

**T.C.  
BAHÇEŞEHİR UNIVERSITY**

**A GUIDELINE STUDY FOR  
PUBLISHING HYPERCASUAL GAMES**

**Master Thesis**

**CEMAL VOLKAN BOZKAYA**

**İSTANBUL, 2021**



**T.C**  
**BAHÇEŞEHİR UNIVERSITY**

**GRADUATE SCHOOL OF EDUCATION**  
**MASTER OF BUSINESS ADMINISTRATION**



**A GUIDELINE STUDY FOR**  
**PUBLISHING HYPERCASUAL GAMES**

**Master Thesis**

**CEMAL VOLKAN BOZKAYA**

**Thesis Advisor: Asst. Prof. GÜVEN ÇATAK**



**BAHÇEŞEHİR ÜNİVERSİTESİ**  
**LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ**

10/02/2021

**YÜKSEK LİSANS TEZ ONAY FORMU**

<b>Program Adı:</b>	İşletme (MBA)
<b>Öğrencinin Adı Soyadı:</b>	Cemal Volkan Bozkaya
<b>Tezin Adı:</b>	A Guideline Study for Publishing Hypercasual Games
<b>Tez Savunma Tarihi:</b>	03/02/2021

Bu tezin Yüksek Lisans tezi olarak gerekli şartları yerine getirmiş olduğu Lisansüstü Eğitim Enstitüsü tarafından onaylanmıştır.

**Doç. Dr. Burak KÜNTAY**  
**Enstitü Müdürü**

Bu Tez tarafımızca okunmuş, nitelik ve içerik açısından bir Yüksek Lisans tezi olarak yeterli görülmüş ve kabul edilmiştir.

	<b>Ünvanı, Adı Soyadı</b>	<b>İmza</b>
<b>Tez Danışmanı:</b>	Dr.Öğr.Üyesi Güven Çatak	
<b>2. Üye :</b>	Dr.Öğr.Üyesi İbrahim Altuğ Işığın	
<b>3. Üye :</b>	Doç. Çetin Tüker	

## TEŐEKKÜR

Kendi bölümüm dışında bir alan olmasına rağmen bana güvenerek bu çalışmaya başlamamı kabul eden ve tüm aşamalarında bana destek olup yol gösteren tez danışmanım Dr. Öğr. Üyesi Güven Çatak hocama ve tezin son bölümünün içeriğini oluşturan röportaj kısmına katılarak cevaplarını ileten tüm şirket temsilcilerine teşekkür ederim.

Ayrıca tüm bu sürece başlamam için ilk adımı atmama vesile olan dostlarım Eray Tufan ve Hakan Kılıç ile sevgilerini ve desteklerini her zaman hissettiğim aileme de teşekkür ederim.

**İstanbul – 2021**

**C. Volkan BOZKAYA**

**İSTANBUL, 2021**  
**ABSTRACT**

**A GUIDELINE STUDY FOR  
PUBLISHING HYPERCASUAL GAMES**

C. Volkan Bozkaya

Master of Business Administration

Thesis Supervisor: Asst. Prof. Güven Çatak

February 2021, 46 pages

Hypercasual games are arguably the fastest-growing part of the mobile gaming industry in the past few years. As the name suggests, these games have simple mechanics and interface and are free games that take a very short time and are very easy to play. Although it seems to be a fairly new game genre, it can be seen that it has a lot of similarities with the games of the arcade era. With mobile phones being a constant part of our lives, the giant arcade cabinets in game centers that everyone loves are now at our fingertips.

The first part of this study consist of the history of the game industry from its earliest years. With the widespread use of mobile phones, the mobile gaming industry has been examined and the common features of groundbreaking games have been investigated. Here, common success factors were filtered and the factors that played a key role in the growth of hypercasual games were determined. In the final section, this new genre has been analyzed in depth. What should be considered for anyone who would like to be a publisher has been described. Special emphasis was placed on monetization strategies and metrics that need attention. Last but not least, interviews are conducted with 8 hypercasual publishers, most of which are established in Turkey. Thus, experience-based examples could be given for the most important topics.

**Keywords:** Hypercasual, Publisher, Monetization, Metrics

## ÖZET

### HİPERBASİT OYUN YAYINCILARI İÇİN BİR KILAVUZ ÇALIŞMASI

C. Volkan Bozkaya

İşletme Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr. Üyesi Güven Çatak

Şubat 2021, 46 sayfa

Hiperbasit oyunlar son birkaç yılda mobil oyun endüstrisinin tartışmasız en hızlı büyüyen parçası olma özelliğini gösteriyor. İsminden de anlaşılacağı gibi, bu oyunlar basit mekaniklere ve arayüze sahip olup, oynaması çok kısa süren ve çok kolay olan ücretsiz oyunlardır. Çok yeni bir oyun tarzı olarak gözükse de, aslında atari salonu dönemindeki oyunlarla çok fazla benzerlik taşıdığı görülebiliyor. Cep telefonlarının artık hayatımızın değişmez bir parçası olmasıyla birlikte, herkesin çok sevdiği o atari salonlarındaki dev oyun makineleri artık parmaklarımızın ucunda.

Bu çalışmanın ilk bölümünde oyun endüstrisinin en başından itibaren tarihsel gelişimi anlatıldı. Cep telefonlarının yaygınlaşmasıyla oyun sektöründeki çağ atlama incelendi ve çığır açan oyunların ortak özellikleri araştırıldı. Buradan ortak başarı faktörleri filtrelenip, hiperbasit oyunların yükselişinde hangi faktörlerin kilit rol oynadığı belirlendi. Son bölümde, ilk olarak bu yeni janra detaylıca analiz edildi. Yayıncı olmak isteyenlere nelere dikkat edilmesi gerektiği açıklandı. Paraya çevirme stratejileri ve dikkat edilmesi gereken metrikler üzerinde özellikle duruldu. Son olarak, çoğu Türkiye'den olmak üzere 8 başarılı hiperbasit oyun yayıncısı şirket ile görüşülerek, sektörde en çok nelere dikkat edilmesi gerektiği ile ilgili tecrübeler dayalı ipuçları paylaşıldı.

**Anahtar Kelimeler:** Hiperbasit, Yayıncı, Paraya Çevirme, Metrikler

## TABLE OF CONTENTS

<b>FIGURES</b> .....	<b>vii</b>
<b>INDEX OF ABBREVIATIONS</b> .....	<b>viii</b>
<b>1. INTRODUCTION: PRESS START!</b> .....	<b>1</b>
<b>1.1 EVOLUTION OF THE GAME INDUSTRY</b> .....	<b>2</b>
<b>1.1.1 Arcade Video Games</b> .....	<b>2</b>
<b>1.1.2 Home Gaming Era</b> .....	<b>3</b>
<b>1.1.3 From 8-bit to 3D Games</b> .....	<b>4</b>
<b>1.1.4 Modern Age of Gaming</b> .....	<b>5</b>
<b>1.1.5 Online Gaming Era</b> .....	<b>6</b>
<b>2. ENTERING THE MOBILE GAME INDUSTRY</b> .....	<b>7</b>
<b>2.1 EARLY STAGES OF MOBILE GAMING</b> .....	<b>7</b>
<b>2.2 RELEASE OF THE FIRST IPHONE AND AFTERMATH</b> .....	<b>8</b>
<b>2.3 SUCCESS FACTORS OF MOBILE GAMES</b> .....	<b>8</b>
<b>2.4 OUTCOMES AND LESSONS LEARNED FROM SUCCESS STORIES</b> ....	<b>16</b>
<b>3. HYPERCASUAL GAME INDUSTRY</b> .....	<b>21</b>
<b>3.1 MONETIZATION STRATEGIES AND IMPORTANT METRICS</b> .....	<b>22</b>
<b>3.1.1 Rise of Ad-Monetization</b> .....	<b>23</b>
<b>3.1.2 Retention</b> .....	<b>25</b>
<b>3.1.3 Cost Per Install (CPI)</b> .....	<b>27</b>
<b>3.1.4 ARPPDAU, LTV, ROI</b> .....	<b>27</b>
<b>3.2 IS HYPERCASUAL REALLY A GENRE?</b> .....	<b>28</b>
<b>4. GUIDELINE FOR NEW PUBLISHERS</b> .....	<b>30</b>
<b>4.1 INTERVIEWS WITH ESTABLISHED PUBLISHERS</b> .....	<b>31</b>
<b>4.2 RECOMMENDATIONS FOR NEW PUBLISHERS</b> .....	<b>36</b>

## FIGURES

<b>Figure 1 First Ever Video Game Console: The Brown Box.....</b>	<b>2</b>
<b>Figure 2 First Massively Popular Video Game PONG.....</b>	<b>3</b>
<b>Figure 3 PlayStation 1 was Introduced in 1995.....</b>	<b>4</b>
<b>Figure 4 Best-selling Home Video Game Consoles. ....</b>	<b>5</b>
<b>Figure 5 Nokia N-Gage was Produced in 2003.....</b>	<b>7</b>
<b>Figure 6 Examples of Endless Runner Games. ....</b>	<b>10</b>
<b>Figure 7 Flappy Bird Received Plagiarism Accusations. ....</b>	<b>13</b>
<b>Figure 8 Time Spent Playing Pokémon Go vs Other Top-20 Games.....</b>	<b>15</b>
<b>Figure 9: A table of Hit Games with Their Success Factors. ....</b>	<b>17</b>
<b>Figure 10 The Theory of Flow by Csikszentmihalyi.....</b>	<b>19</b>
<b>Figure 11 Revenue From In-app Purchases. ....</b>	<b>22</b>
<b>Figure 12 Global Games Market Report 2020 .....</b>	<b>23</b>
<b>Figure 13 Ad Types in Hypercasual Games .....</b>	<b>24</b>
<b>Figure 14 Hypercasual LTV by Performance Level, Q1-2020 .....</b>	<b>28</b>
<b>Figure 15 Woodturning Game by Voodoo .....</b>	<b>29</b>

## INDEX OF ABBREVIATIONS

3D	3-Dimensional
ARPDau	Average Revenue per Daily Active User
CPI	Cost per Install
CTR	Click Through Rate
DS	Dual Screen
eCPM	Effective Cost per Mille
GPS	Global Positioning System
FTUE	First Time User Experience
IAP	In-app Purchase
KISS	Keep It Simple and Stupid
LTV	Life Time Value
MMO	Massively Multiplayer Online
NES	Nintendo Entertainment System
PC	Personal Computer
PUBG	PlayerUnkown's Battlegrounds
ROI	Return of Investment
UI	User Interface
USA	United States of America
VIP	Very Important Person

## 1. INTRODUCTION: PRESS START!

A good starting point for an article about the hyper-casual game industry would be first to define what a game is, however it might not be so easy to do it as it sounds. According to Wittgenstein, it is not possible to define a game. At least some boundaries should be drawn as a prerequisite.

*Someone says to me, "Show the children a game." I teach them gambling with dice, and the other says, "I didn't mean that sort of game." In that case, must he have had the exclusion of the game with dice before his mind when he gave me the order (Wittgenstein, 1958)?*

A different approach is that instead of defining the game, compiling different definitions may give an idea about it. Stenros (2017) systematically reviewed and collected more than 60 game definitions starting from the 1930s and pointed out common ground of them as well as their discrepancies.

Last but not least, instead of trying to define a game, playing a game can be explained. When Suits' (1967) description of playing a game examined, again we face some boundaries just as Wittgenstein interprets:

*To play a game is to engage in activity directed toward bringing about a specific state of affairs, using only means permitted by specific rules, where the means permitted by the rules are more limited in scope than they would be in the absence of the rules, and where the sole reason for accepting such limitation is to make possible such activity (Suits, 1967).*

So in general, to make a single definition of a game is challenging, however, it should have some boundaries like rules, aim, gameplay/course of the event, and competition. Those boundaries will be the first step to create any game including hyper-causal mobile games.

