

MOBILE GAME MONETIZATION AND TRENDS IN APP STORE AND GOOGLE PLAY

Make your game a successful venture. Analysis of current mobile gaming trends on App Store and Google Play, and a guide to worldwide mobile game monetization as of January 2022.

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Objectives <ol style="list-style-type: none">1. Identify current gaming trends in App Store and Google Play.2. Identify and analyze top grossing mobile games. Create qualitative and quantitative analysis and descriptions of these games.3. Define which mobile game monetization models are trending and which are the most effective.4. Create a guide for developers - what should developers know when monetizing mobile games?
Summary <p>The idea of this thesis is to create a monetization analysis and a guide that will work as revenue generator for mobile games. The analysis conducted in this research is quantitative and qualitative. Quantitativeness can be seen in statistical approach to App Store and Google Play gaming trends as well as interpretation of survey conducted within this research. Qualitativeness on the other hand is seen in the analysis of top 10 grossing games.</p>
Conclusion <p>A statistical analysis on current gaming trends is conducted and the top game categories are identified. The top grossing games are analyzed and described in this thesis. Trending monetization models are identified, with substantial survey findings providing information on effective monetization. Based on main findings, a monetization guide and ideal game descriptions have been created for game developers publishing in App Store and Google Play.</p>
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1. INTRODUCTION

1.1. Background, Mobile Gaming Trends

It is no secret that the mobile gaming industry's growth is skyrocketing, and the number of developers, games and gamers is rising. The industry is growing, and the effects can be seen as far as the usage of people's spare time. Mobile gaming industry is having a progress not only in the games itself but in the technological aspect of gaming too – the virtual reality is making gaming more realistic than ever. With all these options and features that come with the progress it is important to understand what the demand is and what really are people's needs.

During the COVID-19 worldwide pandemic the restrictions applied by the governments and local authorities forced people to spend more time at home. Because of these restrictions numerous schools provided online lectures with study-at-home possibilities for the students. Some of those who work at offices for example were granted possibilities of working from home. This affected people almost on every workplace in one way or another, and it became part of the everyday life and new habits were generated. All these factors led to the rise of gaming since people had to adapt to the situation.

This can be seen in the growth of sold gaming consoles, and the records they have broken. A Japanese console company Nintendo for example, released Nintendo Switch for the first time in 2017, and then they published an updated version of Nintendo Switch again in 2021. Both consoles were successful and according to the company's statement - Nintendo Switch surpassed the Wii as the most sold console of the company with its 103.54 million units sold as of December 31, 2021. (Nintendo, 2021)

Interesting fact about the Nintendo Switch is that it is a console, but it is also mainly used as a handheld gaming platform – just like the mobile devices – tablets and phones. And just like Nintendo's sales, the mobile gaming market is in a rapid growth: "Consoles are still popular but mobile gaming is the industry's fastest growing segment" (Financial Times, 2021)

In this work, one of the main research topics is the monetization of mobile games, and the statistical research will be conducted on this theme. In addition, a deep dive will be taking

place in the game gamers' preferences field – the analysis will be conducted on what gamers are willing to pay for. Monetizing games is an essential part of the business and therefore some materials that are picked for this thesis are based solely on the commercial part of the gaming industry. This work is game developers' guide for monetizing future projects.

1.2. Research problem

This thesis is not about a problem, it is about the opportunity instead. Mobile gaming is on the rise and therefore there are numerous opportunities for game developers to explore. Mobile gaming business is just like any other business. It is about making profit, and in the industry analyzed in this thesis, it is possible by monetizing the games.

A deeper understanding of existing mobile gaming trends, a trend analysis of App Store and Google Play will show the way for the future game development from a financial point of view. This thesis will provide needed and information for maximizing the mobile game monetization.

Monetization of games will lead to better mobile game development. This will be possible through research and findings conducted in this thesis.

1.3. Research Questions

Since this work is about making mobile game ventures profitable the research questions are very closely related to monetization.

What are the gaming trends in App Store and Google Play? This question is answered in analysis below.

What are top grossing mobile games right now? Both quantitative and qualitative descriptions are provided in this thesis.

Which mobile game monetization methods are the best? The analysis of top grossing games and monetization methods used in mobile games provides the needed information to answer this question. Both App Store and Google Play are included in this part of analysis.

What should developers know when monetizing mobile games? This thesis is all about helping developers to create better games with better monetization methods. Every part of this thesis contributes to this question. It is highly recommended to read every part of this work, to understand the basis of the findings. Some of the practical answers and ideas are provided in the 6.3. "Implications for IOS/App Store mobile game developers" and 6.4. "Implications for Android/Google Play mobile game developers".

1.4. Research Objectives

The objectives of this research are following: identifying the current monetization trends in the mobile gaming market, finding the best monetization methods that are being used in top grossing games, and creating a comprehensive monetization guide for mobile game developers.

The importance of this research lays in providing mobile game developers with knowledge and tools for monetization. These tools are based on the latest trends that are taking place in the mobile gaming industry right now. This thesis will provide developers with needed information to efficiently monetize mobile games.

2. LITERATURE REVIEW

2.1. History

In 1980's games operated mainly on the idea of 2D virtual gaming platform that had a fixed viewpoint. This is a decade that is known for many games - such as Pac Man and Nintendo's Super Mario Bro's and a game that is by some sources is called the first platform game – Space Panic. (UK Essays, 2015)

All these games can be united by one thing - there are no additional levels of graphics like in games that operate on 3D platforms. In 2D games the texture is simpler, and there usually are much less details than on a newer generation of games that operate in 3D. Also, there is a fixed viewpoint – the character the player controls are somewhat fixed, and it cannot move inside the game realistically, but rather in very limited number of ways.

In the 1980's and even in 1970's game developers started to experiment new things and one of them was 3D gaming. In 1974 was published one of the pioneers of the 3D games, the name of the game is Maze War, and it was created by Steve Colley in California. The player was intended to be as an eyeball character inside a game and this is how it looked like:

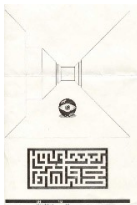


Figure 1.

Maze War



Figure 2.

Maze Wars+ advertisement



Figure 3.

Game itself

In 1981 another 3D prototype game was published, this time by Malcolm Evans – the name of the game was Monster Maze 3D. And yes, there was a new perspective added to the game. Shades in the background created a more realistic picture with more depth.

The progress was slow but steady, and even though in 1980's developers lacked real tools, programming skills, and possibilities to create 3D games with better graphics and greater depth they kept trying and eventually they developed new games. It took gaming industry a while to create something that was counted as a new generation of games. That is what happened in 1996 with the publishment of video game called Quake. The features that were inside this game got to carry a new name: a game changer in the gaming industry. It was a fresh vision and a fresh start for developers around the world.



Figure 4. Quake 1996 (PC Plus, 2010)

Coming to a mobile gaming world there were many things to try and to develop, so the games started simple. As an example of how things looked like in mobile games in 2007 – this was the evolution line people saw back then. (Furini, 2007)

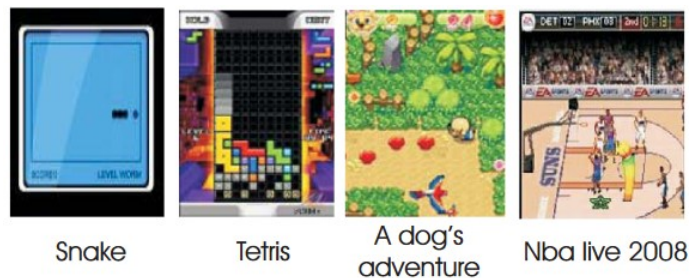


Figure 5. The perception of the mobile game evolution in 2007 (Furini, 2007)

In 2007 networking technologies did not operate at the same speeds as now. If in 2007 devices operated mainly on 2G, 3G and Bluetooth, now there are available many more technologies to utilize in the mobile devices and games such as 4G and as a new, progressing technology – the 5G network alongside with faster Wi-Fi connections. Faster download speeds, better gaming experiences, and better graphics – all these things are possible to achieve thanks to constant evolution of technologies within the mobile industry and the infrastructure that is being built around it. Technology, software, and games are in constant development.

Next, the focus will be moved from historical past of games that people call now retro to the new games and current trends on one of the fastest growing platforms: modern gadgets such as smartphones and tablets that are compatible with mobile games.

2.2. Current Trends, Modern Mobile Gaming

Currently, in 2022 we are talking about different types of games – such as PUBG Mobile and Fortnite - both are 3D and realistic multiplayer shooter games. Then there is Pokémon Go, that is a mixture of our world and the virtual version of it by utilizing Global Positioning System (GPS) technology just like Google Maps or Apple's variant for IOS devices - Maps. The difference is that player can interact with different places on the virtual map and gain in-game currencies, experience, and in-game level by being active in this game.

And of course, there are other popular games in 2022 such as Roblox, Honor of Kings and many more. What unites all these things? The usage of new technologies. Every single one of these games operate as multiplayer gaming platforms that utilize good network connection and bandwidth.

In addition to multiplayer games there are other types of games to add to the list. So, there are three different types of mobile games. One of the representatives are the single player games, which are created with the idea of player playing alone. To make player interested in the game, the plot is usually more complex rather than in multiplayer games, which represent another game type that will be used for market analysis.

Multiplayer games are a growing type of games, and the idea is based on players playing and communicating online, in the real-time manner. These games represent trends that we see taking place now in the mobile gaming market.

A third type of games is a mixture of the previous two – these games usually contain both single player and multiplayer gaming options.

