

# ANALYSIS OF VIRTUAL AND AUGMENTED REALITY'S IMPACT ON THE EMERGING eSPORTS MARKET

## Summary

This article explores the impact of immersive technologies like virtual and augmented reality on video game competitions. These electronic games are structured under an analog scheme similar to that of the sports industry, which has given rise to a new and rapidly growing global market known as “*eSports*.”

eSports are a confluence of innovation, strategy, and marketing, in which players, or *gamers*, come together and compete with the same intensity and commitment as professional athletes. *Gamers* participate in local, national, and worldwide competitions that are broadcast over a variety of media, and are sponsored by large transnational companies/brands. For these companies, the eSports phenomenon represents a new paradigm capable of revolutionizing the very concept of entertainment.

In this article, we propose a conceptual framework through which we can analyze the business repercussions of this new technology from an integral perspective that takes into account players, sports clubs, publishers, sponsors (brands), spectators and broadcasters. Through this analysis of representative companies from the eSports sector, we explore their evolution and future tendencies.

This project seeks to stimulate further research into the profound technological transformation the entertainment sector is now undergoing with the digitalization and implementation of immersive technologies. Special attention will be paid to the institutionalization and professionalization of video game competitions and their progressive homologation with traditional sports.

## Key words:

ESports, Entertainment, Videogames, Virtual-Reality (VR), Augmented-Reality (AR)

## Classification:

Innovation, Strategy, Marketing, Electronic Sports, Digital Transformation.

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## Introduction to the Network Society

The development and penetration of Internet connectivity among global users – be it using a computer, tablet, or smartphone – has given rise to a new era that CASTELLS has called the Network Society.

This new society utilizes Information and Communication Technologies (CITs) to transform the social and economic environment and generate a wave of profound technical innovation. This transformation has led to use of technological media in both professional and domestic settings, being exploited as mass social communication media as well as tools for improving productivity and competitiveness.

Adoption of these technologies linked to software, hardware, and internet, has also brought about dramatic change in throughout the entertainment industry, ranging from music to television, and eventually to videogames – 1998 saw the introduction of network play, or online multiplayer functions, which according to LAFRANCE, triggered the proliferation of online competition between players from all over the world.

The popularization of online gaming in recent years has transcended traditional concepts of entertainment and introduced a new cultural dimension that fosters communities of players, teams, and supporters that are brought together by highly competitive digital tournaments. The success of these tournaments has not gone unnoticed by large transnational companies, which have begun to show great interest in organizing, sponsoring, and broadcasting these events.

According to SuperData's annual report, interactive entertainment, which includes videogames, generated 108 billion USD in 2017.<sup>1</sup> This underscores the rapid emergence of *eSports*, which turns digital tournaments into social phenomena that create a sense of belonging among millions of people throughout the world, and is now a strategic market with a value of nearly 1 billion USD.

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<sup>1</sup> *SuperData Digital Games and Interactive Media Year in Review—2017* (SuperData, 2018).

**Table 1. Best-selling Videogames of 2017 Worldwide**

<b>Ranking</b>	<b>Title</b>	<b>Publisher</b>	<b>Revenue</b>
1	Grand Theft Auto V	Rockstar Games	\$521M
2	Call of Duty: WWII	Activision	\$502M
3	FIFA 17	EA Sports	\$409M
4	Destiny 2	Activision	\$329M
5	FIFA 18	EA Sports	\$324M
6	Battlefield 1	EA Games	\$301M
7	Call of Duty: Black Ops III	Activision	\$248M
8	Tom Clancy's Ghost Recon: Wildlands	Ubisoft	\$221M
9	Call of Duty: Infinite Warfare	Activision	\$201M
10	Tom Clancy's Rainbow Six: Siege S	Ubisoft	\$172M

Source: *SuperData Digital Games and Interactive Media Year in Review, 2017*

## **Methodology**

The methodology employed in this study is descriptive-qualitative. First, it proposes a conceptual framework that classifies the main actors, the ways of participating in a competition, the milestones for growth in the eSports market, and its social and economic reach. Then it will analyze the uses and applications virtual and augmented reality could have in the eSports industry using concrete examples for both technologies – for this, we have selected cases studies of companies operating in the eSports sector. Finally, the study concludes by presenting a hypothetical future in which we believe the combination of spectacle and immersive experience will detonate the future success of the eSports ecosystem.