## 1.1 EVOLUTION OF THE GAME INDUSTRY

Although there is a huge variety of game types, our main focus here will be on PC and video games. The game sector has a big share within the entertainment industry and those 2 game versions are the biggest industries in the sector (Cummings, 2007).

**1.1.1 Arcade Video Games.** The first-ever video game console, which is called “Brown Box”, is created in 1967 by Ralph Baer. The Brown Box has been licensed under the company Magnavox and it is officially released in 1972 with a ping-pong game, thus making it the first-ever video game (Hadzinsky, 2014).

**Figure 1. First ever video game console: The Brown Box**



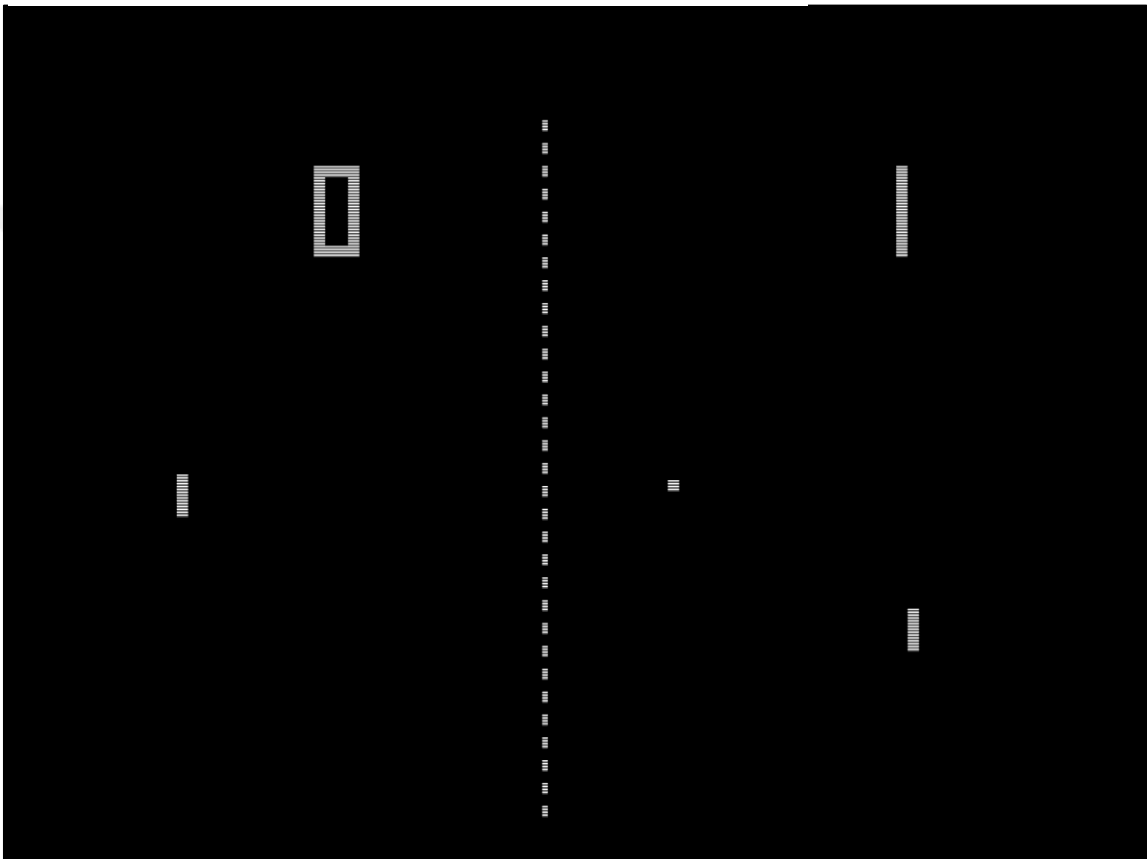
Ref:[https://miro.medium.com/max/9200/1\\*U-kBDAP5uad9vUHusz09\\_g.png](https://miro.medium.com/max/9200/1*U-kBDAP5uad9vUHusz09_g.png)

During a product demonstration of Magnavox Company in May 1972, Nolan Bushnell, soon to be known as the founder of Atari, played with this console and its ping-pong game. After trying the game, he immediately acquired a group within the same year to create a similar version of it, which is called *PONG*. *PONG* was the first video game that obtained worldwide popularity. In 1976 the game was sold for \$28 million.

Soon after the major impact of *PONG*, notable successors like *Space Invaders* from Taito, *Donkey Kong* from Nintendo, and *Pac-Man* from Namco have also gained massive

popularity. Pac-Man alone has sold over 400.000 game cabinets as well as making an inflation-adjusted revenue of \$7,7 billion (Carlson, 2009).

**Figure 2. First massively popular video game PONG.**



Ref:<https://www.welt.de/img/wirtschaft/webwelt/mobile124347308/8072507157-ci102l-w1024/Computer-Bild-11.jpg>

**1.1.2 Home Gaming Era.** By 1983, a major crash occurred in the North American video game industry, mostly because of the overdosed number of arcade platform producers. This led to the collapse of many businesses, however during 1985 Nintendo made a major leap by producing Famicom (Family Computer) in Japan. The same year, they went to the North American market with the name NES (Nintendo Entertainment System) and quickly dominated it (Ernkvist, 2008). In 1989 alone, 7 million NES consoles have been sold for a total amount of \$2.3 billion (Dillon, 2016).

For the next 25 years, Nintendo continued its development process and released some top-selling consoles, like Game Boy in 1989, Game Boy Advance in 2001, Nintendo DS (Dual Screen) in 2004, Wii in 2006, and Nintendo 3DS in 2011 respectively. All of these consoles were sold around 100 million units, showing the huge success of Nintendo (Welsh, 2017).

**1.1.3 From 8-bit to 3D Games.** The first-ever console wars started when Sega introduced model Genesis into the North American market at the beginning of the 90s. This was also known as the beginning of the era of 16-bit games. With the tremendous success of the game “Sonic the Hedgehog” Genesis made a big leap against its rival Super NES during the early 90s (Smithsonian Institution, 2017).

In 1995 Sony entered the market with PlayStation and changed video game history completely. From its competitors, Sega Saturn was \$100 more than PlayStation which resulted at the beginning of the collapse of Sega. Nintendo was more successful than Sega by introducing the 64-bit games with Nintendo 64, however instead of using the industry-standard CDs, they preferred to keep cartridges. It was not only rivals' failures but also Sony's choices were a key-factor that led them to success. Third-party gaming increased the number of options supported by the console, which resulted in a wide variety of games for players (MINOTTI, 2014).

**Figure 3. PlayStation 1 was introduced in 1995.**



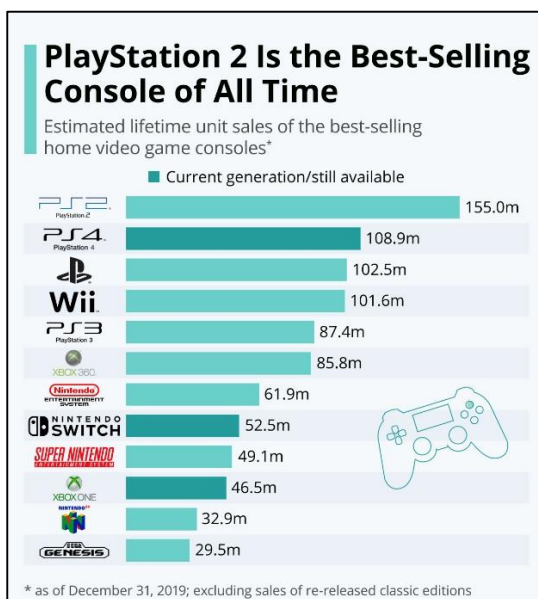
Ref: [https://www.techworm.net/wp-content/uploads/2015/04/1376859098067\\_168x168.jpg](https://www.techworm.net/wp-content/uploads/2015/04/1376859098067_168x168.jpg)

**1.1.4 Modern Age of Gaming.** At the beginning of the 2000s, video game competition was fiercer than ever. Sega released Dreamcast in 1999. With its ability to connect to the internet and online gaming option, the technology level of Dreamcast was considered ahead of its time (Smithsonian Institution, 2017). Nevertheless, it was a fiasco for Sega so as a result, they stopped selling the device in 2001. Dreamcast was also the last console Sega produced.

In 2001 another giant, Microsoft, has entered the market with Xbox and sold 24 million units, which can be considered a success for them. Within the same year, Nintendo has also released GameCube, which has reached similar sales numbers.

Among all producers, the main success story was Sony and its PlayStation 2 console. According to research in Statista (2020) with a total of 155 million sales, PlayStation 2 is still the best selling gaming system of all time (Richter, 2020). It was also the first console that uses DVDs. Even though Sony released a next-generation console “PlayStation 3” in 2006, sales of PlayStation 2 didn’t stop until 2013, which shows the tremendous demand for the device.

**Figure 4. Best-selling home video game consoles.**



Ref: <http://mmo.it/wp-content/uploads/2020/03/console-piu-vendute-di-sempre.jpeg>

**1.1.5 Online Gaming Era.** At the start of the 21<sup>st</sup> century, internet usage spread widely around the world and the gaming sector has also been affected by this trend. Console wars were fierce as always. Sony left the top spot with its not much favorable PlayStation 3. On the other hand, Microsoft's Xbox 360 brought high-definition graphics into the market and became a good choice for gamers. However, the winner of this decade was Nintendo's Wii. With its easily learned state-of-the-art motion controls and reasonable price, Wii dominated the decade with more than 100 million unit sales (MINOTTI, 2014).

Other than consoles, there were also some new strong competitors in the video game sector. PC gaming was becoming more and more popular among gamers. In 2003 Valve established a platform which is called Steam that players can download and play games both with single and multiplayer options. Not so long after that, World of Warcraft emerged as the flagman of MMO (Massively Multiplayer Online) games in 2004 and crushed the market. It is still the most popular MMO with more than 7 million active players around the world (Babalon, 2020).

The video game sector jumped to completely different platforms towards the end of the first decade of the 21<sup>st</sup> century. People were able to play games on social media platforms like Facebook. After its initial release in 2009, Farmville became the most popular game and crossed 83 million monthly active users in just 2 years (Takahashi, 2011). In the same year, Rovio published the hit mobile game Angry Birds for iPhone devices. With its game playtime of 200 million minutes per day, Angry Birds is still one of the most popular mobile video games ever (Patel, 2018).

This leads us to analyze the mobile gaming sector, which is currently one of the biggest entertainment sectors.

## 2. ENTERING THE MOBILE GAME INDUSTRY

### 2.1. EARLY STAGES OF MOBILE GAMING

The first-ever mobile game was Tetris and it is published by a Danish mobile phone company for the Hagenuk MT-2000 model in 1994. At that time, Tetris was already a worldwide popular game for almost 10 years on arcade platforms. 3 years later Nokia launched Snake on the Nokia 6610 device (Wright, 2016). It is played on more than 400 million mobile devices, thus became one of the most successful mobile games ever. One of the interesting stories about Snake is that, similar to Tetris, this game is also derived from an arcade game called 'Blockade' (K. Smith, 2015).

For almost 10 years, surprisingly there has not been much development in the mobile game sector. One of the remarkable mentions during this infertile decade was the Nokia N-Gage phone. Although it has a very promising idea like combining a game console with a mobile phone, it was a huge failure in the market. The main reason was that the phone, especially the keypad, was not suitable for gaming. After only 2 years later, Nokia has admitted that market research was not done properly and the selling numbers were way beyond their targets (Osborne, 2005).