And of course, not to forget, the VR - which stands for Virtual Reality - is making its way to gaming world on all platforms – consoles, computers and smart gadgets and mobile devices. VR represents new growing technology, and the idea is built around gamer being fully immersed in the gaming experience. The VR games need a specific headset that is suitable for the VR games. The game is being projected straight to gamers eyes right through lenses. In addition to the headsets, gamer usually has some type of controllers that can be controlled using hands. By movement and the buttons pressed on the controller player is able to have

an impact on what happens inside the game – whether it is a movement of the character or some different action suitable for game situation.

The VR games can be enlisted to the same three game types listed above: single player, multiplayer and mixed. In addition to that all the games mentioned above fall under a certain category. In the next section and in the work in general, a great amount of focus will be projected on the mobile gaming categories.

2.3. Mobile gamers´ Preferences and Monetization

2.3.1 Preferences and Game Categories

Different players have different visions of what they want to see in games and what they want to play. It is important to understand and make classifications and segmentations of different gaming aspects such as game categories and monetization methods.

The game types in this research are broken down to classifications which are called game categories. There are many categories that mirror mobile gaming market demand – one of the most popular genres are action, arcade, role playing, simulation, adventure, and puzzle. In addition to these, there are many other categories too, and they will eventually come up in the analysis.

2.4. Monetization

The monetization of games will play a big role in this work. An excellent example of analyzing the monetization is provided in a work published in 2021 as follows:

“In this section, an overview of the different monetization methods is given, with practical examples of the implementations of the methods in certain games. The Pan European Game Information (PEGI) suggests that any purchases that add new content, game functionality, features upgrades for a particular game, and are made during gameplay are to be considered as an in-game purchase.” (PEGI 2017, as cited in Lehtimäki, 2021, p. 14)

This short introduction to monetization can be found in section 4.2 of Lehtimäki's work – "Different game monetization methods". In the same section there are listed the monetization methods such as subscription, in-game currency, loot box and direct purchases. The basic understanding of the monetization techniques will still be provided in this thesis like in the work cited above, but the magnifying glass will mainly look at a different problem. "The freemium business model has gained popularity especially in the software as a service markets in the recent years. Mobile games have been one of the major applications of freemium business models and this model is specifically called "Free-to-Play" or "F2P". (Nieborg, 2016, as cited in Koeder, Tanaka, 2017, p.3)

Different games operate on different monetization mechanics, and one of those is the freemium business model. It is gaining popularity very fast, and it is generating big revenues. "In these F2P games only about 2% of the players pay for premium services (Swerve, 2016) in the form of micro transactions/in-app purchases. Yet games like Clash Royale by Supercell have created a revenue of 1 billion US\$ within less than a year after launch. (Sachdeva, 2017). This business model is not without issues. " (As cited in Koeder, Tanaka 2017)

"Generally, developers have three avenues to monetize their apps: 1) paid apps, where users pay up front; 2) in-app purchases, whereby apps charge users to unlock extra features; and 3) the introduction of advertisements, which can be in the form of banners or videos, to name but two. Using these avenues for monetization, four business models have come about in the industry: freemium, paid, paidmium, and in-app advertising." (Tang 2016)

When it comes to monetization there are different monetization techniques to be used in the games – some games are monetized straight from the beginning – before player has even downloaded the game. These are called "paid" games. In this scenario player must purchase the game before getting the chance to play. These games are not represented in any top 10 list that is used in the monetization analysis – just for lack of profitability of this monetization technique. What comes to "freemium" or alternatively - "F2P" games, this is the trending monetization type right now. Only these games managed to get in top 10 grossing lists both on App Store and Google Play.

"The word "freemium," comprising the words "free" and "premium," describes a business model that earns solely from in-app purchases (IAPs). Users make IAPs for

extra benefits and value, such as additional functions, upgrade of an app for full content and services, and removal of advertisements popping up on the free version. Freemium models are common in games categories because no upfront download fee is charged, so as to entice a larger number of users” (Tang, 2016, p.225)

With all commercialization options available it is reasonable to have a good statistical and financial understanding of the methods. It is important to pick the right one for the project and it is not a simple choice to make. This work is aiming to aid those that need a better understanding of this topic regarding this dilemma.

The dilemma is real and sometimes the monetization methods might not work as planned: “A microtransaction is a small monetary purchase for virtual goods within a game. Some might ask what the issue is. If a player wishes voluntarily to put money into a product, who is to fault? Besides, some good DLCs can add to the gameplay experience rather than reduce it. After all, games are products like any other, aiming to make a profit. Purchased microtransactions can benefit the players by cutting the time it takes to grind through the tedious gameplay. However, the negative effects of microtransactions on gameplay and user experience are undeniable.” (Tanskanen, 2021, p.2)

2.4.1. Monetization problems: 2 examples

Electronic Arts: Case Star Wars Battlefront 2

Monetization has been truly a dilemma for some developers and a great example comes from one of the biggest game developer companies – Electronic Arts. A game developer company called Electronic Arts, also known as EA, is expected to generate a Net revenue of \$6.925 billion by March 31 of 2022. (Electronic Arts, 2021)

EA published a game in 2017 - Star Wars Battlefront 2. This game got major negative publicity because of the monetization techniques it had. A short introduction to the situation: "Characters like Luke Skywalker, Darth Vader, and Princess Leia — so-called hero characters in the game's multiplayer mode — require in-game credits to be unlocked.

Redditors discovered it would take dozens of hours to unlock the characters. Alternatively, you could pay real money for randomized, virtual "loot crates" that contain the currency used to unlock hero characters. " (Gilbert, 2017, p.4)

"Thus, EA's choosing to lock those characters has been received poorly. The California-based game publisher's response to fans over the weekend, however, sparked more outrage.

People latched on to the first line: "The intent is to provide players with a sense of pride and accomplishment for unlocking different heroes." (Gilbert, 2017, p.12)

After facing so much negative reviews and critics, the EA decided to change the monetization strategy to relieve the negative pressure and to please the gamers. The company published a following text on their website:

"We hear you loud and clear, so we're turning off all in-game purchases. We will now spend more time listening, adjusting, balancing and tuning. This means that the option to purchase crystals in the game is now offline, and all progression will be earned through gameplay. The ability to purchase crystals in-game will become available later, only after we've made changes to the game. We'll share more details as we work through this." (Gabrielson, 2017)

This backlash played a big role in the later development of the game, and it created a forced change in the monetization policy. This situation might have been avoided with better study of the situation while the game was still piloting in a beta stage of the development progress. In a fast-changing gaming world it is important sometimes to stop and listen. The gamers are there online, and they are open to share ideas – and based on these ideas the game developers can create something that benefits both sides.

Epic Games and Apple: Case Fortnite

This work cannot be done without mentioning one of the biggest lawsuits in the mobile gaming industry. This great example of having problems over the monetization is provided by a big game developer called Epic Games which is especially known for their multiplayer shooting game - Fortnite. This game was published both on consoles and mobile devices.

However, this lawsuit was all about the version of the game that was compatible with Apple's mobile devices.

"Epic sued Apple in August last year, after the iPhone maker removed Epic's popular game Fortnite from its app store. Apple said the developer had broken its rules by steering players to make purchases outside of Apple's app store, circumventing Apple's ability to collect a commission on in-app purchases. Epic, in its suit, said Apple violated antitrust laws by forcing developers to use its payment system and forbidding them from telling app users about alternative ways to pay." (Shannon, 2021)

Later, the court's decision was published – both parties claimed their victory. Apple got the 30% margin that they had to get from the payments that were already done through the App Store and the game itself. For the favor of Epic Games, the judge also ruled that it is not suitable for a company like Apple to restrict developers using their own monetization platforms, like Epic Games' websites.

The point is that in addition to analyzing the gamers preferences and monetization techniques it is important to analyze the platform the game is going to be published and monetized on. That should be done to minimize all the possible setbacks and risks and to maximize the margins and revenues. This can be done for example by publishing own websites – just like Epic Games'. This surely is a trend that we will see more of in the future.

2.5. Mobile Gaming during COVID-19 pandemic

Mobile gaming is a rapidly growing gaming sphere, and it is no secret that it is bringing serious revenues right now to financially successful game developers. In 2014 the discussion of total industry revenues was about mainly from \$20 to \$30 billion dollars of mobile gaming revenue as evidenced by Stuart (2014), and Newzoo:

"Mobile games will generate more revenue than console titles in 2015, according to research specialist Newzoo. In its quarterly global games market update, the company estimates that revenues from smartphone and tablet titles will reach \$25bn in 2014, up 42% on 2013, and \$30.3bn in 2015." (Stuart, 2014, p. 1)

Few years later the first signs of COVID-19 pandemic showed up, with social distancing and movement restrictions that forced people to change their behaviors. More time spent at home resulted in bigger smartphone usage. This could be seen in the mobile gaming revenues too - the discussion is moving now towards the revenue of \$100 billion.

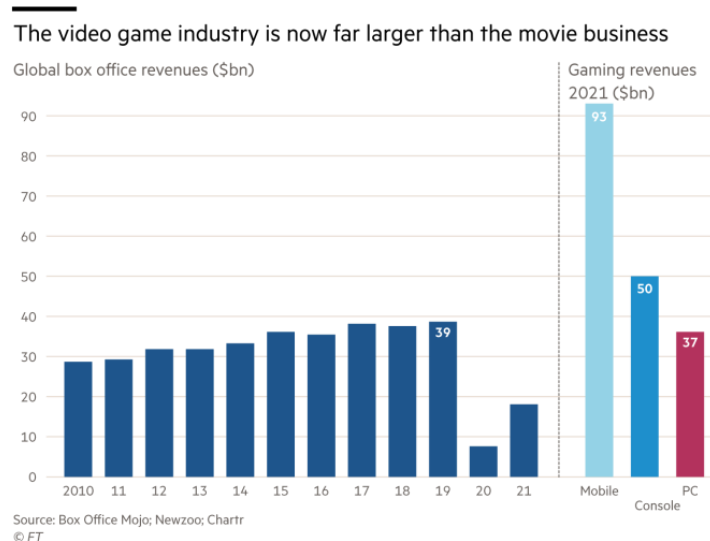


Figure 6. Growth of gaming revenue during 2021 (Box Office Mojo. Newzoo. Chartr, 2021)

Changes in consumer behavior during the pandemic were studied and in surveys created by specialists at Google/Savanta from 2020.