The conceptual framework focuses on reviewing and updating the context around eSports, and in predicting the impact of a future scenario in which this phenomenon is combined with immersive technologies such as virtual reality and augmented reality.

Later, the methodology used multiple case studies from a descriptive-qualitative perspective. These case studies allow us to analyze companies and specific technological developments, whose results are certain only in those cases in particular. Through this methodological process we will obtain a more complete perception of the market by studying it as a holistic entity, whose attributes are only understood in the context of all of its factors. To achieve this, we must study the industry as a whole.

For this purpose, we present descriptions, interpretations and proposals of change oriented to produce a theoretical contribution of inductive order that allows to explain complex causal

relations, analyze longitudinal processes of change, generate theories from the study of the factors that influence the behaviors of the actors and to understand the repercussions of the economic and social context in which this phenomenon emerges.

Among the questions that we seek to explore in this research are:

- Who are the main actors in the industry and how are they related?
- What are the forms of participation in a competition of this nature?
- What have been the milestones in the growth of this market and what is its current economic and social scope?
- What are the uses and applications that virtual reality and augmented reality could have in this area?
- What business precedents exist for both technologies in this market?
- What could be the hypothetical results of a successful combination of virtual reality and augmented reality?

Together with the above questions, three theories will be raised on how e-Sports could evolve to achieve significant and long-term growth under criteria of inclusion, sustainability and profitability:

- I. To adapt the business model of the industry to increase the levels of professionalism and competitiveness through adding flexibility to the role currently played by publishers.
- II. To grow the specular that provides the entertainment to promote an ecosystem of startups focused on the permanent innovation of the gaming experience.
- III. To evolve the current structure of the industry to facilitate the introduction of new, plural and heterogeneous actors that could expand E-Sports to other business categories.

These theories will be detailed as complementary recommendations by the authors to channel the growth and expansion of this phenomenon. For this research's initial approach, we offer a first hypothesis about what eSports should do:

- Become more spectacular to attract a wider and more diverse set of actors.
- Evolve the business model, altering the current structure to facilitate introduction of virtual and augmented reality.

## Conceptual Framework

### The eSports Phenomenon

The term eSports (also known as *competitive gaming*, *organized play*, *e-gaming* or *pro-gaming*) is a contraction that combines the words *electronic* and *sports*. This compound word describes the world of competitive and organized gaming in the language of conventional sport – one made up of players and teams competing against one another in well-known videogames, and followed by millions of fans around the world that watch events in person or through online streams and broadcasts. HAMIRI describes eSports as:

*“A form of sport where the main aspects of the sports are facilitated by electronic systems; the input from players and teams, as well as the output of eSports systems is mediated by man-machine interfaces.”*

Wagner (2006) emphasizes the competitive nature of eSports, as they are:

*“An area of sports activities where participants develop and train mental and physical capacities using CIT.”*

It is worth noting that not all videogames can be considered electronic sports, as they must meet a series of specific conditions:<sup>2</sup>

- a) The game makes possible a direct competition between two or more participants.
- b) Players compete on an even playing field, with victory determined by the skill and dexterity of the competitors.
- c) There are leagues, tournaments, and official competitions with professional players and teams that participate under formal rules.
- d) It is a popular competition with an ample group of players, and there is interest from traditional and alternative media in broadcasting the event.
- e) It involves physical and mental preparation, and promotes the values of sportsmanship and personal improvement.

Among the most important videogames that comply with the above requirements are those involving roleplaying, shooter scenarios, cards, and sports simulations. The following table presents the most recognized eSports games.

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<sup>2</sup> From Juan Casanova’s description in *¿Qué son los deportes electrónicos?* (AS, 06/04/2018) as well as Bárbara Gimeno’s *¿Qué requisitos debe cumplir un videojuego para ser un e-Sport?* (eSports unlocked, 15/01/2018, <https://www.esportsunlocked.com/especiales/que-hace-falta-para-que-un-juego-sea-esports>)

**Table 2. Most recognized videogames in the eSports ecosystem**

<b>Launch</b>	<b>Title</b>	<b>Publisher</b>	<b>Category</b>
1993	FIFA	EA Sports	Soccer
2001	Pro Evolution Soccer	Konami	Soccer
2009	League of Legends	Riot Games	Multiplayer Online Battle Arena (MOBA)
2012	Counter-Strike: Global Offensive	Valve Corporation	First-Person Shooter (FPS)
2013	D.O.T.A. 2	Valve Corporation	Multiplayer Online Battle Arena (MOBA)
2014	Hearthstone: Heroes of Warcraft	Blizzard Entertainment	Online Collectible Card
2016	Overwatch	Blizzard Entertainment	First-Person Shooter (FPS)
2017	Fortnite	Epic Games	Battle Royale