**Figure 5. Nokia N-Gage was produced in 2003.**



Ref:[https://miro.medium.com/max/9360/1\\*\\_xkuLsWdsjMFYy\\_IHdyVtg.jpeg](https://miro.medium.com/max/9360/1*_xkuLsWdsjMFYy_IHdyVtg.jpeg)

## **2.2. RELEASE OF THE FIRST IPHONE AND AFTERMATH**

There has been a revolution in the mobile game sector when Apple produced the first iPhone in 2007. With its 3.5 inch touchscreen, it was a whole new gaming experience for the players. In 2008 AppStore is launched. The first-ever game sold on AppStore was Texas Hold'em (Heuristic, 2019). Angry Birds was released in 2009 and became the first game that gained worldwide commercial success. After the huge success of Angry Birds, the amount of successful games has increased rapidly. Games like Temple Run, Candy Crush, and Pokémon Go are completely different from each other, however, each of them has some factors that lead them to the top spot in the markets for quite some time. In the upcoming chapter, those success factors will be examined in other to find some commonalities between them and whether those factors can be taken into account also for hypercasual games or not.

## **2.3. SUCCESS FACTORS OF MOBILE GAMES**

Without a doubt, the first game that will be analyzed is Angry Bird. As mentioned before, it is released in 2009 for Apple and in 2010 for Android devices. It is a casual puzzle game with a turn-based strategy. It received a score of 80 out of 100 on Metacritic, which is a review aggregator website. In just 2 years, the game has been downloaded more than 500 million times (Purchase, 2011). One of the key factors that led to success was the price of the game. By that time, high-quality games were all expensive. However Angry Birds was just \$1. It was also really easy to learn and progress, with fun animations and catchy characters. As a result, it was one of the most successful mobile games ever.

In 2010, Fruit Ninja is released for both Apple and Android devices. It is an arcade action game and it requires some skills to play. Its Metacritic score is 75, so slightly less than Angry Birds. In 2012, Fruit Ninja reached 300 million downloads and in 2015 it was 1 billion (Serrels, 2016). The game is very easy to learn, basically there is a single movement that is slicing the fruits.

The mechanics of the game were designed completely for touch screen devices, so it was an intuitive move for those years. Similar to Angry Birds, it was also \$1. The combination of low cost and addictive gameplay led this game to succeed.

A completely new type of game is introduced in 2011 and immediately rose to the top spot in charts. Temple Run is an endless runner platform game and it is the pioneer of this genre. It received an 80 overall from Metacritic. Like every successful game, Temple Run also had lots of sequels and spin-offs. In 2014, it was announced that the whole franchise reached 1 billion downloads (Truong, 2014). Although there were similar examples, like Canabalt in 2009 and Robot Unicorn Attack in 2010, the endless runner genre was not popular until Temple Run. One of the main reasons for that is again the price tag. Other games are sold around \$3, however Temple Run was a freemium game. According to Bullard (2018) 'Freemium' concept can be described as follows:

*Freemium refers to a business model of providing a product free with the hope that customers will later be willing to pay for extra features that will enhance their enjoyment of it. The term is a combination of the words "free" and "premium" and was coined by Jarid Lukin and Fred Wilson in 2006. In May 2014, applications using the freemium model accounted for 98 percent of all revenue in the Google app store and 95 percent of the revenue in the Apple app store (Bullard, 2018).*

So Temple Run was one of the first commercially successful game that is free on the AppStore. Publishers gained from in-app purchases instead of one-time costs. Similar to Fruit Ninja, the only mechanic of the game is swiping, however this time it is more limited. Players can swipe only in 4 main directions, so there is a limitation that also brings more simplicity into the game. Another factor for the high demand for the game is familiarity. Avoiding dangerous obstacles is already an instinctive behavior. On the other hand, the treasure hunt concept is a widely used idea for movies, games, etc. Last but not least, using famous sportspersons like Usain Bolt attracted more attention to the game (Holt, 2014). Exactly one year after Temple Run, another endless runner platform game is released in 2012. Subway Surfers has a score of 71, mostly because it is seen as a replica of Temple Run. The biggest criticism about the game is that it does not have any value added to the endless runner genre.

Nevertheless, according to App Annie, Subway Surfers is the most downloaded game of the decade with a total of over 2.7 billion times around the world (Newswire, 2019).

Other than that, it is also the first game that reaches 1 billion downloads and the most downloaded game ever in Play Store. So the question is, even though it is seen as a replica of Temple Run, why does the download numbers of Subway Surfers greater than its biggest rival. Although the graphics of Temple Run is more realistic, players start to lose their excitement after a couple of games. The cartoonish style of Subway Surfers attracts more attention. Besides, the game does not force in-game purchases, thus making the gameplay less annoying for the players.

**Figure 6. Examples of endless runner games.**



Ref: <https://i.ytimg.com/vi/7HqXM4LKSCU/maxresdefault.jpg>

Completely another game is released in 2012 initially for Facebook, but due to the instant success, it is also released for mobile devices within 6 months. Candy Crush Saga is a match-3 puzzle game, where you mainly swap pieces to play.

So for almost every other mentioned game above, this one also works with the swap mechanism. It received 79 from Metacritic, however, user reviews were worse. One of the main reasons for it is the design of the increase in level difficulty. First levels are really easy to pass however after a certain level, it becomes harder to complete a level so to pass you need to buy some enhancements. There are also some controversial law cases based upon applications of the publishing company for the trademark of the words ‘candy’ and ‘saga’. Consequently, mobile game producers are not allowed to use those words for their games.

Even though the customers are not very satisfied, the numbers are telling a different story. “According to King, the developer of the popular app game, a whopping 9.2 million users spend more than 3 hours daily on the game” (Cheema, 2019, para. 2). The users are not only playing the game but also spending considerably. The game makes yearly around \$1 billion in revenue (Crecente, 2018). When we look at the reasons behind this popularity, the first thing to notice is that the game is freemium as in previous examples. The second one is that when you lost all of your ‘lives’ in the game, you can send requests to your friends for free lives. By doing that, you can both attract them to play again and make them register for the game. Third of all, when you constantly fail to pass a certain level or if you do not play the game for a long time, the game makes that level easier for you to pass. So that you can continue playing. Fourth of all, if you keep playing and keep winning, the game rewards you more on the next levels.

Other than those mechanical factors, there are also psychological ones. When you make successful combos or finish a level, the game always praises you with words like ‘awesome’ or ‘tasty’ with some flashy animations and celebrations, which increases the dopamine level in our body. Using something to eat in games is already a known tactic also from slot machines (D. Smith, 2014). Our brain also loves to solve puzzles in general. When something does not seem right, we automatically try to fix it. Last but not least a very strong and ancient psychological factor is used called ‘Rule of Three’. The Latin phrase ‘Omne Trium Perfectum’ means ‘everything that comes in threes is perfect’.

This principle says that “a trio of events or characters is more humorous, satisfying, or effective than other numbers” (Clark, 2015). So to sum up, regarding all of those mechanical and psychological factors, Candy Crush Saga is one of the most addictive and top-grossing games of all time.

Within the same year, an online multiplayer strategy game is released. In Clash of Clans, you build a village, train some troops and make wars with other players. It received 74 from Metacritic but has worse user reviews. The main reason for this is, that the more you progress in the game, the required time for developing within the game does increase and if you want to speed up that development time, you need to purchase gems and use them. Although it is a downside to the game, once more the numbers are telling a different story. Clash of Clans was the all-time leader in revenues among all mobile games with an estimated more than \$6.4 billion as of early 2019 (Carpenter, 2019). It is also in 5<sup>th</sup> place by download after Subway Surfers, Candy Crush Saga, Temple Run 2, and My Talking Tom (Valentine, 2019). There are two major success factors for Clash of Clans. First, the developers have continuously worked to balance the game. Second, people can socialize with each other by creating clans and most importantly by chatting. Candy Crush Saga had the first layer of socializing via the element of competing with your acquaintances, as well as helping each other by sending extra lives. On top of those mentioned points, the game also has a short-timed single-player campaign mode, where you can have a quick match during a break.

In 2013, a very controversial game is released in AppStore, called Flappy Bird. It is a single-player arcade game that received a Metacritic score of 52, which is one of the lowest for a chart-topping game. It is an infinite side-scrolling game and the only mechanic in the game is tapping. Although it sounds simple, the game is extremely difficult to progress, hence getting lots of negative criticism. On the other hand, it was a highly addictive game and climbed the success ladders extremely fast. It is first released in May 2013 and then within a couple of months in early January 2014, the game was number one in AppStore earning \$50,000 daily with in-app commercials (Spence, 2014). On the 24<sup>th</sup> of January 2014, the game is also released for PlayStore and within a week it became the most downloaded app on the store.

On the 8<sup>th</sup> of February, the developer of the game Dong Nguyen announced on his Twitter account that the game will be removed from every app store because he thinks it is too addictive. In his own words, he said: “it is not anything related to legal issues, I just cannot keep it anymore”. The reason for his mention of legal issues is the high number of accusations to the game. There were reviews that the developers used bots to boost the game (Totilo, 2014). Other than that, the game had Mario-style green pipes and sound effects so it is accused of plagiarism. The developer strongly rejected all of those, however, the biggest criticism was yet to come. Some Vietnamese reporters mentioned that the game is extremely similar to a game named Piou Piou vs. Cactus which is released two years before Flappy Bird (Quân, 2014). Both games have similar birds, similar mechanics, and similar obstacles. Nguyen once more rejected all the blames however he removed the game and it remained unknown whether the reason for removal was legal issues or not.

**Figure 7. Flappy Bird received plagiarism accusations.**



Ref:<http://www.indogamers.com/system/upload/media/pictures/52f83ead5860f1392000685flappybird3.jpg>

In 2013, a digital pet game called My Talking Tom has been released. It is a virtual cat and it can be defined as an upgraded version of a Tamagotchi. According to the definition in Wikipedia, “Tamagotchi is a handheld digital pet”. It was a worldwide popular device in the late 90s among kids. My Talking Tom has the same principles as its predecessor. You can feed your pet, nurse it, and play games with it. Most importantly it has a feature that can replay the sounds you make for up to 25 seconds, which is the main factor for the adults to use this app. My Talking Tom has more than 250 million active users around the world and surprisingly most of them are not kids (Newman, 2015). The game also used the power of social media and created a YouTube account with short videos of characters in the portfolio and also an animated mini-series that is watched around 350 million times. So they have heavily invested in interactivity by both adding some features in-app and by taking advantage of social media. As a result, the publisher company has been sold in 2017 for \$1 billion (Handrahan, 2018).