“We’re almost a year into the pandemic and people continue to turn to mobile gaming for entertainment. Worldwide trends show increases in play time, session time, and in-game purchases across all types of gamers. In fact, over 40% of new gamers say that they’re likely to continue to play.¹ And among gamers overall, one-third report that they’re likely to continue spending money on games,² and 65% say they’ll play longer per session.³” (Dance at Think with Google, 2020)

Clearly the pandemic has had a far-reaching impact that is worthy of more investigation as is the focus of this thesis. Mobile gaming is clearly a growing segment of the gaming industry, and this pandemic gave it a good boost, but the changes and the development in the gaming do not stop here. With the changing behaviors of the gamers, the growing trends and

revenues coming from the gaming industry, the profits and investments are being allocated to different projects. One of those projects will be described in the next part of this work, 2.6. “The Metaverse and the future of games and virtuality”.

2.6. The Metaverse and the future of games and virtuality

“Last week, Microsoft announced a deal to buy gaming company Activision Blizzard for \$68.7bn — the biggest in its history. The acquisition, which Microsoft says will help provide the building blocks for the metaverse, is equivalent to a hefty eight quarters of free cash flow.” (Lex at Financial Times, 2021)

What is metaverse? Metaverse is a virtual world that is being visioned by companies like Facebook and Microsoft, and it is not merely a game – it is a world where every game that exists or has ever existed contributes to this one larger project in their own ways. The investments like Microsoft’s acquisition of big gaming developer company Activision is just a beginning – it is a change that triggers big changes in the gaming industry, according to Waters and Lewis. (Waters and Lewis, 2021)

According to Michael Wolf, a media consultant and a CEO of Activate, all tech companies know that the metaverse is going to grow in the future. “With the virtual worlds of games expanding to become venues where players can do things like make purchases or watch movies, “everything you do in the real world you will be able to do inside games, Wolf adds.” (As cited in Waters and Lewis, Financial Times, 2021)

If the companies are making big investments in gaming and streaming industries, they see more than just successful ventures. The advertisements of streaming services such as Netflix, Amazon Prime, Disney+ and Hulu are everywhere. The virtual giants are battling for the consumers, for the subscriptions and for the revenues.

Facebook changed its name to Meta in October of 2021. A few months later, in December 2021, they made a new project called Horizon Worlds public. Now, anyone 18 and older can join the project – the participant must live either in the US or Canada. (Rodriguez, 2021) Facebook, or Meta, calls this as a step to the metaverse and it surely is an interesting thing to observe. This project is based on idea of being in a virtual world, and it might just be the beginning of something big.

A technology like the VR represents the virtual reality in a simplistic way – it is mainly about games and different software applications that you download in the headset. It is still a fairly new technology in development, so it has room to fill. Metaverse is something that is believed to be the VR of the future. And it is no coincidence that Facebook, or Meta, has their own virtual headsets on the market and they are constantly developing them.

In globalized world big companies often set a course and they create paths that are open to join. Just like the birth of the internet created opportunities for millions in the software and technology industries. Apple, Microsoft, and Facebook are all the creations of this opportunity. Maybe the Metaverse is another opportunity for mobile game developers?

2.7. Conceptual framework

The following paragraph which is cited by Foxell in 2015 gives a perspective which will help to understand how this thesis compares to one published in 2015. Foxell’s research in general was conducted based on the general understanding and theories of what is needed to make a good application so that the venture can be monetized.

“When creating free games many things have to be considered. Firstly, how to create revenue, how other games made by the developer can promote the new game and what other elements turn a game into a revenue-generating device.” (Baker, Dane, McCann & Dyson, 2011, as cited in Foxell, 2015, p.19)

The difference between the research conducted in 2015 by Foxell and this one will be seen in the approach. The research conducted by Foxell is mainly focusing on the theoretical side of the market analysis while this work will approach this topic more from the statistical side. The statistical analysis of the mobile market will give a different perspective of the demand and what people want. Theories are theoretical but statistics are a raw and a straightforward analysis of what is the de facto status quo. This work will act as a market analysis and monetization guide for future ventures.

The sources that are utilized in this thesis are picked through a strict qualification process – it is ultimately important to ensure that this thesis includes state-of-the-art information considering rapidly changing mobile gaming industry. This kind of information is aimed to

provide a clearer understanding of trends that take place within the mobile gaming industry and how to use the provided trends to successfully monetize game ventures currently and in the future.

The idea is to understand which types of games and which genres are the best for monetizing. To make that easier, the analysis of different game monetization mechanics will be conducted. The mechanics such as free-to-play, freemium, or F2P games (which are free to download but are intended to be monetized during the gaming process) are represented the most because of the popularity and profitability of this monetization method. The current market situation is more favorable towards freemium games when compared to paid games that are intended to be monetized starting from the first payment made by player before playing the game. This results in a strong lean towards the freemium (F2P) games in this work. This is a purely statistical reality that is based on statistics provided and analyzed later in this work.

Genres, monetization mechanics and game types - all these different game classifications will play a big part in the statistical segmentation of the analysis conducted during this research process.

3. METHODOLOGY

This thesis will concentrate on the monetization topic from a different perspective – the goal is to understand which monetization techniques are the most profitable. The analysis will be conducted to produce the needed understanding of current trends to provide developers not just a basic knowledge of the topic, but a more specialized in-depth analysis of the mobile game monetization market. This information is obtained from many people that were active in producing data for this research through conducted survey and the general information and statistics found, collected, and created by the researcher.

In this work, an analysis of the Google Play and App Store mobile gaming markets was conducted. The analysis of both platforms was done using qualitative and quantitative data. The analysis of top 10 grossing games of both App Store and Google Play is an example of qualitative data in this research. The games were tested by a researcher and the in-game

experiences were told in words rather than in statistics only to provide a clear picture for future game developers.

When it comes to the analysis of the existing trends, that is where the quantitative data was needed. The use of this data helps developers build a game that will be created to current standards and trends. These games are described in the end of this thesis – in 7.2. Implications for companies and developers, International Business.

Large amount of data was collected by the researcher as primary data, since there was no existing research at the moment of conducting of this thesis that would have statistics on the current top 200 list of top grossing games of Google Play, for example. Also, a survey that was conducted by the researcher within this research is an example of primary data.

The survey was created to get a better idea of what gamers feel about different monetization methods. The creation of the survey was important to expand the field of the findings made throughout the process and to ensure the quality of the analysis. Are people of watching video advertisements

Secondary data was used too, to make this research comprehensive, to ensure the quality, and to get a full understanding of current trends. This data played a big role in the analysis of Top 10 grossing games for both App Store and Google play. This data was collected by databanks, mainly based on the existing information that can be found in App Store and Google Play.

4. FINDINGS

In this work the focus is projected on two mobile application markets that provide games for mobile devices. One of those is created by developers at Apple and the other one is made by Google. Apple's is called App Store and likewise Google has its own mobile application market called Google Play. The reason standing behind decision of picking these two mobile stores is statistical, based on the market size and domination of these two platforms.

Google's Android devices are very popular – in May of 2021, Google released a statistical observation regarding this topic, stating that: "We first introduced @Android in 2008 — and now there are 3 billion active Android devices around the world." (Google at Twitter, 2021)

Apple's App Store is in a different market situation – its fees for developers are bigger – 30% of the in-store purchases compared to Google's 15%. (McGee, 2021, p. 1-2)

But again, the high fee used in App Store is compensated by a smaller user base that Apple IOS devices have:

"Apple made more money than ever during the holiday season, and its growth during 2021 has helped the company add 150 million more active devices. During an earnings call with investors last night, Apple CEO Tim Cook revealed that Apple now has 1.8 billion active devices.

That's up from the 1.65 billion Apple reported a year ago, and the 1.5 billion active devices in January 2020." (Warren, 2022,)

As for March of 2022, Apple's official website confirms the official number of apps – "1.8M apps available worldwide." (Apple, 2022). For Google Play the number is almost 2.6 million according to the latest information found on AppBrain. (AppBrain, 2022)

It is clear now that these two platforms and markets are very important for developers, since they have the biggest userbases in the world. Based on this information and the market shares of these two giants it is a wise time to proceed to the part that interests developers around the world – what are the trends in the mobile markets and how to monetize within them? It is time to make a dive to the findings and market analysis.

The situation starts to look interesting when the analysis is conducted on PUBG Mobile – in Sensor Tower's Top 10 grossing games' - analysis, it is leading in terms of the overall market revenue. It also is second in App Store's revenue analysis. But in Google Play it is only 7th. Also, as 64% of PUBG Mobile's revenue coming from China it clearly states that different markets are interested in different games. (Sensor Tower, 2022)

Then there is another game, that is from the same developer – Tencent, the name of the game is Honor of Kings. It is extremely popular in China with 94% of revenue of the game generating there. What is interesting is that it is not available in Google Play at all – but it is in top 3 grossing games in App Store and in the overall revenue analysis too. (Sensor Tower, 2022)

There are certainly differences when it comes to different mobile markets. The demand of the certain category and game depends on the continent and the culture that the game exists in. There are differences in the advertisements for different platforms. Some games are specifically targeting certain markets. Both PUBG Mobile and Honor of Kings are great examples of that, since they focus on Asian markets, as China being their main source of revenue. This is not a surprise though since the developer company of both games, Tencent, is Chinese too. It is easier to establish yourself in your home country almost in any business sphere. That is because the people working in the company usually tend to have the knowledge of the culture that the people around you and in your country possess. The classification of findings is divided in two parts – both Google Play and App Store await below.