Source: Developed by the authors

In this market's value chain we find a group of actors that generate synergies and give purpose to the functioning of the eSports ecosystem. Below we offer a brief description of each of the principal actors:

**Players:** There are at least three relevant categories of gamers in the context of eSports, according to their behavior and level of play:

- **Casual:** This describes the vast majority of players and the main audience of eSports tournaments. They are sufficiently enthusiastic to be deeply interested in eSports, yet they lack the dedication or ability to compete in organized tournaments.
- **Streamers / Entertainers:** These are high-performance gamers that focus on the social aspect of eSports, and often have their own channels on various streaming platforms through which to reach their audiences. Although they typically have a much higher skill level than casual players, their main goal is not to compete in formal tournaments, but to provide entertainment. This means that many streamers perform in-game maneuvers that are not ideal from a purely tactical standpoint, but that are flashier and aimed at entertaining their followers.

Streamers generate revenue according to the size of their audiences, making use of the monetization tools they provide (advertising, subscriptions, donations, etc.). They also

generate revenue from direct sponsorships, as they are generally *influencers* with strong personal brands that are attractive to teams, sponsors, and followers.

- **Professionals:** These are gamers that participate in formal tournaments. Much like streamers, they are *influencers*. Their focus is solely on competitive gaming, leaving aside flashy maneuvers in favor of tactical effectiveness. The main source of income for this group comes from prize money earned in tournaments, followed by direct (to individuals) and indirect (given to the teams they play for) sponsorships. One such gamer is the South Korean Lee Sang Hyeok (alias "Faker"), who is not only the most recognized and formidable *League of Legends* player, but the most accomplished gamer in the history of eSports.

Interaction between streamers and professionals categories is constant and fluid: many professionals begin their careers as streamers, until professional teams discover them. It is also common for professionals to also act as streamers outside of the bounds of formal tournaments, although this duality is not present always, and when it is, they typically occur in separate and distinct moments.

**Sports clubs:** Much like conventional sports, eSports features clubs that have teams competing in organized games. These clubs are always on the lookout for new gamers, as well as ways to generate interest among spectators and sponsors. One successful example is the U.S. club *FaZe Clan*, which competes in games like *Call of Duty*, *Counter-Strike: Global Offensive*, *Overwatch*, *PlayerUnknown's Battlegrounds*, *Tom Clancy's Rainbow Six: Siege* and *FIFA*, as well as other teams that are forging their own reputations like *Team Solo-Mid* (TSM). There are also existing major traditional sports clubs that are opening their own eSports divisions, like soccer clubs FC Barcelona, PSG, Borussia Dortmund, AS Monaco, and Schalke 04.

**Publishers:** A notable distinction between *eSports* and traditional sports is the way ownership over the sports product itself is structured. In traditional sports, the game's rules do not have an owner as such. In the case of *eSports* there is an exclusive title-holder for the game, both its internal (actions, fields, norms, etc.) and external elements (organization, officiating...). The company with exclusive title to a game is called the *Publisher*, organizer or developer. Among the most important publishers are: Riot Games, Activision, Blizzard, Epic Games, EA Sports, Ubisoft, Capcom, Valve, and Hi-Rez Studios.

**Sponsors:** There are two types of sponsors in eSports: endemic and non-endemic. The first are brands with a direct relationship to gaming (game and hardware developers, and internet operators), while the second group is made up of companies from all industries that are interested in the target audience.

An example of an endemic sponsorship would be the partnership between Dell and *Team Liquid* – one of the best gaming teams in the world – in outfitting an 8,000 square foot building in Los Angeles called the *Alienware eSports Training Facility*. The facility features gym equipment, administrators, private chefs, sports psychologists, nutritionists, and of course dozens of high-performance computers.<sup>3</sup> An example of a non-endemic sponsorship would be the *Virtual LaLiga eSports*, a FIFA 18 competition in Spain.