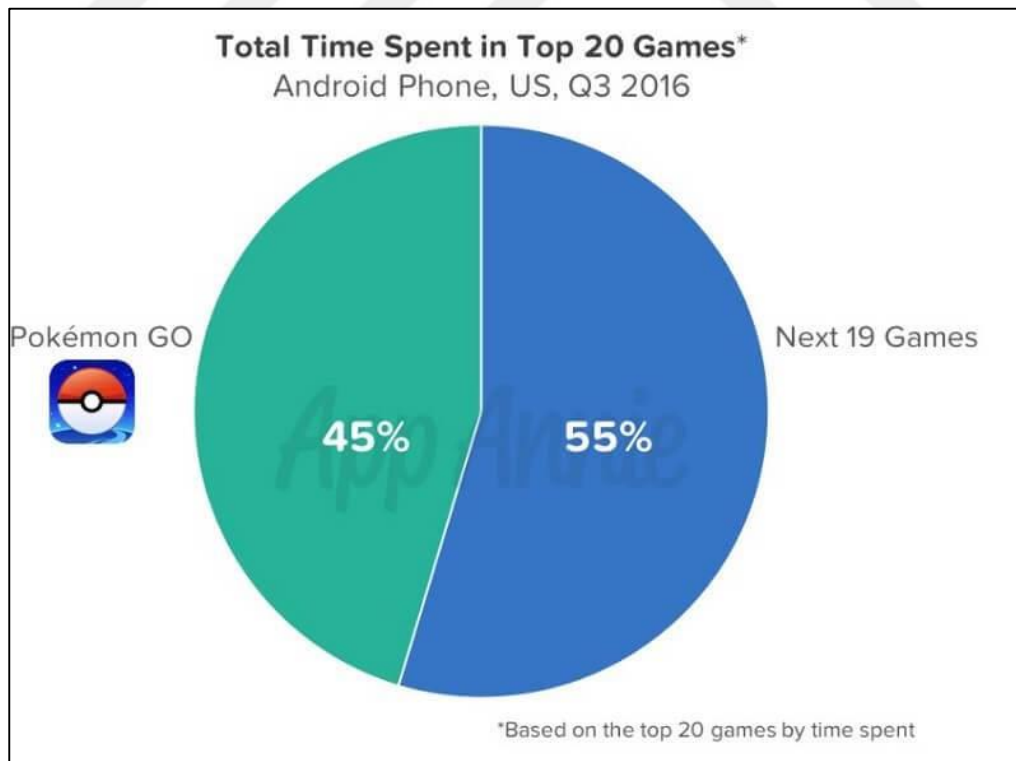
In July 2019, Pokémon Go was released and it remained on almost everyone’s agenda for the whole summer. It is an augmented reality location-based game and has a 69 Metacritic score. As in previous examples, this one also uses a freemium model and has in-app purchases. The game uses GPS to locate the user and the elements of the game. So the game map is the real world. By using the augmented reality feature, we can see the game elements, mainly Pokémons, around us through mobile devices. Another effect of the game is that to progress, you need to go outside, walk a lot, and search for Pokémons. So, the game itself might be a little too easy, however socializing and exploring factors of it are the real deal for this game. People had fun by simply going out and walking with groups.

On the contrary, the game received lots of criticism for technical problems. Especially within the first weeks, due to the unexpected traffic within the game, servers went down for a long time (Thler, 2016). In addition to this, people were not paying attention to their surroundings, which caused traffic accidents. According to an analysis, just 5 months after its launch “Pokémon Go may have contributed to nearly 150,000 traffic accidents, 256 deaths and economic costs of \$2 billion to \$7.3 billion” (Revell, 2017) only in the USA.

Developers had to put a warning before starting the game, that stating ‘don’t drive and play’. They also put a moving speed limit, to prevent car usage. Other than that, there were some cheaters, which are using bots instead of walking. Again in the USA, a teenager found a dead body while searching for Pokémons.

Although the game has some technical problems and controversial events, it broke almost every record in the market within the scope of download and revenue. It became the fastest mobile game to have 10 million downloads by reaching it within 1 week only (Molina, 2016). Within the first 20 days alone, it generated \$100 million and during that time, there were around 45 million ‘daily’ active users worldwide (Iqbal, 2019). In the following figure from App Annie, it can be seen that the total time spent on Pokémon Go is almost equaled to the total time spent on the next 19 games combined.

**Figure 8. Time spent playing Pokémon Go vs other top-20 games.**



Ref:<https://venturebeat.com/wp-content/uploads/2016/10/app-annie-4.jpg?resize=800%2C595&strip=all>

The last game that will be analyzed here is PlayerUnknown's Battlegrounds (PUBG). Published in 2018, PUBG is a first of his kind battle royale shooter game. It has received 82 from Metacritic. PUBG was the only battle royale game to be on the top 10 lists for both most downloaded and consumers spent in 2019. Within the same year, it became the first battle royale game that earned \$1 billion (Taylor, 2019).

The first thing to notice as a success factor is that battle royale games are played with a mass community. So, during a single session in PUBG, you play with 100 people, and you can play with your friends within the same session. Another factor is that the game can be played by anyone on any level of skill and knowledge. According to the success in the game, it rewards you more. So there is a fair distribution model. Publishers also invested a huge amount of money they gained into the development of the game and also cleanse the cheaters and hackers for a fair and healthy environment (Sarwar, 2019).

## **2.4 OUTCOMES AND LESSONS LEARNED FROM SUCCESS STORIES**

What are the success factors of a mobile game? Although there isn't any concrete answer to this question, there are agreements on certain items. Publishers and developers agree on most of the factors that make a game successful. In this chapter, those items will be examined, as well as the outcomes from the previous chapter will be detailed.

A total of 10 mobile games have been analyzed with their accomplishments, critics, and styles. These games are Angry Birds, Fruit Ninja, Temple Run, Subway Surfers, Candy Crush Saga, Clash of Clans, Flappy Bird, My Talking Tom, Pokémon Go, and PUBG Mobile, in chronological release order. Each one of these games had an undeniable success within the last decade. By looking out for their common denominators, a list of 10 different variables has been obtained. In the following chart, a cross-section of the games and variables can be viewed, which is prepared subjectively regarding the research done above.

**Figure 9. A table of hit games with their success factors.**

	Angry Birds	Fruit Ninja	Temple Run	Subway Surfers	Candy Crush Saga	Clash of Clans	Flappy Bird	My Talking Tom	Pokémon Go	PUBG Mobile
Freemium Model	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
Commonality/Familiarity	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗
Socializing Options	✗	✗	✗	✗	✓	✓	✗	✓	✓	✓
Game Mechanics	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗
Graphics/Animations	✓	✓	✗	✓	✓	✗	✗	✓	✓	✓
Endless	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
Easy to Learn	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗
Fun for Everyone/Big Tent	✓	✓	✓	✓	✓	✗	✗	✓	✓	✗
Pioneer of the Genre	✓	✗	✓	✗	✓	✓	✗	✗	✓	✓
Game Balance/Cont. Improvement	✓	✗	✗	✗	✗	✓	✗	✓	✓	✓

There are different aspects of the game like the business model, gameplay, graphics and audio quality, storyline, replayability, and social factors (Salvina, 2018). 10 variables that are brought up here mostly covers those aspects. The ‘Freemium’ model is an essential concept for these games. Only Angry Birds and Fruit Ninja were not using this business model, however, they were only \$1. The second factor is commonality, so how familiar are people with the concept. The concept can consist of real stuff like animals, fruits, candies or they can be a cultural phenomenon like Pokémon or Indiana Jones as in Temple Run. Using something familiar speeds up the process of getting used to it.

One of the key factors according to my research is the socializing element. Until a certain point in time, there wasn’t even a discussion to include socializing options into games. However, Candy Crush changed this behavior completely by using Facebook to increase its popularity by enabling players to help each other. It can be evaluated as a revolution in

mobile game history. Since then, almost every game has a social factor one way or another. Game mechanics have also changed dramatically. Other than some MMOs like Clash of Clans or PUBG Mobile, games have very simple mechanics. Most of them only have 1 move to play the game (tapping for Flappy Bird, swiping for Fruit Ninja and Pokémon, etc.). Simplicity is an important factor, on the other hand, quality should be also high. Graphics, sound, and animation quality bring a game one step forward than others.

Among those ten criteria above, endlessness is the most used one. It is present in 9 out of 10 games on our list. Only Angry Birds has a limited amount of campaigns. Theoretically, Candy Crush Saga also has a limited amount of games, however currently there are thousands of levels, and every week new levels are coming, so it can be named endless. There are 2 other criteria, which can be interrelated. How easy to learn this game and is it appealing to everyone? They are also directly related to game mechanics, so other than MMOs, all of those games are both very easy to learn and suitable for every age.

Being a pioneer in its genre not always brings you forward, however using the first-mover advantage strategically provides a massive advantage in the race with direct rivals. Whenever a game climbs to the top charts, clones start to pop-up immediately. After Pokémon Go, some other cultural phenomenon like Harry Potter and Jurassic Park followed the same strategy. However, it is not easy to steal Pokémon Go users, since they have some progress in that game and do not want to lose it.

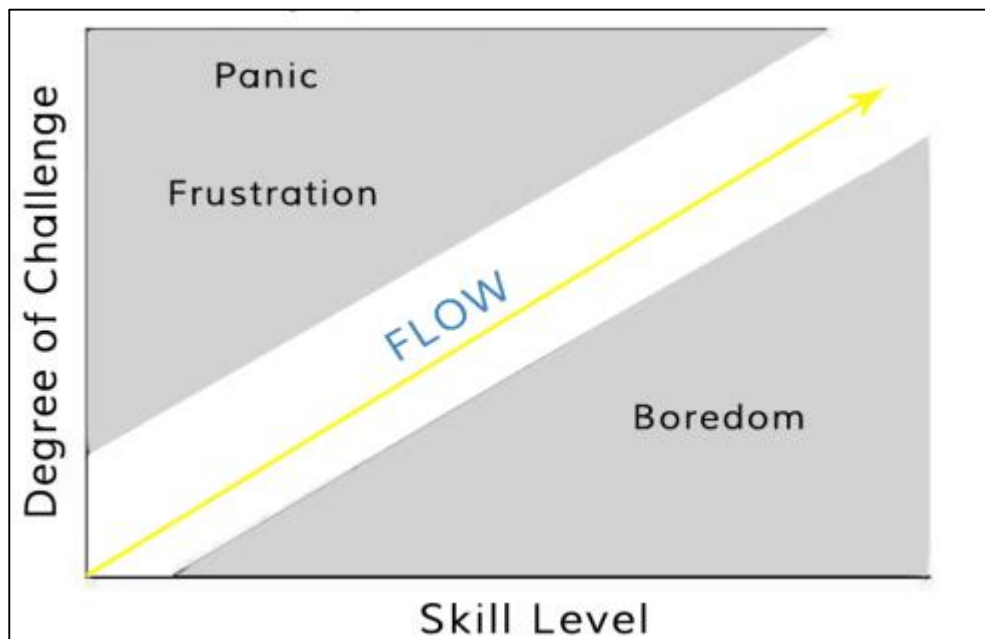
The final factor in the list is game balance/continuous improvement. It is the least common variable among the mentioned games, but the main reason for it is that most of the games are so simple that it would be worse to add extra features to the game. However, especially for MMOs, companies are continuously fighting with the cheaters to bring balance to the game. PUBG mobile publishers recently invested in a new security system and currently, thousands of players are banned from the game every day. As an 18-year game industry veteran David Fried says “User Experience Is Everything” (Fried, 2016).

Flodman and Karlsson have researched the very same topic in 2014 by analyzing two of the most successful mobile game companies in the world; King and Rovio. In the end, they come up with 4 major factors (Flodman & Karlsson, 2014):

- i. The Game and its Elements
- ii. The Experience
- iii. Marketing
- iv. Business Models

Within the game elements, the first thing they mention is dynamics like constraints and the narrative of the game. Mechanics come as second as we also mentioned. Components like levels, quests, teams, and aesthetics factors like UI, graphics, sounds are also key elements of the game. The second major factor is the experience which bifurcates as flow and fun. The theory of flow focuses on enjoyment. It says that there is a direct relationship between the average skill level of the players and the degree of challenge in the game (Csikszentmihalyi, 2014).