4.1. Findings: Google Play

Based on the analysis of top 10 grossing games and trends as of January 2022, the situation for Google Play is following: action and strategy genres take 30% each, which accumulates for 60% of top 10 list, adventure and casual genres accumulate for the remaining 40%, with 20% each. Based on that there are two categories that are currently making the most money on Google Play: action and strategy. Out of these games only 2 represented both freemium and in-app advertising as the monetization options. Other games were just freemium, with no advertisements included.

The interesting thing is that those games that have in-game advertisements available for players to watch are both taking the top 2 of the Google Play's top grossing list. Maybe utilizing in-game advertisements is a good thing after all?

According to survey conducted within this research in March of 2022, the use of advertisements can be absolutely justified since people are willing to watch these advertisements, even if they take their time. In the survey players were asked if they agreed with following statement: "The Sims FreePlay – there are available different advertisement videos for you to watch in the game. After you have watched the video, you get different in-game rewards which boost your in-game progress." Out of 150 respondents a total of 68% agreed with the statement, with 46% of them agreeing and 22% strongly agreeing. 16% remained neutral and other 13% disagreed. Only 3% strongly disagreed with the statement – they were not ready to sacrifice their time at all.

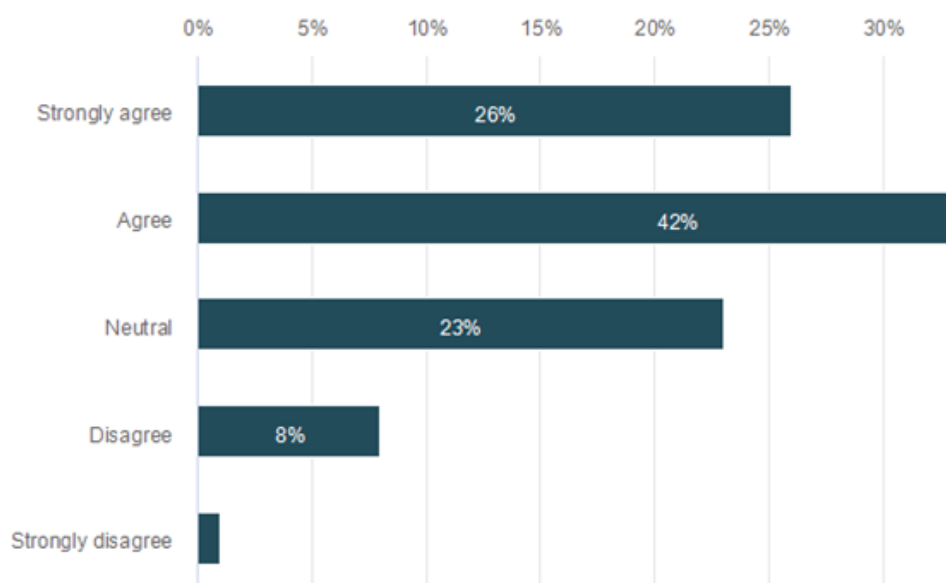
Based on that, video advertisements are not a bad idea at all. Another thing that was researched in the same survey was the usage of websites as the monetization options. When asked if players agreed with paying extra when purchasing things straight from their smartphone mobile app store, a total of 50% disagreed. Out of those 50%, 34% answered disagree and 16% strongly disagree. A big number of 27% remained neutral, but only 23% agreed with the statement. Out of those 23% only 3% strongly agreed. Based on that most players are not willing to spend money and they are willing to utilize different options. To make this claim true, the next statement was following: “Example 2: Fortnite had two options for mobile gamers who wanted to use real money for in-game progress, currency and skins: the gamers could make in-game purchases through the game itself by using either App Store or Google Play - or they could pay using the Fortnite’s website, and they would get these same things 20% cheaper.”

The answers to this statement were even more divided with 68% agreeing. 23% of respondents remained neutral, and only a total of 9% disagreed. This proves one thing – websites are worth a try and with current changes within the industry, it is a real opportunity to catch.

Mobile game and app survey - consumer behavior and monetization.

5. I am ready to use the game developer’s website instead, because of the discount.

Number of respondents: 150



Survey – the gamers’ readiness of using developer’s website to make payments with discounts. The further description of this situation and context is explained in Fortnite’s case which is described in 2.4.1. Monetization problems: 2 examples.

4.2. Findings: App Store

App Store represents a different situation due to activity of Asian and especially Chinese markets. This situation can be seen only in App Store since Google Play has not been available lately for large Chinese audiences. App Store’s top 10 category representation is broader than Google Play’s in terms of represented categories. In addition to action, strategy, adventure and casual games, there are also simulation and role-playing games in the list. The simulation and role playing- games are all targeted towards Asian markets.

Simulation and role playing represent a total of 4 games in the list. Two of those games are popular in Japan and other two in China. Both countries are a part of Asia. The representation of these two categories in these countries compared to European for example might have to do with the cultural differences. For example, cosplay, which is a real-life portraying of the video game or film characters, is very popular in Asia. Cosplay is real life definition of role playing and simulation. It is about being and representing someone else, just like in the games that are popular in Japanese and Chinese cultures. This is a different topic to study though, but these factors must be taken in consideration when publishing a mobile game in certain market.

The deeper marketing study is something to do, but the same survey from March 2022 is still something to look at. In-game advertisements are not a bad touch at all considering the additional revenue that it generates. But a website for monetization is something to look up to in the future. According to same questionnaire created in March of 2022, a great number of people want to pay less, and many are ready to use developers’ websites to make that come true. This sounds like a good deal for both of the parties – developers and gamers.

5. DISCUSSION AND ANALYSIS

5.1. Google Play gaming trends

Gaming trends in the past 15 years have progressed quickly from Angry Birds dominating the industry to them leaving just a sparkling history behind. If Rovio's Angry Birds represented a game that was in the popular "casual" genre – now the market looks different. Now it is time for other games to shine and with analysis of 200 games from Google Play's Top grossing games- list it is time to look of what is happening right now. (Google Play, 2022)

In the conducted analysis from the end of the February of 2022 – the situation is following: 200 games are in the Top grossing games- list. In total, there are 15 different categories represented. Out of these 15 categories the most popular category is strategy, with 36 games out of the 200 presented games. Next genre is casino with 35 games out of 200. Role playing is responsible for 28 games, puzzle for 21 games, casual for 18 and action for 15. Simulation is the last genre that accounts for 10+ games with the 13 games that it has. Card has 9 games, sports 7, board 6, adventure 5, arcade and word have 2, and racing, educational and music have 1 game in the top grossing list. Here is a chart for better visualization and visual understanding of how the situation looks like as of February 2022.

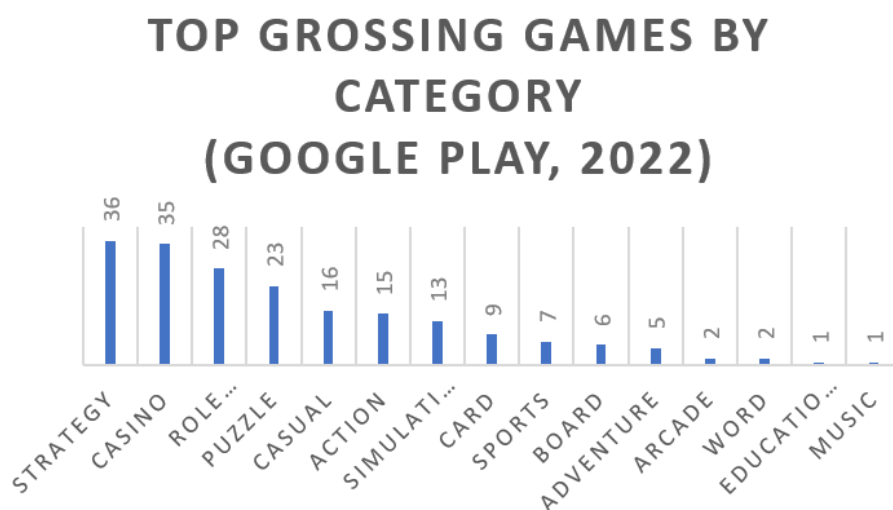


Figure 7. Top grossing games. (Google Play, 2022).

To get a better statistical understanding of the market it is also possible to show these numbers as a pie chart, with percentages. This will help to analyze the current situation in Google Play's top grossing list:

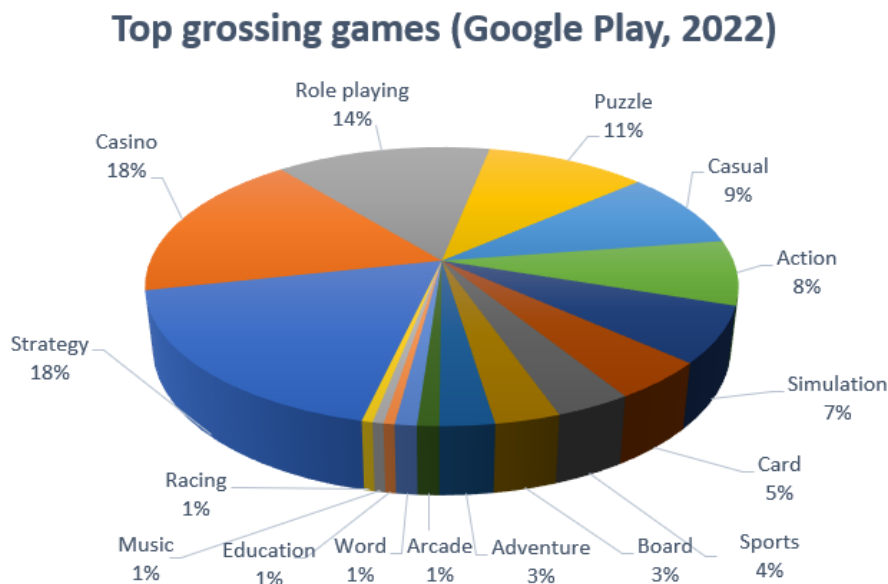


Figure 8. Top grossing games. (Google Play, 2022).

