6. Do you think it’s good to own a game company in Finland? What do you think are the greatest challenges and advantages in that? What are the most common problems that a game company in Finland is facing?

- Finland is a good place for gaming company right now since we have so many success stories here and investors are interested about Finnish gaming companies. One big issue is to find people to make games. We don't have enough people locally and we need to hire people abroad and Finland isn't exactly most interesting country. We have long winter and small cities, for some people that is not an issue, but many would rather work for example in UK.

7. Do you have a lot of cooperation with other game companies in Finland?

- We do keep touch and help others by loaning devices or something like such. Companies usually are also pretty open about their technologies after game where it is used is published.

8. What kind of plans do Mindfield Games have for the future? Are you going to continue with virtual reality?

- We are planning to continue with VR, but not forgetting regular screens. Our games will be working with both.

9. Which channel have you noticed to be the most efficient when thinking about purchase amounts and marketing of games?

- So far we don't really have data for that, but I would say Youtube's let's play videos.