**Figure 10. The Theory of Flow by Csikszentmihalyi.**



Ref: <http://www.diva-portal.org/smash/get/diva2:721114/FULLTEXT01>

Marketing is the third major factor and also the only one that is not mentioned before. There are a couple of historically successful approaches that can be followed. One of them is investing more budget for marketing than development. Another one is going viral. More details about these marketing strategies will be explained in the next chapters. Last but not least, the business model is the fourth major factor. App-purchases, advergaming, and in-app-purchases can be considered as the ruling models in the sector. Although almost every major game is using a freemium model with in-app-purchases, for hypercasual games advergaming is a more frequently used one. The reason for it will be also discussed in the next chapters.

### 3. HYPERCASUAL GAME INDUSTRY

Although hypercasual games are identified as a fairly newborn genre, the roots of this game type go way back to the arcade gaming era. Since there isn't any consensus on the historical background of hypercasual games, there isn't also any strict definition of them. Karnes makes a definition by putting fundamental items together: "Games with a nearly flat learning curve, no time restraints, and simple mechanics are known as hypercasual" (Karnes, 2020).

Pong (1972) might be considered one of the first hypercasual games because it simply covers all of the items mentioned above. However, it would be hard to tell that those huge arcade consoles are even casual. Pac-Man (1980) for example was also one of the most successful mobile games of all time and also covers all the requirements of a hypercasual game, but the same as Pong it was also not easy to access and play.

So, if we remove the 'accessibility-by-wide-audience' factor, hypercasual genre roots trace back to classical arcade games of the 70s and 80s. Then why those games have turned into a serious business only in the last couple of years? The answer might be the preferred monetization model. Instead of using the mainstream IAP model (in-app purchase), hypercasual games mostly rely on ad monetization. The conventional method for monetization is to have a small amount of loyal high-paying users, which are also called 'whales', and milking them. According to the monetization report prepared by Swrve in 2019, only a tiny 1.6% of active users are making an in-app purchase and the amount spent on most of those purchases is not worthwhile enough. The top 10% of paying users creates 64.5% of the total revenue ("Gaming Monetization Report," 2019). When hypercasual games are on the table, monetization preferences can be slightly different.

**Figure 11. Revenue from in-app purchases.**



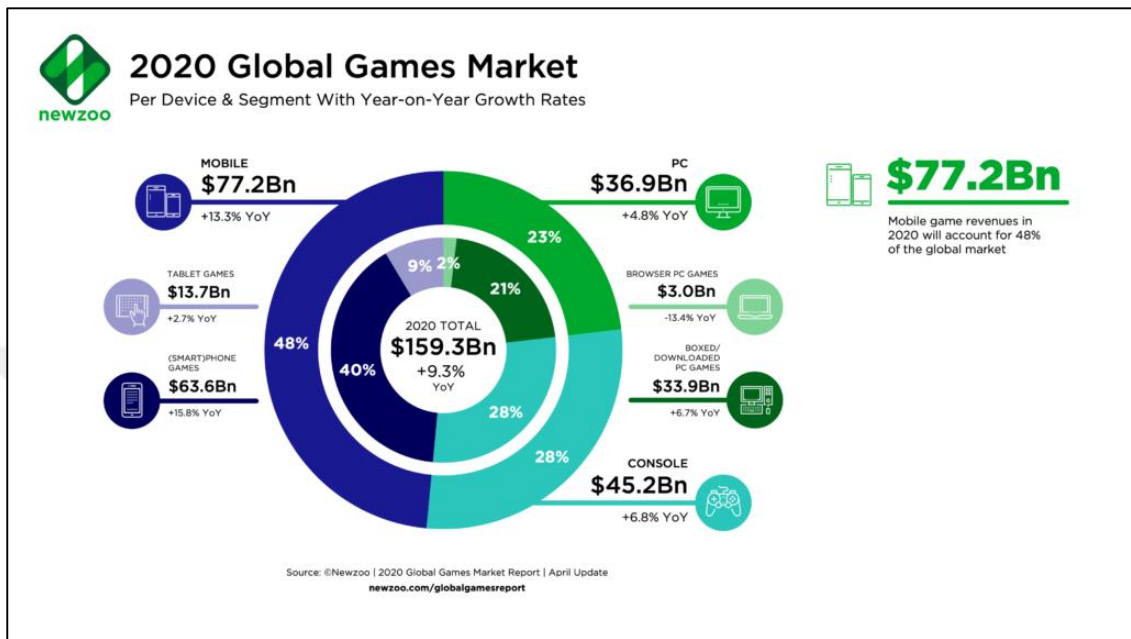
Ref: [https://cdn2.hubspot.net/hubfs/5516657/Monetization%20Report\\_final.pdf](https://cdn2.hubspot.net/hubfs/5516657/Monetization%20Report_final.pdf)

To create revenue from in-app purchases, you need to have VIP customers, in other words: whales. Whales are your loyal customers who bring a considerable amount of money regularly. However, the nature of hypercasual games does not correspond to loyalty. They are fast-consumed products, so the IAP model will not work here. In the following chapter, more detailed information about monetization models, as well as different strategies for the hypercasual sector, will be explained.

### **3.1 MONETIZATION STRATEGIES AND IMPORTANT METRICS**

Today the video game market has a total revenue of \$159.3 billion, and \$77.2 billion of this has been generated by mobile games alone (Wijman, 2020). This means almost half of the global market is dominated by mobile games and it is not slowing down. Mobile games made the biggest jump with a 13.3% growth from the previous year, in comparison to console games (6.8%) and PC games (4.8%). It is also expected for the video game market to continue to grow and eventually surpass \$200 billion in 2023.

**Figure 12. Global Games Market Report 2020**



Ref: [https://miro.medium.com/max/3156/0\\*Tje4Rc4W\\_Psa90ZD](https://miro.medium.com/max/3156/0*Tje4Rc4W_Psa90ZD)

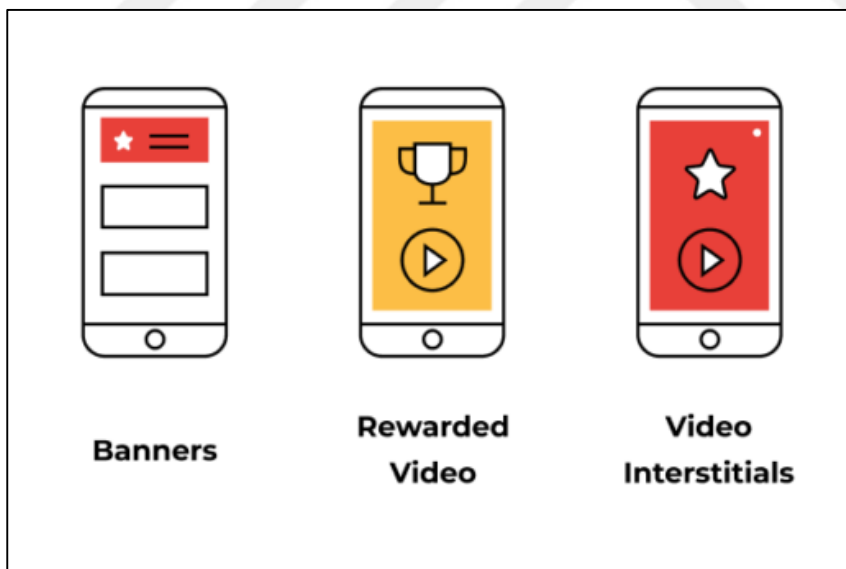
**3.1.1 Rise of Ad-monetization.** There are mainly 3 monetization models that are used for mobile games and also a 4<sup>th</sup> one that is beneficial specifically for the hypercasual genre. The first and oldest strategy is the premium model. There is a price for the game and you need to pay first to download it. It is a strictly opposite behavior for hypercasual games since the aim is to be more accessible by everyone.

The second model is in-game purchases. This model is also known as the freemium model and as mentioned in Chapter 3, most of the successful mobile games are following this method. So, the game is free and you pay only if you wish to have some advantage within the game, like extra lives or coins, etc. According to a forecast by AppAnnie, users will spend as high as \$156.5 billion in in-app markets and more than half of this spending is only for mobile games (Knezovic, 2020). One thing to consider while using this approach is to make sure to have items with a wide range of price tags. So it is a reliable model, however once again it is not very well suited for hypercasual games.

Before getting to the most commonly used ad monetization model, there is another method, which is highly effective only for hypercasual games. This method is called: cross-promoting. Cross-promoting is promoting another game, which can be one of your games or someone else's, by putting an interstitial ad into your game. If this ad can be a playable one, it attracts more attention. If it is possible to create relationships with publishers that have similar audience segments, cross-promotion will help to increase the user base and to have a positive promotion cycle for both parties (Hreninciuc, 2018).

Inarguably the best possible model for hypercasual games is ad monetization and there are mainly 3 types of ads that are used commonly: banners, interstitial ads, and rewarded videos.

**Figure 13. Ad Types in Hypercasual Games**



*Ref: <https://pixelfield.co.uk/blog/wp-content/uploads/2019/11/formats-1-1024x432.png>*

Banners are one of the oldest methods to use and the fact that it is still preferred shows its success. It costs less than other ad-types and does not cover the whole screen, so you can keep playing while the banner is shown. On the contrary, this 'low-noticeability' may cause immunity to banners. Users are very familiar with them, so the key to a successful banner promotion is to make it compelling, concise, and clear (Arnold, 2015).

First of all, banners should be attention-grabbing by the usage of dynamic images, animations, colors, etc. It should be also very brief but has to include all the necessary information. Lastly, the message should be given directly because it will take attention only for a couple of seconds.

Interstitials are full-screen video ads that are shown between levels. They are one of the main income sources for hypercasual games, however, they might receive some negative responses. According to research done by a leading in-app mobile video advertising platform, 22 percent of the people who are exposed to interstitials are looking for the X sign to exit during the video (MediaBrix, 2016). A clever way to make them more engaging is to put a playable video, thereby making the ad experience more amusing.

Rewarded in-game videos are not only popular among hypercasual genre but also used in almost all types of games. Regarding a data analysis by Smaato, users are clicking on rewarded ads 18 times more than banners for hypercasual games. Their eCPM (effective cost per thousand impressions) value is also 8 times higher (Fishback, 2020). Just for a comparison, the same analysis shows that those values are 24x higher for CTR (click-through rate) but only 3x times higher for eCPM when considering interstitials. This verifies that rewarded videos are clicked less, however brings in more money. A survey by OpenX reveals that 80% of the users are likely to watch rewarded videos instead of any other types of ads (OpenX, 2018). Considering the content of the game, those rewards may be extra lives, in-game soft currency, extra time, prize double-up, etc.

The monetization model is for sure an important factor to create a successful hypercasual game, however, some other metrics should be also taken into account through this path of success.

**3.1.2 Retention.** Some metrics helps a product owner to measure the success of its product in the market and to observe the interaction of customers/users with the product. Customer loyalty analyses show that the loyal 12-15 percent of customers bring 55-70 percent of sales. The same research also shows that to obtain a new customer is 5-7 times more costly in comparison to keeping the existing one (Gaille, 2017).

These statistics lead us to a key factor called retention in the gaming sector. In simple words, “N-Day retention shows the percent of users who return to the app on a specified day after their first launch” (Yakubenkov, 2020). That means Day 1 retention shows the percentage of users that log in to the game again after their initial login on the previous day. So, it shows if the users are returning to the game or not.

The most commonly used method for retention is to check daily, weekly and monthly values. An analysis done by Game Analytics with 1.2 billion mobile game players shows that for best performing 25 percent of games Day 1 retention is 35%, Day 7 retention is 11% and Day 28 retention is only 4%. Industry averages are slightly less than those values, with 25% Day 1 retention (Forde, 2019). Hypercasual publishers have a higher standard for this metric. Voodoo, regarded as one of the best hypercasual publishers, has a limit of 50% Day 1 retention rate to reckon a game as successful (Kinniburgh, 2018).