With almost 40% of top grossing games being either strategy or casino type games, it looks clear that these games dominate this market in profitability. But is it so?

To understand what types of games financially dominate and lead the markets, the focus should be moved to another place – a comparison between different databases will be concluded.

According to SensorTower the top 10 grossing games of January 2022 in Google Play were Coin Master, Candy Crush Saga, Lineage W, Genshin Impact, Roblox, Garena Free Fire, PUBG Mobile, Pokémon Go, Evony, and at number 10: Clash of Clans – in the stated order. These games represent following categories: casual, role playing, adventure, action, strategy. (SensorTower, 2022)

Out of these top 10 games only one category was represented 3 times – adventure. Action and strategy respectfully 2 times each. Casual and role playing had their games too – one each. Trends of January represent a different picture when compared to the statistics

retrieved from Google Play's top grossing list. This is because the Google Play's list contains 200 games – it includes more than just the top 10.

Adventure was responsible for 30% of the games in Sensor Tower's top 10 list, which brings in a 27% percentual increase regarding the number of games in this category when compared to Google Play's top grossing games list. Action experiences a 12% increase. Strategy is represented 2%. The casual experienced the least growth – just 1%. Role playing is the only category that is represented a little less percentwise than in the top grossing games list – it experiences a 4% decrease.

Based on the analysis of top 10 grossing games of Google Play for January 2022 - quantity is not quality. What this means is that even though the total number of games in certain category is low in the Google's top grossing list, it does not necessary mean that these games and categories are not successful.

The statistical segmentation of these categories is conducted strictly based on the official categories that are marked for each game. Nevertheless, it is important to note that there were some puzzling discoveries during the research – some games could represent different categories – for example a puzzle type game like Candy Crush Saga was under the “casual” category. As discovered in the analysis before, there is an own category for the puzzle games called “puzzle”.

Even so, the charts presented in Figure 7 and Figure 8 stay true to the market analysis and the categories used in Google Play. The analysis based on found information is highly recommended for use when for example, picking a certain type for a future game project. The trends show the way, and they show the existing demand of the market. It is important and useful for a game monetizing developer understand how markets operate and what are the current trends – to turn a project into a top grossing game.

5.1.2. Google Play game monetization, the analysis of top 10 games

The basis of the analysis is the statistics provided by SensorTower's top 10 list used in the analysis of the current trends. The following information and data that was the latest that was possible to find by the time of completion this analysis.

1. Coin Master:

The category is casual, and the game is free to download. Player can buy additional currency that can be used to build and develop villages. This is possible due to existing in-app purchases. Also, there is a possibility to buy lottery spins, which give a possibility of winning different things such as coins, shields, and raids. Raids give player a possibility to attack and steal money from opponents. Shields act as a protection – from other players.

Player can play without making in-app purchases, but there is still an option of microtransactions that is actively marketed in the game. In addition to these monetization options there are also video advertisements available to watch. Player gets rewarded with something that benefits his gameplay after he/she has watched the advertisement.

The monetization type of this game is both **freemium and in-app advertising**.

2. Candy Crush Saga:

The category is casual, and the game is free to download. Player can buy in-game gold bars to boost the gaming progress. In addition to these game boosting gold bars, there is a possibility of buying additional boosters (that boost gaming process too) and lives to continue playing even after failed attempts.

At some point player may receive video advertisements as an opportunity to receive some rewards in exchange.

The monetization type of this game is both **freemium and in-app advertising**.

3. Lineage W:

The category is action, and the game is free to download. Players are able to buy different items and in-game currency due to existing microtransaction system. These items and currency that are existing within the game are both essential for the in-game progress. Players have two options: either playing long hours to complete tasks and missions to gain the wanted progress or they can purchase needed items from the shop and complete tasks faster.

The monetization type of this game is **freemium**.

4. Genshin Impact:

The category is adventure, and the game is free to download. The microtransactions are built around “Genesis crystals” that are used as premium currency, which can be bought from the in-game shop. There is also a possibility to buy a pack that contains other currencies too.

The monetization type of this game is **freemium**.

5. Roblox:

The category is adventure, and the game is free to download. Players can buy premium currency called Robux that can be used in-game to buy things such as cosmetic items, skins (different decorations for personal avatar). It is also possible to buy games within the game itself. It is also possible to buy servers for the own use. This allows player to play with his friends only - for example.

A premium subscription is optional – but it is a possibility. It gives player certain amount of Robux currency each month – this depends on the tier of the subscription that the player picks. The higher the tier – the higher the price. There is no way to regular player to get Robux currency for free, the only way is to pay.

The monetization type of this game is **freemium**.

6. Garena Free Fire:

The category is action, and the game is free to download. It has in-game “diamonds” as a currency which allows players to obtain new cosmetic items. By using diamonds, it is also possible to level up faster. It also has both monthly and weekly membership subscription mechanisms that also provide player with in-game currency.

It is also possible to buy different vouchers that can be used in an in-game lottery which grants players different cosmetic items and currencies.

The monetization type of this game is **freemium**.

7. PUBG Mobile:

The category is action, and the game is free to download. Players are offered a possibility to buy premium currency - Unknown Cash. In addition to currency purchase players are offered a variety of subscription options – starting from just one week going all the way up to monthly subscriptions. With these subscription options offered players can get different cosmetic items and additional amounts of currency and in-game progress boosting items. The amount depends on the price of the subscription pack.

At the moment of the analysis, there were no advertisements in PUBG Mobile.

The monetization type of this game is **freemium**.

8. Pokémon Go:

The category is adventure, and the game is free to download. Players are able to buy in-game currency to fasten the progress. Not only it can be used to progress and develop in-game experience in the sense of the level development, but it is also possible for player to purchase cosmetic items too. Using this premium currency player can also buy many game progress boosting items, such as “pokéballs” that help player to catch the in-game characters. There are numerous things that player has the possibility to use money on, but the main idea is to make catching Pokémon’s easier. There are no advertisements available, the game is free of advertisement.

The monetization type of this game is **freemium**.

9. Evony:

The category is strategy, and the game is free to download. The in-game store has different offers for different needs. Player can buy a membership – either for a week, a month, a season or for the whole year. These memberships grant player daily items and premium currency – “gems”. This currency can be used to develop players in-game capabilities and level. In addition to memberships there are also other microtransaction methods in the game. It is possible to buy different one-time item and currency packages.

The monetization type of this game is **freemium**.

10. Clash of Clans:

The category is strategy, and the game is free to download. The monetization focus is on the virtual in-game currency called “gems” used to fasten the developing process of the village that is being built by the player throughout the gaming process. The more gems player has, the more progressing possibilities he owns. Players can get these gems for free by discovering them in-game through different activities. And just like Pokémon Go – there are no additional advertisements in the game.

The monetization type of this game is **freemium**.

5.2. App Store gaming trends

California based technology giant Apple is bringing every year new mobile devices, technology, and development in the software sphere, without forgetting their home for downloading applications and games – App Store.

App Store represents not only the home for the Apple’s users, but an established American based company Apple, from United States, California. In United States the size of the mobile gaming market is estimated to grow up to \$22 billion dollars in 2022. (Statista, 2022). It is not the biggest market since the market is basically booming in the Asia, with most revenue coming from China with estimated \$47 billion dollars in 2022. (Statista, 2022)

In 2019, United States surpassed Japan in the mobile gaming revenues. (Sensor Tower, 2021). The US represents one of the biggest mobile gaming markets and it is expected to grow in the future too.

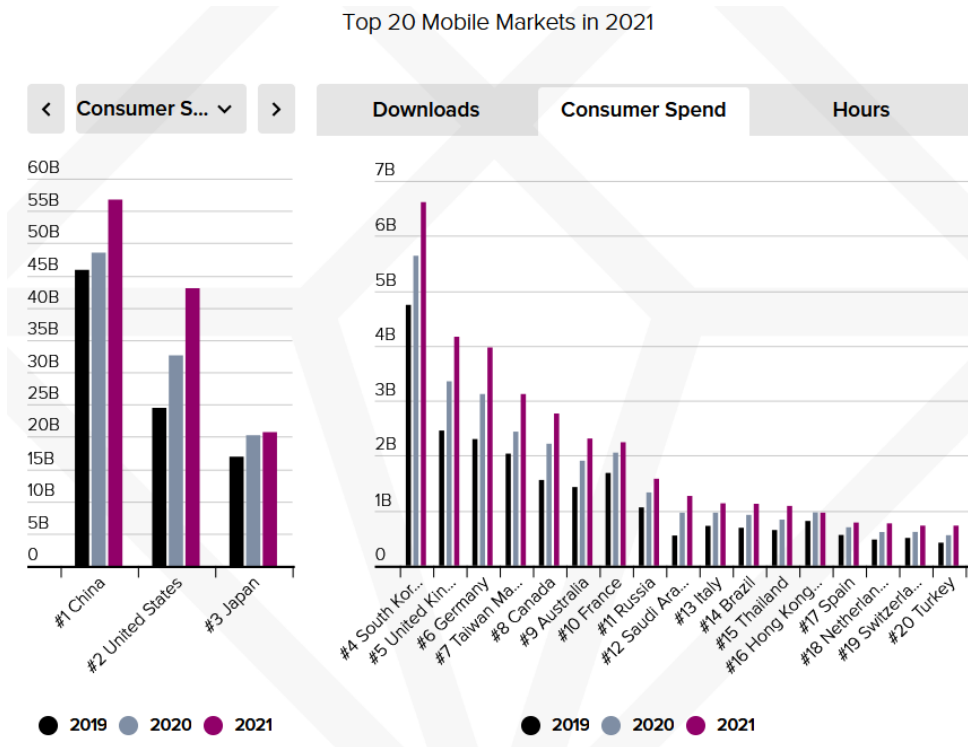


Figure 9. Top 20 Mobile Markets by consumer spending (App Annie, 2021)

“China, the United States, and Japan were the top three markets in 2021 by mobile game revenues with \$56 billion, \$43 billion, and \$20 billion in revenue, respectively.” (App Annie, 2021, as cited in Udonis, 2022)

According to Statista’s statistics, presented in Udonis’ blog written by Knezovic in 2022 - these are the top mobile genres in the United States in 2021 by IOS revenue share.