**Broadcasters:** In recent years, eSports have become a social phenomenon boosted by networks like the BBC, OSN, SporTV, and Super Channel, as well as online streaming platforms like *Twitch* and *YouTube*. This content is most popular among the *millennial* generation, and particularly among young males. In 2018, it is expected that 380 million people around the world will consume some eSports content, a 13.5 percent increase over 2017.<sup>4</sup>

The role of streaming platforms goes beyond simple diffusion by making the life of a streamer economically viable, as they can create revenue using the monetization tools available through these platforms. *Twitch* in particular has stood out thanks to the introduction of *Cheers*, *subscriptions*, and integration with *Amazon Prime*.

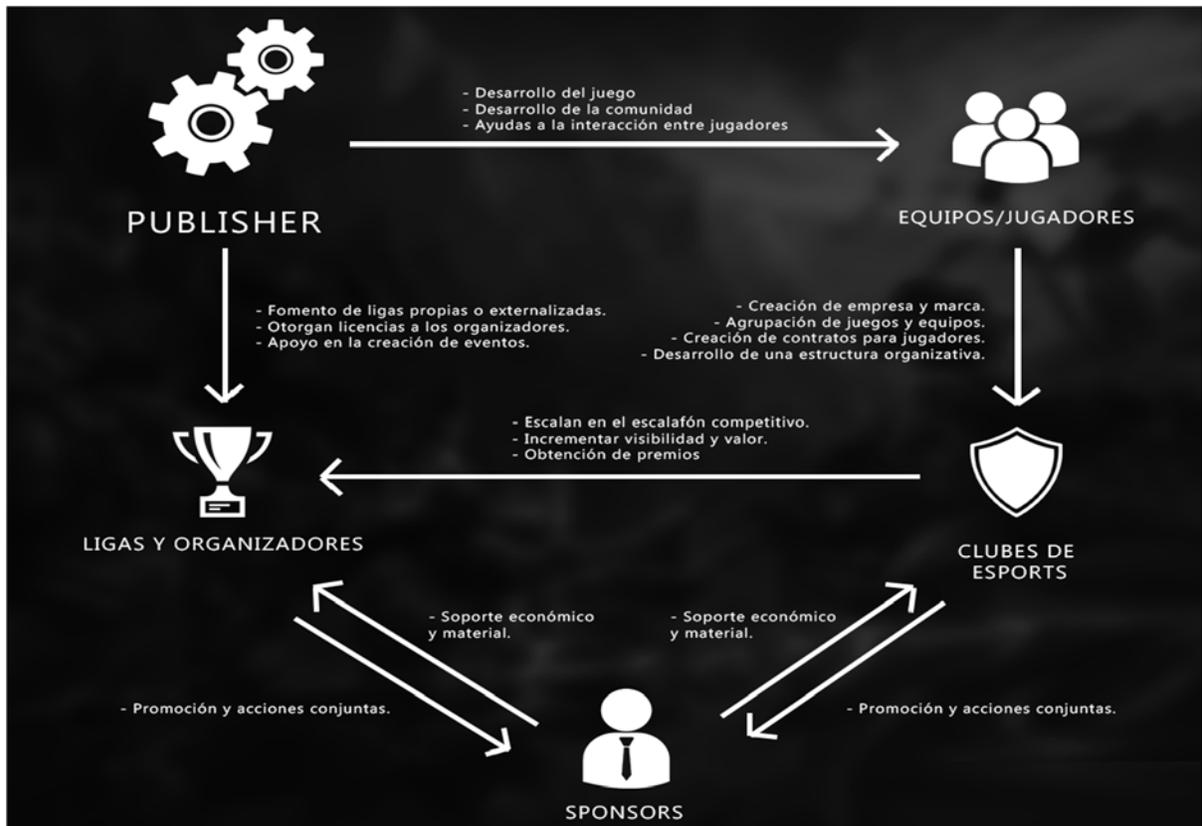
**Spectators:** These are the millions of people that watch tournaments and competitions via conventional media or online. ESports have attracted a considerable following in the U.S., China, and South Korea, where gamers and clubs are gaining more attention through the work of broadcasters.

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<sup>3</sup> *Esports get serious: Alienware, top team partner on training sites* (CNET.com, January 9, 2018, <https://www.cnet.com/news/esports-alienware-team-liquid-partner-on-training-sites>).

<sup>4</sup> Data provided by Curt Marvis, former president of digital media at Lionsgate: *ESports moves up a league* (Sportcal, July 5, 2018, <https://www.sportcal.com/Insight/Opinion/119911>).