To keep the retention rate on a higher level, some steps can be followed. One of the first things to keep in mind at the beginning is the so-called First Time User Experience (FTUE). Especially for hypercasual games, this is foremost important, since the game starts immediately for most of them. Another topic that is related to the first one is the user interface. In most cases, the KISS principle (Keep It Simple and Stupid) works perfectly. Navigation within the game should not be confusing. Giving daily login rewards is an excellent way to make players return every day. On top of that, providing some in-game achievements makes the session length longer. Session length is crucial for hypercasual games since the monetization method mostly relies on ads and banners. Last not but not least, push notifications are a commonly used tactic for almost any mobile app. It is a very powerful tool to remind users of returning to the game.

Although there are lots of methods to use for increasing retention when considering hypercasual games the points mentioned above can be taken more into account. Nevertheless, without making a high-quality product, those factors will be not very effective. Putting the bar on a high level at the beginning and then keeping it there with continuous improvement is a key to keep users.

**3.1.3 Cost per Install (CPI).** The price paid to acquire a single user from the ad-campaigns is called cost per install or CPI. An important thing to consider here is that organic installs are not included when calculating this metric. Thus, it also shows the performance of the advertisement.

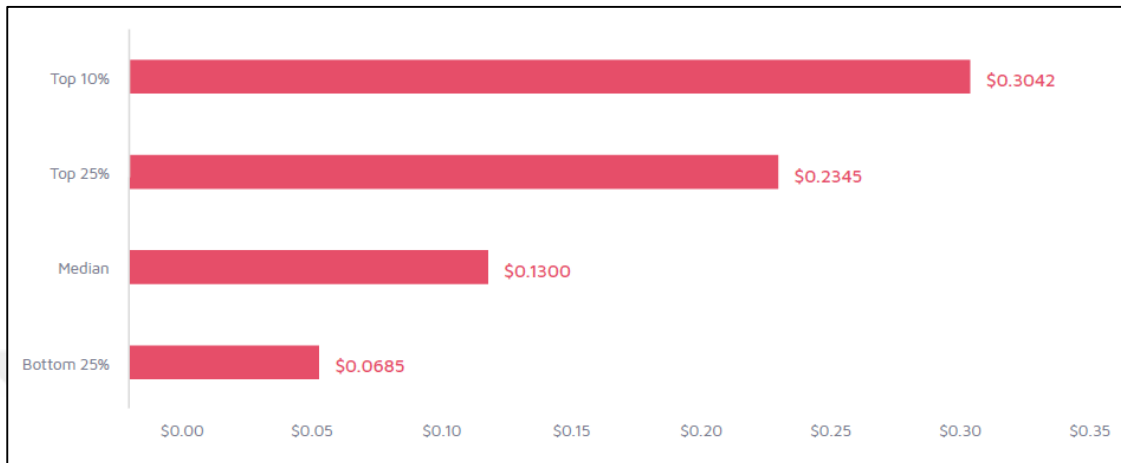
CPI value may vary regarding the region or the operating system, however, it is obvious that hypercasual games have the best rates among all game types. According to the 2020 gaming report from Adjust, hypercasual games have by far the best results with a \$0.16 on Android and \$0.46 on iOS devices on a global scale (“Hyper casual gaming in 2020,” 2020).

One of the ways to improve this metric would be targeting the right audience for your promotion. If we have a hypercasual game, then the marketing campaign should be targeted to the people who have recently downloaded one. Another way is to check the post-install behaviors. For example, after checking the session activity, a personalized re-engagement method can be applied to specific cohorts. These post-install behaviors also show how valuable the user is, thus it gives a hint for the potential user profile. In this way, a more targeted campaign can be created (Desaulniers, 2016).

**3.1.4 ARPDau, LTV, ROI.** Average Revenue Per Daily Active User (ARPDau) is the most important metric to understand the monetization performance of a game. When considering hypercasual games, this revenue is mostly from ads and a small amount from IAPs. To decide the future of a game, publishers should check this value daily and make a balance of it with CPI-value (Herriger, 2019). The key element to improve this metric is to make experiments with the in-app ads. Placement, frequency, content, and relevancy of the ads can be customized to obtain the best revenue on ad-monetization.

ARPDau is a daily metric. When we multiply it with an average user’s estimated lifetime, the result will be LTV (Life Time Value). Since this value consists of 2 variables, you should either increase the lifetime, hence the retention rate, or grow the ARPDau. Below is a table for benchmarking LTVs according to the Adjust’s 2020 gaming report.

**Figure 14. Hypercasual LTV by performance level, Q1-2020**



Ref: [https://miro.medium.com/max/1310/0\\*8Y3a8CAR0BqKApkR.png](https://miro.medium.com/max/1310/0*8Y3a8CAR0BqKApkR.png)

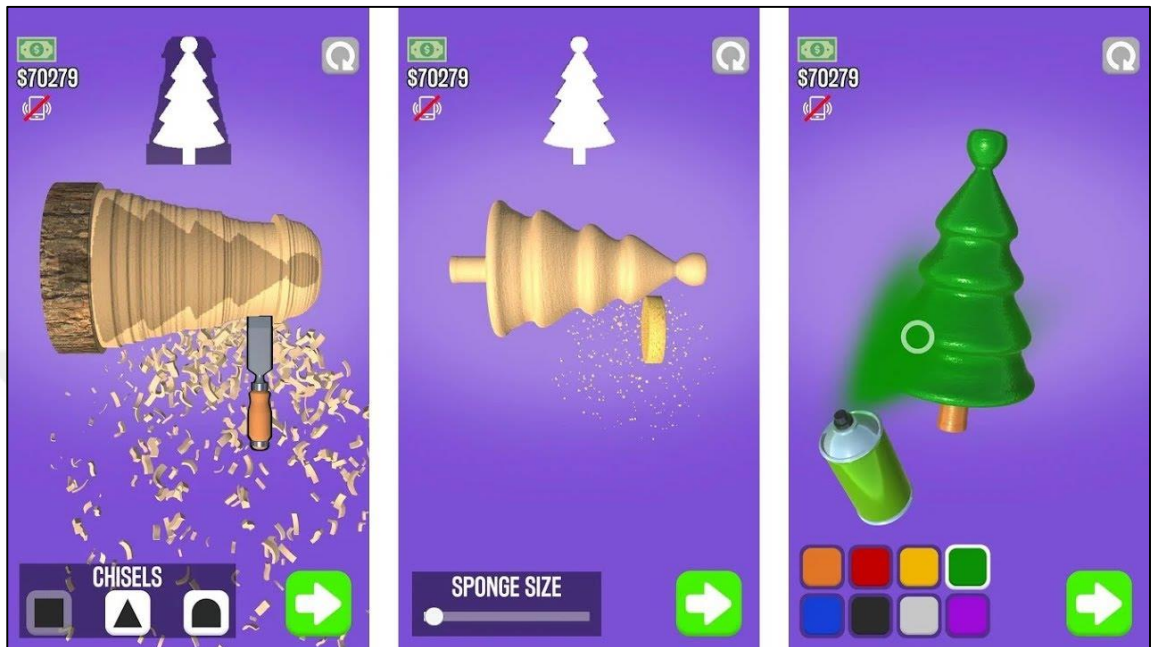
As seen from the table above, the industry average for LTV is \$0.13, so having a better value from this one is an indicator that you are on the right track. The fact that the top 25% performs almost twice the average, gives another nice tip about the potential of the hypercasual game industry.

After explaining CPI and LTV, there is a final metric that should be taken into account, which is ROI (Return of Investment). The ultimate goal of getting into this business is to make a profit. Hence, ROI becomes the most important variable to control for a publisher. Calculating this value is very simple. If  $LTV > CPI$ , you have a positive ROI, so keep doing the job. If  $LTV < CPI$ , then you have a negative ROI, so something needs to be changed.

### **3.2 IS HYPERCASUAL REALLY A GENRE?**

As stated before, the essential condition ‘sine qua non’ for all hypercasual games is to have a simple mechanic. Most of the time they are really easy to digest and do not have increasing difficulty. Some games are so simple that they do not fit today's classical game description. Let's take Voodoo's Woodturning game as an example.

**Figure 15. Woodturning game by Voodoo**



Ref:<https://mobilemodegaming.com/wp-content/uploads/2020/04/maxresdefault-2-1024x576.jpg>

The main action in the game is wood carving polishing and painting. So it can be called a 'hobby' rather than a game. On the other hand, the difficulty level of the Tower Run game from the very same publisher is way above the median. So, we can conclude that even if the publisher is the same, the variety of games can be very different. This leads us to ask this question: Are hypercasual games actually a genre or a monetization model? Director of product at Pixion Games and director of Mobile Free to Play website Tom Kinniburgh (2020) makes a great definition by saying "any game that relies on 95% of its revenue from ad monetization, essentially anything that is not paid for by the gamer" (Kinniburgh, 2020) and states that it is a business model rather than a game.

In the final chapter, a group of questions will be asked to some hypercasual publishers in Turkey, for both to find an answer to our latest question and also to get important clues about the industry. Thus, we will be able to draw an important road map for those who want to enter the sector.

#### 4. GUIDELINE FOR NEW PUBLISHERS

In this last chapter, the main purpose will be to get answers from hypercasual gaming sector leaders to the prepared questions. The participants are mostly from selected Turkish companies. There are general questions as well as some technical ones. Below are the questions that are used for the interview.

##### General:

- i. What exactly makes a game hypercasual?
- ii. Why has hypercasual gaming become so popular?
- iii. What does the future hold for hypercasual games?
- iv. Why do you think people prefer playing hypercasual games?

##### Technical:

- i. How long do hypercasual games usually take to develop and make a testing-ready release?
- ii. How long will it take for an absolute beginner to create a hypercasual game considering he already has the game idea?
- iii. How can I create enough hype before releasing my hypercasual game?
- iv. Which metric is your number one priority to decide whether a game will receive a go-or-no? (Day1 Retention, CPI, ROI, etc.)

##### Close-Up:

- i. Do you think that hypercasual is really a genre or a monetization type?
- ii. Which option do you suggest to publishers: Do they need to catch the trends very quickly and publish hypercasual games constantly or publish more complex hypercasual games?
- iii. What is your favorite hypercasual game that you play on your phone?

#### 4.1 INTERVIEWS WITH THE TURKISH PUBLISHERS

Interviews are done with responsible persons from a total of 8 hypercasual game companies. 5 of those companies are from Turkey, 2 from France and 1 from England.

The participants are as follows:

- i. Coda Platform – Mr. Şefik Can Gökalp (CEO & Co-Founder)
- ii. Game Factory – Mr. Efe Küçük (Co-Founder)
- iii. Gulliver’s Games – Mr. Doğan Akdağ (CEO)
- iv. Homa Games – Ms. Susan Ya Luo (Publishing Coordinator)
- v. Lion Studios – Mr. Emre Gerçel (Business Development Lead)
- vi. Netmarble – Mr. Barış Özistek (Chairman at Netmarble EMEA)
- vii. Rollic Games – Mr. Alican Uncu (Product Director)
- viii. Voodoo.io – Mr. Corentin Selz (Publishing Manager)

In the first part of the interview, the definition, current state, and future predictions of hypercasual games are examined. By the definition of hypercasual, 2 concepts are mentioned by all participants. First of them is the broad market appeal. The game should be preferred by a *mass/broad audience*. The second is that it should be *easy to understand and learn*. Half of the participants mention that starting and playing time should be short enough, in other words snackable. Only 25% of the participants indicate that the game should be driven by ad-monetization.