1. Puzzle (21.18%)
2. Casino (18.9%)
3. Strategy (17.17%)
4. RPG (14.23%)
5. Simulation (10.4%)
6. Shooter (5.56%)
7. Lifestyle (3.86%)
8. Sports (3.4%)
9. AR/Location Based (1.67%)

- 10. Driving (1.6%)
- 11. Arcade (1.34%)
- 12. Card games (0.62%)
- 13. Hyper-casual (0.06%)

(Knezovic, 2022)

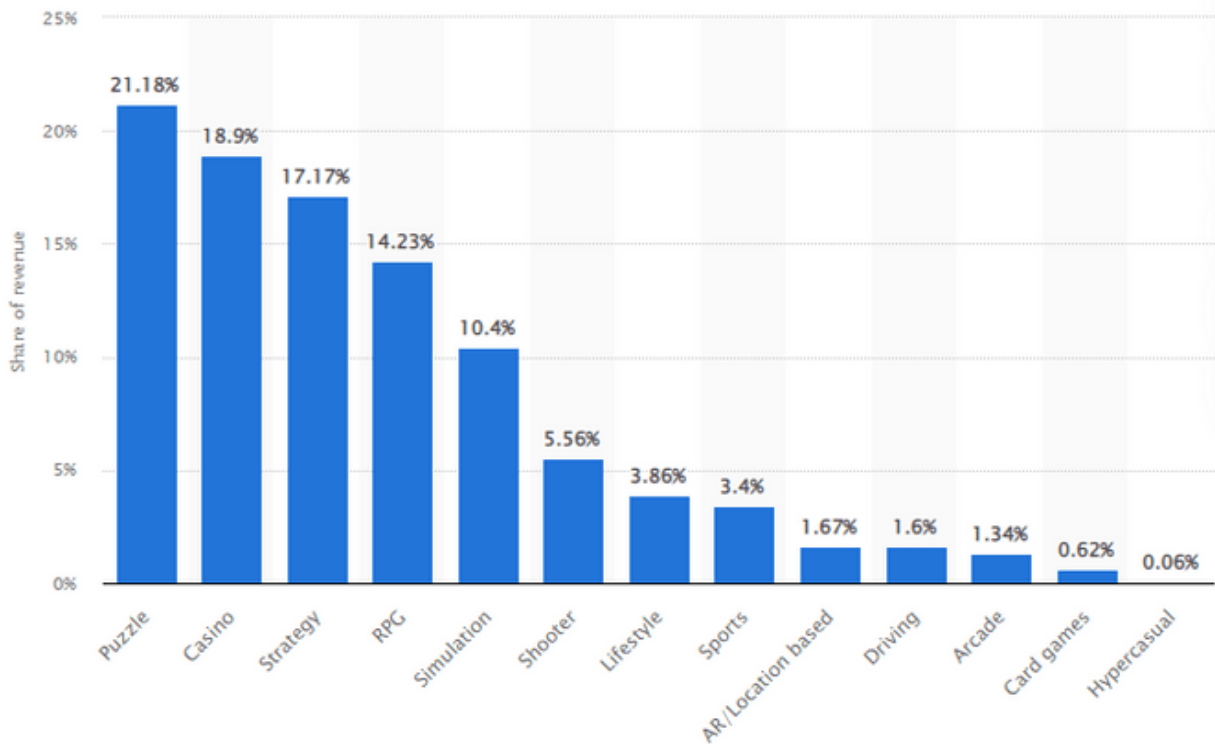


Figure 10. Top Mobile genres in the United States. (Udonis, 2022)

This statistic cannot be compared with the top grossing list of 200 games that is analyzed previously in Google Play’s trends, but there are big similarities indeed. Puzzle, casino, strategy and RPG (which stands for role-playing game) can all be seen in both charts. It is not just that - both Google Play and App Store have the same top four categories – the only difference is that these categories are in different order.

According to the chart presented above, puzzle is the category that is generating the most revenue in the US. In the App Store top 10 revenue chart for January 2022 the situation begins to look different already – the first puzzle- like game is 7th with games like Honor of Kings, PUBG Mobile, Genshin Impact, Three Kingdom Tactics, and Fantasy Westward

Journey being in the top 6. These games are not that well known for the audience in United States, and it is not a surprise. These games are heavily marketed in Asia – with most of these games generating the biggest revenues in the world, and particularly, in China. Honor of Kings and PUBG Mobile with total revenues over 2 billion are generating record-breaking amounts of revenue each year and again, it should not be a surprise since China is dominating the mobile gaming market in the generated revenue.

The analysis for the United States' App Store is not enough when developers want to publish a game that will be appreciated everywhere, since every continent and every country has its own preferences.

Those developers that want to create something that can be greatly monetized need to seek worldwide trends that represent an overall picture of what is the status quo. Following analysis of App Store's top 10 worldwide revenue generating games will help to understand what the situation in the mobile gaming world is.

5.3. App Store game monetization, the analysis of top 10 games

1. Honor of Kings

The category is action, and the game is free to download. This game is a pioneer in its sphere in terms of generated revenue and the numbers are exceptional. It is the highest-grossing mobile game in the world. "Honor of Kings had earlier got the top spot in the 'top 5 most-revenue generating games on the iPhones for the period of January 1, 2021 to March 30, 2021' list by Sensor Tower. The game grossed a total of \$717 million during the period, making it the highest-grossing game on the App Store." (Utkarsh at Times of India, 2021) The revenue is based on monetizing the in-game characters, with the total number being more than 300.

Honor of Kings, just like many other games in this list that are targeted for users in China, is popular. There is another side to the progress of the growing playerbase that should be accounted as a trend. An article posted in South China Morning Post provided an interesting perspective to the growing number of players in China.

“Shanghai mother Wu Lin wasn’t worried about widespread criticism of the hit video game *Honour of Kings* – branded ‘poison’ and a ‘drug’ by China’s official *People’s Daily* newspaper. She downloaded it onto her iPad, opened an account for her nine-year-old son Haohao, and said, “son, play it.”

For her, it was more a case of making sure the boy, a grade-three pupil at primary school, was not left out of a craze that is sweeping the country.” (Yan, 2017, p.3)

The monetization type of this game is **freemium**.

2. PUBG Mobile

The category is action, and the game is free to download. Players are offered a possibility to buy premium currency - Unknown Cash. In addition to currency purchase players are offered a variety of subscription options – starting from just one week going all the way up to monthly subscriptions. With these subscription options offered players are able to get different cosmetic items and additional amounts of currency and in-game progress boosting items. The amount depends on the price of the subscription pack.

At the time of the analysis, there were no advertisements in PUBG Mobile.

The monetization type of this game is **freemium**.

3. Genshin Impact

The category is adventure, and the game is free to download. The game is heavily marketed toward gamers in Asia, and especially in China. This is a game though that has gained some popularity in the West too. The microtransactions are built around “Genesis crystals” that are used as premium currency, which can be bought from the in-game shop. There is also a possibility to buy a pack that contains other currencies too.

The monetization type of this game is **freemium**.

4. Roblox

The category is adventure, and the game is free to download. Players can buy premium currency called Robux that can be used in-game to buy things such as cosmetic items, skins (different decorations for personal avatar). It is also possible to buy games within the game itself. It is also possible to buy servers for the own use. This allows player to play with his friends only - for example.

A premium subscription is optional – but it is a possibility. It gives player certain amount of Robux currency each month – this depends on the tier of the subscription that the player picks. The higher the tier – the higher the price. There is no way to regular player to get Robux currency for free, the only way is to pay.

The monetization type of this game is **freemium**.

5. Three Kingdoms Tactics

The category is simulation, and the game is free to download. The focus is on the virtual in-game premium currency used to fasten the developing process of the kingdom that is being built by the player throughout the gaming process. The more premium currency player has, the more progressing possibilities he owns. The monetization and game type idea looks like the Supercell's Clash of Clans.

This game as well as Genshin Impact, Honor of Kings and PUBG Mobile is generating most of its revenue in China. Interesting enough, games like this are not available in many Western countries and they are specialized in their own userbases.

The monetization type of this game is **freemium**.

6. Fantasy Westward Journey

The category is role playing, and the game is free to download. This is a game that is marketed in China, it is not available elsewhere. When trying to create a European account, the game blocks the registration process. So other source had to be utilized. In article published in 2017 the following was said about this game monetization:

“Over \$7.3 million worth in in-game currency is exchanged daily in NetEase's Fantasy Westward Journey, according to Pearl Research.