**Figure 1. eSports Value Chain**



Source: eSports Marketing Lab

Tournaments are organized differently depending on the publisher, organizer, or developer. To understand the functional methodology we can look to the system<sup>5</sup> employed by the Electronic Sports League (ESL), which defines three levels of competition:

### **Level 1: Open Cups**

These are weekly, independent competitions through which players earn points. Accumulated points give players the option at the end of each month to collect a prize (not necessarily monetary). These competitions are not broadcast and are only available online.

### **Level 2: ESL Major**

These are weekly online competitions that are broadcast. There are also points gained for each cup won, and a weekly ranking is established. In some cases money prizes are awarded.

<sup>5</sup> Information obtained from the ESL website (<https://www.eslgaming.com>)

### **Level 3: ESL Pro**

These are professional competitions presented in two formats:

**League:** This is a regular 8-team league from which 6 teams qualify for playoffs. The bottom two teams play a “*Relegation Phase*” against the top two teams of the second division for their spots in the first division. All games are broadcast and playoff competitions are played face-to-face.

**Classic:** This is a previous qualification tournament where the best 8 compete in the final phase. All games are broadcast and the finals are played face-to-face.

### **Origen and Evolution of the eSports Industry**

It is difficult to establish a specific moment in which eSports were born, but according to HILTSCHER AND SCHÖLZ, that moment was October 19, 1972 in California and involved the game *Spacewar!* That year, Stanford University students were invited to the “Intergalactic Spacewar Olympics,” where they would face off to win a subscription to *Rolling Stone* magazine.

In 1980, Atari organized the *Space Invaders Championship* in New York City for more than 4,000 participants.<sup>6</sup> This was the first event to attract a sizable, heterogeneous group of players with the purpose of competing in an established tournament with formal rules.

In the 1990s, Nintendo organized a number of events like the *Nintendo World Championship* and *Nintendo PowerFest*, with small competitions in a number of cities across the U.S. and Canada, the winners of which would compete in a national tournament. Around that same time, *Blizzard Entertainment* (Videogame Company and creator of *StarCraft*) began organizing tournaments among enthusiasts in South Korea, taking advantage of the *PC Bangs* (cybercafés) as meeting points. From this effort sprung numerous teams and online competitions.

The real boom in this market occurred in 1997 with the creation of the *Cyberathlete Professional League* (CPL), which was the first organization dedicated solely to developing eSports tournaments. This was followed by the German-based *Electronic Sports League* (ESL), which soon became the largest eSports organizer and producer in the world.

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<sup>6</sup> Sources differ on the number of attendees at this event. Some claim 10,000 attended, while others cite 4,000. We are inclined to cite the 4,000 figure as it comes from a reputable source printed nearer the date of the event in question: *4,000 line up to join battle against electronic invader*, New York Times (June 30, 1981, <https://www.nytimes.com/1981/06/30/nyregion/4000-line-up-to-join-battle-against-electronic-invader.html>).

The industry's rise did not go unnoticed by large corporations. For example, in 2015 Swedish entertainment company Modern Times Group (MTG) acquired ESL for 78 million euro (86.3 million USD), by which it obtained a majority stake of 74%.<sup>7</sup> In 2016, Spanish communications group Mediapro, paid 4.6 million euro for a majority stake in Fandroid, owner of the Liga de Videojuegos Profesional (LVP), a hugely popular competition in Europe.<sup>8</sup>

Another milestone occurred in Asia in the year 2000 with the creation of the eSports organization *World Cyber Games* (WCG). Sponsored by Samsung and the South Korean Ministry of Culture, Sport, and Tourism, WGC was meant to be an annual international tournament, and its creation sparked widespread interest in eSports throughout all of Asia. This new popularity became evident when on November 18, 2003, the General Administration of Sport in China formally approved eSports as sport number 99 in their official sports program for the People's Republic of China.

Implicit recognition of eSports as a sport occurred in the U.S. in 2013, when Canadian Danny Le (known as "Shiphtur") became the first professional *League of Legends* gamer to receive a U.S. P-1A visa, reserved for internationally recognized athletes.<sup>9</sup> The meteoric rise of eSports attracted the attention of large traditional sports teams, which led to the creation of the *NBA 2K eSports League* (a professional videogame league in which 17 NBA franchises participate)<sup>10</sup> in 2017.