There is a wider range of answers to the reason why hypercasual games are so popular. Similar to the previous question, the same answers also apply here. 50 percent of respondents attribute the popularity to the easy game structure that *appeals to everyone*. Another 50 percent signifies that the *short development cycles* also helps a lot to develop games faster, which creates more option for users. Innovativeness is an important element for 25 percent because people continue to consume rapidly in constant search for different and new things.

Lastly, 25 percent of the participants mentioned the importance of increasing profitability by reducing customer acquisition costs as a result of the optimized marketing strategies.

Finally, in predicting the future of the industry, all participants talk about *the importance of game design*. They state that in order to stay in the sector, the *innovations* made should be increased. Although hypercasual games should be simple by nature, many argue that the complexity should be increased to make a difference in the future. 50 percent of the respondents say that more sophisticated and deepened games (which can also be defined as *hybridcasual*) should be designed to achieve higher LTV. When we come to the part why people prefer and will prefer these games, we encounter some keywords with similar meanings. Those are; low-commitment entertainment, great time-killers, very fast satisfaction, stress relief, satisfaction with small goals and achievements, etc. By looking at these phrases, it is easy to say that the game preference is self-explanatory.

The second part of the interview focused on more technical issues regarding the time it takes to develop the game, some key metrics, and what it takes to create enough hype for the game to be successful in the market. We can divide the answers to the question regarding the testing-ready prototyping time, into 2 groups. For Coda, Game Factory, Rollic, and Voodoo in the first group, this period is said to be *4-5 days* on average. In particular, for Voodoo 5 days is an upper limit. On the other hand, for Gulliver's, Lion, Homa, and Netmarble, this period can be *up to 2 weeks*. Here, we see that the development cycle for Netmarble can take up to 2 months for a soft launch, which is a bit exceptional compared to other companies.

The common answer given to the question of how long it takes for someone who is completely beginner and only has a game idea is that this period depends on many factors and the most important issue is the *hard skills of the developer*. At this point, the preferred skill is *Unity* knowledge and some basic coding experience. Other factors that affect the development time are the design and content of the game and the technologies to be used during the development process. Last but not least, whether the game is made by a solo developer or a studio is a factor that greatly affects the duration.

The question about creating hype was the one with the most opposing views in the entire interview. The first group that includes Coda, Game Factory, Gulliver's, and Netmarble emphasizes the importance of *digital marketing strategies*. They add that besides advertising and promoting on 4-5 different channels such as Facebook and Google, hype can be created using the virality power of social media and with paid user acquisition. On the contrary, the second group, including Lion, Homa, Rollic, and Voodoo, states that the most important thing is the *product itself*. They believe that with good game mechanics and experience (good UI / UX design), a unique and appealing game concept, and an engaging creative video, the hype will be auto-generated. Only Homa Games expresses that, in addition to the quality of the game, topics such as app-store optimization, implementation of different monetization strategies and user acquisition are secondarily important.

In the next question, we asked which metrics are the most important in deciding whether the game would be finally released. Although the most common answer is *CPI*, each publisher has a different approach to this subject. Below listed are the styles of each:

- i. Coda: IPM (install per one thousand video views) should be around 40 and Day-0 IMPDAU (number of ads the user sees on the day they install the game) should be 10.
- ii. GameFct: It was Retention 2 years ago, but now definitely CPI.
- iii. Gulliver's: CPI comes first with an above 30% Day-1 Retention.
- iv. Homa: A combination of different metrics to get the whole picture, which are CPI, Retention, IPM, Level Win Rate, Session Length, and Playtime (Session Length\* Session Amount).
- v. Lion: CPI and Playtime for initial tests. ROAS (return on ad spend) is the ultimate KPI for release decisions.

- vi. Netmarble: Here also a combination of different metrics is used. Those are: CPI, ROI, D1 Retention, Ads Performance (Rewarded, Interstitial, Banner, etc.), Playtime, Session Count, Session Length, Organic Growth Potential.
- vii. Rollic: CPI for user acquisition, D1 Retention, and Playtime for gameplay metrics.
- viii. Voodoo: CPI, D1 and D7 Retentions.

In the close-up part, the participants were asked about their general thoughts on specific topics and their suggestions to other publishers. 37.5 percent of the answers to the question of whether hypercasual games are a genre or a monetization type state that, it is definitely a genre or even a compilation of many genres. Although another 25 percent do not say it is definitely a genre, they also agree that it is not a monetization type. Because, although these games mostly generate revenue from ads, in some examples there are also in-app purchases.

The last question was about suggestions from successful publishers to candidates or wannabes. Which strategy should be applied on the way to success; is it to launch new simple games one after another in line with the trends, or to try to make a difference with more complex and creative ideas? The idea that all participants, without exception, reached a consensus on this issue, is that it is imperative to *release new games* quickly and continuously. To survive and grow, you need to publish. The complexity may vary. Catching trends is very important for organic growth, however, if you only follow the trends without innovating you will eventually die. Increasing complexity is one way of innovation, but *finding unique ideas* by thinking out-of-the-box or trying experimental mechanics may also bring you one step ahead of others. Last of all, since this is a very fast-paced industry, it is important not to waste time on a game whose metrics aren't promising.

## 4.2 RECOMMENDATIONS FOR NEW PUBLISHERS

In this very last chapter, there will be an analysis of the answers given by interviewed publishers. Although there is a consensus on many points, there are also questions with opposite opinions. The main purpose here is to create a point of view for new publisher candidates in line with the opinions stated.

By the definition of hypercasual games, unanimity is secured for lots of words, on the other hand, it is surprising that monetization is only mentioned by a quarter of the participants. While this is arguably one of the most important features for a hypercasual game, it is clear that monetization is not one of the first things to come to mind or has less importance. The simple and appealing nature of these games is also cited as the main reason for their success today, which results in an outbreak in popularity within just a couple of years. For the future of the industry, most of the respondents emphasize the importance of game design and they say more sophisticated games will be developed. However, there also some opposite opinions which indicate the hypercasual games will always remain simple. There are different opinions here, but those are not misleading statements, because, as mentioned at the beginning, these are only predictions of the future. Last but not least, common sense for the high preference of this genre is characteristics like stress relief, low-commitment entertainment, time killers, etc. Although at first glance these features may seem worthless, it is obvious that they are what everyone is looking for.

The development process of a single game may vary from a couple of days to weeks. In general, the industry requires very fast action. One of the main reasons for this is that the games are so simple, they can be copied also very easily. Thus, it is important to make a fast and correct decision within days. Many studios utilize more than one developer to create a game, making the development process shorter. The market is much more challenging and contentious than ever, so it is extremely rare for a solo developer to create

and publish a game and succeed. One option here might be to take the game to a large studio after preparing the prototype. This takes us to another topic of creating hype.

This can be the most controversial topic for hypercasual games. Mainly, there are 2 strategies. First of which is product-oriented. This group believes that, if the game is well designed and the product is high quality, then the hype is generated automatically. There is no need to make an extra effort for it. The second group is more market-oriented and they are using the power of social media ads and virality. So, even if the product is not top quality, the hype can be created via a good digital marketing strategy. An interesting point here is that the biggest hypercasual publishers like Voodoo and Lion have massive marketing networks, but their biggest priority is the product itself.

To the question about the important metrics, the most popular answer was CPI, followed by Retention. Especially, the Day-1 retention rate is taken into account for most of the publishers. This example also shows how quickly decisions need to be taken in this industry.

Another surprising response was whether hypercasual was more of a monetization type than a genre. A lot of analysts describe this new game type as a monetization type, because of its earning model. However, more than half of the publishers do not believe this portrayal. As a matter of fact, 37.5 percent of the participants say that it is 'definitely' a genre. This shows us that in the future, not only through ads but also alternative monetization methods may be applied.

The last question was entirely about suggestions. The foremost among them is: No matter what, keep publishing! If you are a publisher, you need to publish new games consistently to float. While doing this, make systematic testing to take decisions and do not hesitate to cancel a game if the metrics are not satisfactory. Last but not least, try new ideas to be one step ahead of others, but don't forget to keep an eye on what others are doing.

## REFERENCES

### *Books*

- Bullard, E. (2018). Freemium. *Salem Press Encyclopedia*. Retrieved from <https://bproxy.bahcesehir.edu.tr/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ers&AN=109057022&lang=tr&site=eds-live>
- Csikszentmihalyi, M. (2014). Play and Intrinsic Rewards. In *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi* (pp. 135–153). [https://doi.org/10.1007/978-94-017-9088-8\\_10](https://doi.org/10.1007/978-94-017-9088-8_10)
- Dillon, R. (2016). The Golden Age of Video Games: The Birth of a Multibillion Dollar Industry. In *The Golden Age of Video Games: The Birth of a Multibillion Dollar Industry*. <https://doi.org/10.5860/choice.49-1513>
- Flodman, S., & Karlsson, F. S. (2014). *Success Factors in Profitable Mobile Games From the Perspective of Top-Earning Nordic Game Developers*.
- Hadzinsky, C. (2014). *Scholarship @ Claremont A Look into the Industry of Video Games Past, Present, and Yet to Come*. Retrieved from [http://scholarship.claremont.edu/cmc\\_theses/842](http://scholarship.claremont.edu/cmc_theses/842)
- Stenros, J. (2017). The Game Definition Game: A Review. *Games and Culture*, 12(6), 499–520. <https://doi.org/10.1177/1555412016655679>
- Suits, B. (1967). What Is a Game? *Philosophy of Science*, 34(2), 148–156. <https://doi.org/10.1086/288138>
- Wittgenstein, L. (1958). Philosophical investigations. In *Philosophical Investigations*. <https://doi.org/10.4324/9781912282036>

### *Periodicals*

Cummings, A. H. (2007). The Evolution of Game Controllers and Control Schemes and their Effect on their games. *The 17th Annual University of Southampton Multimedia Systems Conference*, 1–8. Retrieved from <http://mms.ecs.soton.ac.uk/2007/papers/6.pdf>

Ernkvist, M. (2008). Down Many Times, but Still Playing the Game : Creative Destruction and Industry Crashes in the Early Video Game Industry 1971-1986. In *Södertörn Academic Studies* (Vol. 38). Retrieved from <http://sh.diva-portal.org/smash/get/diva2:213024/FULLTEXT01.pdf>

“Gaming Monetization Report.” (2019). *Swrve 2019 Monetization Report*.