The game lets players trade items and collectibles with each other for currency, such as pets, which can then be used to purchase other items. It's a feature that has proven hugely popular with players." (Cowley, 2017)

Based on this information it seems like the monetization is based on the premium currency. Due to lack of information this game will not be ranked as in-game advertisement utilizing game. And based on the experience of the games that are popular in China and in other Eastern countries, it would not be surprising if there are no advertisements at all. This is a topic to investigate in the future research.

The monetization type of this game is **freemium**.

7. Candy Crush Saga

The category is casual, and the game is free to download. Player can buy in-game gold bars to boost the gaming progress. In addition to these game boosting gold bars, there is a possibility of buying additional boosters (that boost gaming process too) and lives to continue playing even after failed attempts.

At some point player may receive video advertisements as an opportunity to receive some rewards in exchange.

The monetization type of this game is both **freemium and in-app advertising**.

8. League of Legends: Wild Rift

The category is strategy, and the game is free to download. The monetization is built around in-game premium currency that allows player to purchase in-game characters that all have different in-game powers that can be used inside gaming arena. These characters can be obtained also for free by playing long hours. In addition to characters there is a possibility of purchasing "skins" – costumes for these characters. These costumes can be bought only by using the premium currency. Same goes for the subscriptions that are available for players to acquire.

The monetization type of this game is **freemium**.

9. Monster Strike

The category is role playing, and the game is free to download. This game is extremely popular in Japan – it has 1st place in the role playing charts in App Store. In addition to a purchase option for in-game premium currency “balls” the player has an option to get a monthly subscription. Subscription grants player different in-game resources to level-up and get better in the game in terms of the progress. Subscription and premium currency is not everything when it comes to Monster Strike. There is also a possibility of purchasing a premium currency- pack that grants players these premium “balls” once per login – one a day.

There is also a possibility to buy in-game vouchers called “Gacha Gifts”, however, player can buy these only when one gets at rank 50. These vouchers give player a possibility of getting a random in-game character through a lottery that exists in the game.

The monetization does not end here. Player has also a possibility to buy stamina boosters that recover the in-game stamina that player needs to play. Player is also pushed to increase the number of characters that one can possess. This is possible either by using premium currency “balls” or by watching video advertisements. There is a restriction though – it is possible to watch these videos only two times per day. If player wants to level-up even faster, the developers have created a system that is selling different packs that contain resources and characters. The stamina, characters, premium currency, lottery vouchers and characters create a wide range of possibilities for monetization.

The monetization type of this game is both **freemium and in-app advertising**.

10. Uma Musume Pretty Derby

The category is simulation, and the game is free to download. The monetization is built around premium in-game currency that helps user to progress and level-up within the game. The currency can be used to develop in-game characters that player has the control of. This game is available in the Japanese version of App Store. The game is also heavily marketed to the Japanese market, and this game is not that well known in the West.

The monetization type of this game is **freemium**.

6. CONCLUSION

6.1. Main Findings

Every game its own userbases and every country and culture have different preferences. To each their own, can be said. Many games that are breaking revenue records have established themselves in their countries because of good understanding of the market, preferences, and demand. For evolving developers, it is important to pay attention to many gameplaying factors, but it is important to understand that the game type must suit the trends that exist with a culture.

The monetization techniques used in the East do not differ that much though - when compared to many other games that are succeeding in the West, for example. Geographical and cultural differences do not affect the main existing monetization trends.

In the conducted analysis, there were no paid apps represented at all – every app represented *freemium* as their monetization type. Regarding current trends, the freemium type with in-game monetization and microtransactions is the way to go. The paid apps are not currently represented in any top-grossing list.

Video advertisements are not a bad idea at all according to survey conducted within this research. Showing video advertisements within games to earn rewards is a method that is proven to be working. This would bring additional revenue to developers. Also, according to the same survey that is used in this research, game monetizing websites are considered a good idea to reduce the amount of money that players must pay to mobile markets like Google Play and App Store. This might even increase the total spending since players seemed to be positive about paying less and using developers' websites. Using websites has been proved a working way of bringing additional revenue, and Fortnite's example is opening new opportunities for monetizing mobile games.

Descriptions of ideal game types were created for App Store and Google Play. These descriptions show the monetization methods that the games from top 10 grossing game charts use. Different characteristics of these games are combined to provide a detailed descriptions of ideal game types for monetization. These descriptions can be found under

6.3. “Implications for IOS/App Store mobile game developers” and 6.4. “Implications for Android/Google Play mobile game developers”.

6.2. Implications for companies and developers, International Business

To maximize the grossing rates and the revenue coming from mobile games it is important to target a certain player group because every group has its own preferences. Based on the analysis conducted in this research developers can get insight how monetizing techniques and popularity of categories vary between cultures.

To create a successfully commercialized game it is important to conduct either additional research on the target player base’s preferences or use this work as the needed research if suitable.

With the rising development in the industry and mobile games it is also important to look around sometimes and seek for new possibilities for the development of mobile games. Virtual reality as well as the growing Metaverse are possibilities to look to and engage with.

The global mobile spending is on the rise and players are ready to spend money – game developers, it is a possibility to be utilized. More detailed and practical implication guides can be found in the next two sections.

6.3. Implications for IOS/App Store mobile game developers:

It is important to understand that trends do not represent a full picture of what is taking place in the market. But, to have an ideal version of game for App Store and if developers are willing to create a worldwide mobile gaming hit based on this thesis, an ideal game portrait will look like this:

With action, simulation, adventure, and role playing representing the same number of games in App Store’s top 10 grossing list it is reasonable to have an action game with numerous characters included to engage with the Eastern markets. These characters could have

different looks, so that each player could find his own character, a character - that the player can portray.

The game could have an open world to create a sense of adventure – something like Genshin Impact or Roblox. While Genshin Impact is very popular in the East, Roblox is popular in the Western cultures too, and a game that would represent some of those Roblox values might do good with engaging with the Western audience.

The monetization would be built around premium in-game currency with subscription options and lotteries. Premium currency could be used for buying costumes (skins) for in-game characters and for cutting time to rank up. The situation with in-game advertisements is the same as in Google Play – again, 20% of the games in top 10 list utilize in-game advertisements. A limited number of videos a day is something to consider. These videos should award player with game boosting resources, for example – stamina. The advertisement would keep player spending more time in the game. The more time player spends – the more he is engaged and immersed with it. In this work a study was made regarding different monetization methods, and according to it – people are ready to spend time watching advertisement videos. This study is described in the analysis, and it can be found in 5.1. Findings: Google Play.

6.4. Implications for Android/Google Play mobile game developers:

Based on these statistics the ideal game portrait for monetizing right now in Google Play looks like the following description:

Google Play version of the game would be a strategic action game – player could have a possibility to strategize and be active in the game, depending on the situation. A sense of adventure could be created, a choice of picking a route inside the game would not harm the gaming experience for the players that enjoy playing adventure games, like Roblox and Genshin Impact.

A casual and relaxed feeling of the Candy Crush Saga or Coin Master gameplay is something that could be included in some parts of the game to relieve the amount of action and activity within a game. Supposedly, that is something that would create longer playing hours and more immersion in the game.

Regarding the monetization, the game would be freemium. In game purchases, subscriptions and purchasable in-game premium currency would be something to consider. This game would have in-game advertisements, even though the games with advertisements accumulated only for 20% of those games that are in the list. The reason behind that is explained in the review below. These advertisements would generate additional revenue for developers. In exchange, players would get additional resources to play the game - to play longer hours and be more immersed in the process. A limited number of videos a day is something to consider.

6.5. Suggestions for Further Research

Regarding the further research, there are numerous things to investigate and to analyze. One topic that just was not a part of this research are the psychological and cultural aspects of the mobile game monetization. This is certainly a topic that could be analyzed and researched more. A cause-and-effect relationship between different cultures and monetization is something to study – why are games in China dominating the whole industry? The answer might exist in the culture that the players represent, and not just in the game itself.

In the further research that might be taking place in the future, it is recommended to do even deeper analysis of top grossing games by additional classifications of the gameplay. The classification could be based on which games represent multiplayer and which represent single player games, for example. There are many things and opportunities that can be used to study and research within this topic, and with the skyrocketing growth of this industry the demand for academical research is on the rise.

7. REFERENCES

AppAnnie. (2021). State of Mobile Report 2022. *Data.ai*.

Available from: <https://www.data.ai/en/go/state-of-mobile-2022/>

[Accessed 1 February 2022]

AppBrain. (2022). Number of Android apps on Google Play. Website.

Available from: <https://www.appbrain.com/stats/number-of-android-apps>

[Accessed 5 February 2022]

Apple. (2022). App Store. Website.

Available from: <https://www.apple.com/app-store/>

[Accessed 5 February 2022]

Chapple, C. (2022). *Top Grossing Mobile Games Worldwide for January 2022*. Newzoo.

Available from: <https://sensortower.com/blog/top-mobile-games-by-worldwide-revenue-january-2022/>

[Accessed 1 February 2022]

Cowley, R. (2017). Fantasy Westward Journey players exchange over \$7.3 million worth of in-game currency daily. *Pocket Gamer*.

Available from: <https://www.pocketgamer.biz/asia/news/65399/netease-fantasy-westward-journey-in-2017/>

[Accessed 5 February 2022]

Dance, B. (2020). How the pandemic has shifted mobile gaming behaviors worldwide. Blog. *Think with Google*.