On February 27, 2018, FC Barcelona signed an agreement with eFootball.Pro and KONAMI to participate in the first edition of the *eFootball.Pro League* along with other major European soccer clubs like AS Monaco and FC Schalke 04<sup>11</sup>.

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<sup>7</sup> *La televisión apuesta por los eSports: Modern Times Group compra la liga de videojuegos ESL por 78 millones* (elEconomista.es, June 2, 2015, <http://www.economista.es/tecnologia-videojuegos/noticias/6839711/07/15/La-television-apuesta-por-los-eSports-Modern-Times-Group-compra-la-liga-ESL-por-78-millones.html>).

<sup>8</sup> *Mediapro apuesta por los eSports: compra la LVP por 4,6 millones y crea la mayor liga europea* (elEconomista.es, October 6, 2016, <http://www.economista.es/negocio-digital/noticias/7874937/10/16/Mediapro-apuesta-por-los-eSports-se-alia-con-Fandroid-para-crear-la-mayor-liga-europea.html>).

<sup>9</sup> *Online game League of Legends star gets U.S. visa as pro athlete* (Los Angeles Times, August 7, 2013, <http://articles.latimes.com/2013/aug/07/business/la-fi-online-gamers-20130808>).

<sup>10</sup> Participating franchises were: Boston Celtics, Cleveland Cavaliers, Dallas Mavericks, Detroit Pistons, Golden State Warriors, Indiana Pacers, Memphis Grizzlies, Miami Heat, Milwaukee Bucks, New York Knicks, Orlando Magic, Philadelphia 76ers, Portland Trail Blazers, Sacramento Kings, Toronto Raptors, Utah Jazz and Washington Wizards. In its first edition the En Los Angeles Lakers, Los Angeles Clippers, and the Chicago Bulls did not participate. *La NBA 2K e-Sports League: 17 equipos del mejor baloncesto* (Marca, August 9, 2017, <https://esports.marca.com/mas-esports/nba-2k-esports-league.html>).

<sup>11</sup> Statement from F.C. Barcelona Vice-President of Marketing and Communication, Manuel Arroyo: *"Barça is attentive to what is happening in this global and technological world, and given the major penetration and growth of eSports, is on the path to also becoming a leader in this field. FC Barcelona, in keeping with its innovative spirit, has decided to participate in a pioneering competition in the world of*

The clamor generated by eSports has spawned discussion in many sectors about their inclusion as an Olympic sport. At the Olympic Esports Forum held in July of 2018 in Lausanne Switzerland, members of the International Olympic Committee (IOC) and the Global Association of International Sports Federations (GAISF) announced the creation of a special eSports group. IOC delegates showed interest in approaching this market, but underscored that there is still no unanimous decision about their inclusion – the gratuitous violence of some videogames was a particular sticking point for some members.

Whether or not eSports are included in the Olympic Games, the mere creation of a special group under the auspices of the IOC provides global legitimacy and suggests a bright future for this young movement. Exhibit 1 presents a list of milestones in the formalization of eSports in various countries.

### **2.3. Territorial Reach, Economic Dimensions, and New Consumption Patterns**

According to Newzoo consultancy, 588 large eSports events took place in 2017 and generated \$59 million USD in ticket sales.<sup>12</sup> \$5.5 million USD alone was generated during the *League of Legends* World Championship, which attracted more than 80 million viewers worldwide.<sup>13</sup> Newzoo also predicts that eSports revenues will reach \$906 million USD in 2018, and \$1.6 billion USD by 2021.

This market has become very lucrative, not only for gamers, but also for videogame producers and brands. Unlike traditional athletes, gamers can generate considerable income in a short amount of time, given that large tournaments give out millions of dollars in prize money that is usually divided among the players on a winning team. The teams and the producers see a share of ticket sales, merchandising, and television and advertising rights.