Hyper casual gaming in 2020. (2020). *Adjust*. Retrieved from <https://www.adjust.com/resources/downloads/hyper-casual-report-2020/?download=%2Fresources%2Fdownloads%2Fhyper-casual-report-2020>

OpenX. (2018). The Consumer Engagement Crossroads Report. Retrieved September 16, 2020, from <https://www.openx.com/resources/thought-leadership/optinvideo/>

### ***Other Publications***

Babalon. (2020). Top 6 Most Popular MMORPGs Sorted by Population (2020) | Altar of Gaming. Retrieved March 28, 2020, from <https://altarofgaming.com/all-mmos-sorted-by-population-2018/>

Carlson, R. (2009). Top 10 adventure games of all time. Retrieved March 15, 2020, from Adventure Classic Gaming website: <https://www.usgamer.net/articles/top-10-biggest-grossing-arcade-games-of-all-time>

Carpenter, N. (2019). “Clash Royale” Surpassed \$2.5 Billion In Revenue In Its Three Years Since Launch. Retrieved April 13, 2020, from Forbes website: <https://www.forbes.com/sites/nicolecarpenter/2019/03/05/clash-royale-surpassed-2-5-billion-in-revenue-in-its-three-years-since-launch/#72017fd642f0>

Cheema, S. (2019). A whopping 9.2 million people play “Candy Crush” for 3 hours daily - Entertainment. Retrieved April 5, 2020, from Mashable website: <https://sea.mashable.com/entertainment/4647/a-whopping-92-million-people-play-candy-crush-for-3-hours-daily>

Clark, B. (2015). *How to Use the “ Rule of Three ” to Create Engaging Content*. 1–14. Retrieved from <https://copyblogger.com/rule-of-three/>

Crecente, B. (2018). ‘Candy Crush Saga’ Earned Just Under \$1B in Past 12 Months (Analyst). Retrieved April 5, 2020, from Variety website: <https://variety.com/2018/gaming/news/candy-crush-saga-1-billion-1202908004/>

Desaulniers, T. (2016). How to launch an effective cost-per-install app campaign. Retrieved October 18, 2020, from Mobile Marketer website: <https://www.mobilemarketer.com/ex/mobilemarketer/cms/opinion/columns/23614.html>

- Fishback, G. (2020). Hyper-Casual Games: What Advertisers Need to Know About This Growing Opportunity. Retrieved September 15, 2020, from MarTech Advisor website: <https://www.martechadvisor.com/articles/ads/hypercasual-games-what-advertisers-need-to-know-about-this-growing-opportunity/#>
- Forde, M. (2019). Top 25% mobile games have average Day 28 retention of 4%. Retrieved June 20, 2020, from Pocket Gamer website: <https://www.pocketgamer.biz/news/71599/gameanalytics-top-25-mobile-games-average-day-28-retention-4/>
- Fried, D. (2016). This Is The Formula For Creating An Insanely Successful Mobile Game. Retrieved May 2, 2020, from Forbes website: <https://www.forbes.com/sites/quora/2016/07/07/this-is-the-formula-for-creating-an-insanely-successful-mobile-game/#6e81794a1163>
- Gaille, B. (2017). 27 Surprising Customer Loyalty Statistics. Retrieved June 20, 2020, from BrandonGaille.com website: <https://brandongaille.com/25-surprising-customer-loyalty-statistics/>
- Handrahan, M. (2018). After 5 billion organic downloads, where now for Outfit7? | GamesIndustry.biz. Retrieved April 18, 2020, from gamesindustry.biz website: <https://www.gamesindustry.biz/articles/2018-01-08-after-5-billion-organic-downloads-where-now-for-outfit7>
- Herriger, N. (2019). How to crack IAP for Hyper Casual. Retrieved October 19, 2020, from Gondola website: <https://gondola.io/blog/2019-03-27-how-to-crack-iap-for-hyper-casual.html>
- Heuristic. (2019). The first-ever game sold on iOS is back on iPhones. Retrieved April 1, 2020, from Times of India website: <https://timesofindia.indiatimes.com/gadgets-news/the-first-ever-game-sold-on-ios-is-back-on-iphones/articleshow/70144273.cms>

- Holt, C. (2014). Behind the success of Temple Run. Retrieved April 2, 2020, from Mac World website: <https://www.macworld.com/article/2361426/behind-the-success-of-temple-run.html>
- Hreninciuc, I. (2018). Monetizing Hyper-Casual Games. Retrieved September 8, 2020, from GameAnalytics website: <https://gameanalytics.com/blog/monetizing-hyper-casual-games.html>
- Iqbal, M. (2019). Pokémon GO Revenue and Usage Statistics (2019) - Business of Apps. Retrieved April 24, 2020, from Business of Apps website: <https://www.businessofapps.com/data/pokemon-go-statistics/>
- Karnes, K. (2020). Hyper-Casual Games: Mobile Gaming's Greatest Genre. Retrieved June 12, 2020, from CleverTap website: <https://clevertap.com/blog/hyper-casual-games/#animated-infographic>
- Kinniburgh, T. (2020). Deconstructing the State of the Hyper-Casual Market in 2020. Retrieved October 21, 2020, from GameAnalytics website: <https://gameanalytics.com/blog/deconstructing-state-hyper-casual-market-2020.html>
- Knezovic, A. (2020). Mobile Game Monetization Trends: Best Strategies to Monetize Your Game in 2020. Retrieved August 13, 2020, from Medium website: <https://medium.com/udonis/mobile-game-monetization-trends-best-strategies-to-monetize-your-game-in-2020-fe2de42d4463>
- MediaBrix. (2016). New Neuroscience Study Shows How Mobile Users Actually Respond to In-App Ads. Retrieved September 15, 2020, from PR Newswire website: <https://www.prnewswire.com/news-releases/new-neuroscience-study-shows-how-mobile-users-actually-respond-to-in-app-ads-300334644.html#continue-jump>

- MINOTTI, M. (2014). Here's who won each console war. Retrieved March 22, 2020, from <https://venturebeat.com/2014/08/20/heres-who-won-each-console-war/>
- Molina, B. (2016). "Pokemon Go" fastest mobile game to 10M downloads. Retrieved April 24, 2020, from <https://www.usatoday.com/story/tech/gaming/2016/07/20/pokemon-go-fastest-mobile-game-10m-downloads/87338366/>
- Newman, H. (2015). Talking Tom hits 3 billion downloads worldwide | VentureBeat. Retrieved April 18, 2020, from Venture Beat website: <https://venturebeat.com/2015/10/13/talking-tom-hits-3-billion-downloads-worldwide/>
- Newswire, P. R. (2019, December 19). Subway Surfers is the Most Downloaded Mobile Game of the Decade. *SYBO-SubwaySurfers*. Retrieved from <https://bproxy.bahcesehir.edu.tr/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bwh&AN=201912191317PR.NEWS.USPR.NY73119&lang=tr&site=eds-live>
- Osborne, D. (2005). Nokia admits N-Gage is a failure - Geek.com. Retrieved April 1, 2020, from <https://www.geek.com/games/nokia-admits-n-gage-is-a-failure-560162/>
- Patel, V. (2018). Mobile App Growth Study: Why The Angry Birds Are So Popular? Retrieved March 29, 2020, from <https://blog.getsocial.im/mobile-app-growth-study-why-the-angry-birds-are-so-popular/>
- Purchase, R. (2011). Angry Birds downloaded 500 million times. Retrieved April 1, 2020, from Eurogamer website: <https://www.eurogamer.net/articles/2011-11-03-angry-birds-downloaded-500-million-times>
- Quân, C. (2014). Truyền thông Pháp nghi ngờ tác giả Flappy Bird đạo ý tưởng. Retrieved April 18, 2020, from Soha website: <https://soha.vn/quoc-te/truyen-thong-phap-nghi-ngo-tac-gia-flappy-bird-dao-y-tuong-20140208140155266.htm>

- Revell, T. (2017). Did Pokémon Go really kill 250 people in traffic accidents? Retrieved April 24, 2020, from News Scientist website: <https://www.newscientist.com/article/2154881-did-pokemon-go-really-kill-250-people-in-traffic-accidents/>
- Richter, F. (n.d.). • Chart: PlayStation 2 Is the Best-Selling Console of All Time | Statista. Retrieved March 22, 2020, from <https://www.statista.com/chart/18903/video-game-console-sales/>
- Salvina, J. (2018). The Six Factors of a Successful Mobile Game. Retrieved May 1, 2020, from TGDaily website: <https://www.tgdaily.com/entertainment/games/the-six-factors-of-a-successful-mobile-game/>
- Sarwar, N. (2019). PUBG Mobile to Get Upgraded Anti-Cheat System That Targets Hackers Without Collateral Effects | Technology News. Retrieved April 27, 2020, from Gadgets 360 website: <https://gadgets.ndtv.com/games/news/pubg-mobile-hack-anti-cheat-system-announcement-2124042>
- Serrels, M. (2016). Fruit Ninja's Creators Have Been Split By An Identity Crisis. Retrieved April 2, 2020, from Kotaku website: <https://kotaku.com/fruit-ninjas-creators-have-been-split-by-an-identity-cr-1788685803>
- Smith, D. (2014). This is what Candy Crush Saga does to your brain | Science. Retrieved April 5, 2020, from The Guardian website: <https://www.theguardian.com/science/blog/2014/apr/01/candy-crush-saga-app-brain>
- Smith, K. (2015). The Golden Age Arcade Historian: The Ultimate (So-Far) History of Gremlin Industries Part 2. Retrieved March 29, 2020, from The Golden Age Arcade Historian website: [http://allincolorforaquarter.blogspot.com/2015/09/the-ultimate-so-far-history-of-gremlin\\_25.html](http://allincolorforaquarter.blogspot.com/2015/09/the-ultimate-so-far-history-of-gremlin_25.html)

- Smithsonian Institution. (2017). Video Game History. Retrieved March 22, 2020, from National Museum of American History website:  
<https://www.history.com/topics/inventions/history-of-video-games>
- Spence, E. (2014). The Vital And Depressing Lessons Flappy Bird Can Teach Indie Developers. Retrieved April 18, 2020, from Forbes website:  
<https://www.forbes.com/sites/ewanspence/2014/02/18/the-vital-and-depressing-lessons-flappy-bird-can-teach-indie-developers/#5c25ba133792>
- Takahashi, D. (2011). Zynga's CityVille becomes the biggest-ever app on Facebook | VentureBeat. Retrieved March 28, 2020, from  
<https://venturebeat.com/2011/01/03/zyngas-cityville-becomes-the-biggest-ever-app-on-facebook/>
- Taylor, H. (2019). PUBG becomes first mobile battle royale to surpass \$1bn revenue. Retrieved April 26, 2020, from GamesIndustry.biz website:  
<https://www.gamesindustry.biz/articles/2019-09-23-pubg-becomes-first-mobile-battle-royale-to-surpass-usd1bn-revenue>
- Thler, D. (2016). "Pokemon GO" Servers Down For Many. Retrieved April 24, 2020, from Forbes website:  
<https://www.forbes.com/sites/davidthier/2016/07/07/pokemon-go-servers-seem-to-be-struggling/#3c79026c61e9>
- Totilo, S. (2014). The Flappy Bird fiasco. Retrieved April 18, 2020, from Kotaku website: <https://kotaku.com/the-flappy-bird-fiasco-1519938266>
- Truong, A. (2014). Temple Run Series Hits One Billion Downloads. *Fast Company*. Retrieved from <https://www.fastcompany.com/3031474/temple-run-series-hits-1-billion-downloads>

- Valentine, R. (2019). Subway Surfers is the top mobile game of the decade by downloads | GamesIndustry.biz. Retrieved April 13, 2020, from gamesindustry.biz website: <https://www.gamesindustry.biz/articles/2019-12-16-subway-surfers-is-the-top-mobile-game-of-the-decade-by-downloads>
- Welsh, O. (2017). A Complete History of Nintendo Console Launches. Retrieved March 18, 2020, from Eurogamer website: <https://www.eurogamer.net/articles/2017-02-24-a-complete-history-of-nintendo-console-launches>
- Wijman, T. (2020). The World's 2.7 Billion Gamers Will Spend \$159.3 Billion on Games in 2020; The Market Will Surpass \$200 Billion by 2023. Retrieved June 14, 2020, from Newzoo website: <https://newzoo.com/insights/articles/newzoo-games-market-numbers-revenues-and-audience-2020-2023/>
- Wright, C. (2016). A Brief History of Mobile Games: In the beginning, there was Snake | Pocket Gamer.biz | PGbiz. Retrieved March 29, 2020, from pocketgamer.biz website: <https://www.pocketgamer.biz/feature/10619/a-brief-history-of-mobile-games-in-the-beginning-there-was-snake/>
- Yakubenkov, O. (2020). Why N Day Retention is the Metric that Matters for Mobile Games. Retrieved June 20, 2020, from Amplitude website: <https://amplitude.com/blog/n-day-retention-for-mobile-games>