Available from: <https://www.thinkwithgoogle.com/consumer-insights/consumer-trends/mobile-casual-gaming-trends/>

[Accessed 1 February 2022]

Electronic Arts. (2021). Electronic Arts Reports. Q3 FY22 Financial Results. Website.

Available from: <https://www.ea.com/news/electronic-arts-reports-q3-fy22-financial-results?isLocalized=true>

[Accessed 3 February 2022]

Furini, M. (2007). *Mobile Games: What to expect in the near Future*.

Available from:

https://www.researchgate.net/publication/221024346_Mobile_Games_What_to_expect_in_the_near_Future

[Accessed 3 February 2021]

Gilbert, B. (2017). 'Fans are outraged by the new 'Star Wars' game.' *Business Insider*.

[Online].

Available from: <https://www.businessinsider.com/star-wars-battlefront-2-microtransactions-outrage-2017-11?r=US&IR=T>

[Accessed 3 February 2021]

Google. (2022). *Top Grossing Games*. *Google Play*.

Available from:

<https://play.google.com/store/apps/collection/cluster?clp=0g4YChYKEHRvcGdyb3NzaW5nX0dBTUUQBxgD:S:ANO1ljLhYwQ&gsr=ChvSDhgKFgoQdG9wZ3Jvc3NpbmdfR0FNRRRHGAM%3D:S:ANO1ljiKta8&hl=fi&gl=US>

[Accessed 5 February 2022]

Google. (2021). 'We first introduced @Android in 2008 — and now there are 3 billion active Android devices around the world. 🤖 #GoogleIO.' *Google's Twitter account*.

Available from: <https://twitter.com/google/status/1394719458921431040>

[Accessed 5 February 2022]

Knezovic, A. (2022). '147 Mobile Gaming Statistics for 2022 That Will Blow Your Mind.'

Blog. *Udonis*.

Available from: <https://www.blog.udonis.co/mobile-marketing/mobile-games/mobile-gaming-statistics>

[Accessed 1 February 2022]

Koeder, M, J. Tanaka, E. (2017). *Game of chance elements in free-to-play mobile games. A freemium business model monetization tool in need of self-regulation?*

Available from: <https://www.econstor.eu/handle/10419/169473>

[Accessed 3 February 2021]

Lehtimäki, E. (2021). *Analysing the changes in monetization of games in the 21st century*.

Available from: <https://www.theseus.fi/handle/10024/500464>

[Accessed 3 February 2021]

Lex. (2021). 'Microsoft: Activision mega-deal sidelined by strong earnings.' *Financial Times*. [Online].

Available from: <https://www.ft.com/content/0426be41-c8ea-43d5-a0bb-a152ceb260fa>

[Accessed 1 February 2022]

McGee, P. (2022) 'Google cuts Play Store fees on subscription services to 15%.' *Financial Times*. [Online].

Available from: <https://www.ft.com/content/4c8992e1-e8df-4926-8982-b2cd3da3bd42>

[Accessed 1 February 2022]

Nintendo. (2021). *Dedicated Video Game Sales Units*. Website.

Available from: https://www.nintendo.co.jp/ir/en/finance/hard_soft/index.html

[Accessed 3 February 2022]

Gabrielson, O. (2017). *An Update on Star Wars Battlefront II*. *Electronic Arts*. [Online].

Available from: https://www.ea.com/games/starwars/battlefront/star-wars-battlefront-2/news/pre-launch-update?utm_campaign=swbf2_hd_na_ic_soco_twt_swbfii-prelaunchblogtw&utm_source=twitter&utm_medium=social&cid=42029&ts=1510882058445&isLocalized=true

[Accessed 3 February 2021]

Rodriguez, S. (2021). 'Facebook takes a step toward building the metaverse, opens virtual world app to everyone in U.S.' *CNBC*. [Online].

Available from: <https://www.cnbc.com/2021/12/09/facebook-opens-horizon-worlds-vr-metaverse-app-.html>

[Accessed 1 February 2022]

Shannon, L. (2021). 'What the Epic v. Apple lawsuit means for the gaming industry.'

Washington Post. [Online].

Available from: <https://www.washingtonpost.com/video-games/2021/09/13/epic-games-apple-lawsuit-ruling-impact/>

[Accessed 3 February 2022]

Stuart, K. (2014). 'Mobile games revenue to overtake consoles in 2015, says analyst.'

The Guardian. [Online].

Available from: <https://www.theguardian.com/technology/2014/oct/23/mobile-games-revenue-overtake-consoles-2015>

[Accessed 1 February 2022]

Tang, A. K. (2016). *Mobile app monetization: app business models in the digital era*.

International Journal of Innovation, Management and Technology. 7(5), 224.

Available from:

https://scholar.google.fi/citations?view_op=view_citation&hl=fi&user=ZldKv3cAAAAJ&citation_for_view=ZldKv3cAAAAJ:Tyk-4Ss8FVUC

[Accessed 1 February 2022]

Tanskanen, S. (2021). 'Players or payers – the ever-growing trend of microtransactions in premium games.' Tuni. Playlab. [Online].

Available from: <https://www.tuni.fi/playlab/players-or-payers-the-ever-growing-trend-of-microtransactions-in-premium-games/>

[Accessed 1 February 2022]

UKEssays. (2018). *2D and 3D Games*. [Online].

Available from: <https://www.ukessays.com/essays/video-games/2d-and-3d-games.php?vref=1>

[Accessed 2 February 2022].

Utkarsh, S. (2021). 'The first mobile game ever to earn \$10 billion in revenue is Honor of Kings.' *Times of India*. [Online].

Available from: <https://timesofindia.indiatimes.com/gadgets-news/the-first-mobile-game-ever-to-earn-10-billion-in-revenue-is-honor-of-kings/articleshow/86781930.cms>

[Accessed 2 February 2022].

Warren, T. (2022). 'Apple now has 1.8 billion active devices.' *The Verge*. [Online].

Available from: <https://www.theverge.com/2022/1/28/22906071/apple-1-8-billion-active-devices-stats>

[Accessed 1 February 2022]

Waters, R. Lewis, L. (2022). 'Why gaming is the new Big Tech battleground.' *Financial Times*. [Online].

Available from: <https://www.ft.com/content/2d446160-08cb-489f-90c8-853b3d88780d>

[Accessed 1 February 2022]

Yan, A. (2017). 'Why China's Honour of Kings is so popular: it's all about communication.' *South China Morning Post*. [Online].

Available from: <https://www.scmp.com/news/china/society/article/2101716/why-chinas-honour-kings-so-popular-its-all-about-communication>

[Accessed 5 February 2022]

FIGURE AND TABLE REFERENCES

AppAnnie. (2021). State of Mobile Report 2022. Figure 9. *Top 20 Mobile Markets in 2021*. Website. Statistical graph. *Data.ai*.

Available from: <https://www.data.ai/en/go/state-of-mobile-2022/>

[Accessed 1 February 2022]

Box Office Mojo. Newzoo. Chartr. (2021). Why gaming is the new Big Tech battleground. Figure 6. Growth of gaming revenue during 2021. Statistical graph. *Financial Times*.

Available from: <https://www.ft.com/content/2d446160-08cb-489f-90c8-853b3d88780d>

[Accessed 4 February 2022]

Damer, B. (2004). DigiBarn TV: Maze War on Imlac, demo (2004). Figure 3. *Game itself*. Screenshot. Youtube.

Available from: <https://www.youtube.com/watch?v=ZgT9lgRlrvI>

[Accessed 4 February 2022]

Furini, M. (2007). *Mobile Games: What to expect in the near Future*. Figure 5. *The perception of the mobile game evolution in 2007*. Digital image.

Available from:

https://www.researchgate.net/publication/221024346_Mobile_Games_What_to_expect_in_the_near_Future

[Accessed 3 February 2021]

Giant Bomb. (n.d.). *Maze War*. Figure 1. Digital image. Website.

Available from: <https://www.giantbomb.com/maze-war/3030-23137/>

[Accessed 5 February 2022]

Google. (2022). *Top Grossing Games*. Figure 7 and 8. Statistical graph. *Google Play*.

Available from:

<https://play.google.com/store/apps/collection/cluster?clp=0g4YChYKEHRvcGdyb3NzaW5nX0dBTUUQBxgD:S:ANO1ljLhYwQ&gsr=ChvSDhgKFgoQdG9wZ3Jvc3NpbmdfR0FNRRRHGAM%3D:S:ANO1ljIKta8&hl=fi&gl=US>

[Accessed 5 February 2022]

Knezovic, A. (2022). 147 Mobile Gaming Statistics for 2022 That Will Blow Your Mind. Figure 10. Top Mobile genres in the United States. Statistical graph. Blog. *Udonis*.

Available from: <https://www.blog.udonis.co/mobile-marketing/mobile-games/mobile-gaming-statistics>

[Accessed 1 February 2022]

Olivetti, J. (n.d.). *Maze Wars+* advertisement. Figure 2. *The Game Archaeologist: Maze War*. Digital image. Article. *Engadget*.

Available from: https://www.engadget.com/2012-06-12-the-game-archaeologist-maze-war.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAJAW7Zn2HYO6XmwTPsEp3aO0mli5OQNPmGwYSY1KI2iVyAVH0D-qyqg-PM8h5VX8shXJidumJRD1hxQPuX4Dn3OcfRINKsmL_S4QBJ7aBRMRL9VI3CLiF7I_euH_R9y4JqzZ2QNmOF7wn_zk1SfwQEvC7oB70xGFORzQYvIloc5zK

[Accessed 1 February 2022]

PC Plus. (2010). *Quake 1996*. Figure 4. Digital photograph. Article. *Tech Radar*.

Available from: <https://www.techradar.com/news/gaming/the-evolution-of-3d-games-700995/2>

[Accessed 2 February 2022]