Epic Games' *Fortnite* 2018 World Cup is expected to break records, as it already has more than 125 million registered players and a purse of \$100 million USD.<sup>14</sup>

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*eSports, alongside the finest partners, KONAMI and eFootball.Pro. We are sure that this competition will continue to make Barça members and fans that follow eSports around the world very proud."*

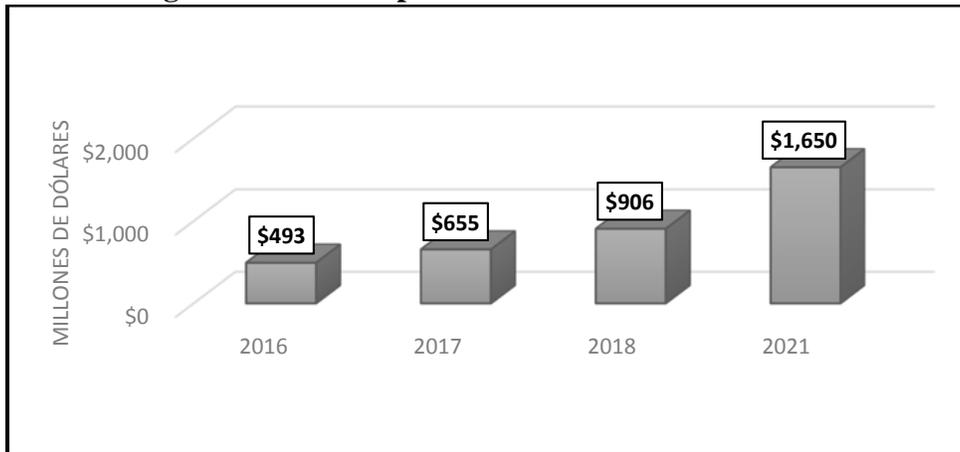
(Official F.C.Barcelona Announcement, February 27, 2018, <https://www.efe.com/efe/espana/en-detalle/el-barcelona-se-adentra-en-los-esports-de-la-mano-gerard-pique/50000571-3541552>).

<sup>12</sup> 2018 Global Esports Market Report (Newzoo, marzo 2018).

<sup>13</sup> Information taken from League of Legends website, property of Riot Games ([https://www.lolesports.com/en\\_US/articles/2017-events-by-the-numbers](https://www.lolesports.com/en_US/articles/2017-events-by-the-numbers)) and the article *What is eSports? A look at an explosive billion-dollar industry* (CNN, August 27, 2018, <https://edition.cnn.com/2018/08/27/us/esports-what-is-video-game-professional-league-madden-trnd/index.html>).

<sup>14</sup> *Fortnite now boasts 125 million users - teases \$100 million Fortnite World Cup* (TechRadar, June 13, 2018, <https://www.techradar.com/news/fortnite-now-boasts-125-million-users-teases-dollar100-million-fortnite-world-cup>).

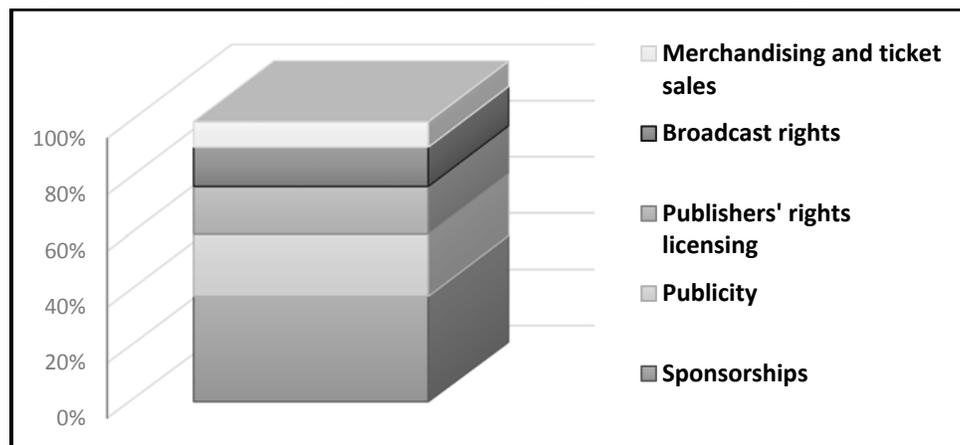
**Figure 2. Global eSports Revenue Growth Estimates**



Source: 2018 Global Esports Market Report by Newzoo

The exponential growth of the eSports market is sustained by the intense interest shown by sponsors. More than 600 sponsorship agreements have been signed worldwide since the beginning of 2016, the majority by brands within the sector, such as technology, software, or CITs (360). Brands outside the sector – like retail (100), non-alcoholic beverages (more than 50), and online services (more than 40) – also had significant presence.<sup>15</sup> A breakdown of growth in eSports by category for 2017 can be found in Figure 3.

**Figure 3. Distribution by Revenue Category for Global eSports in 2017**

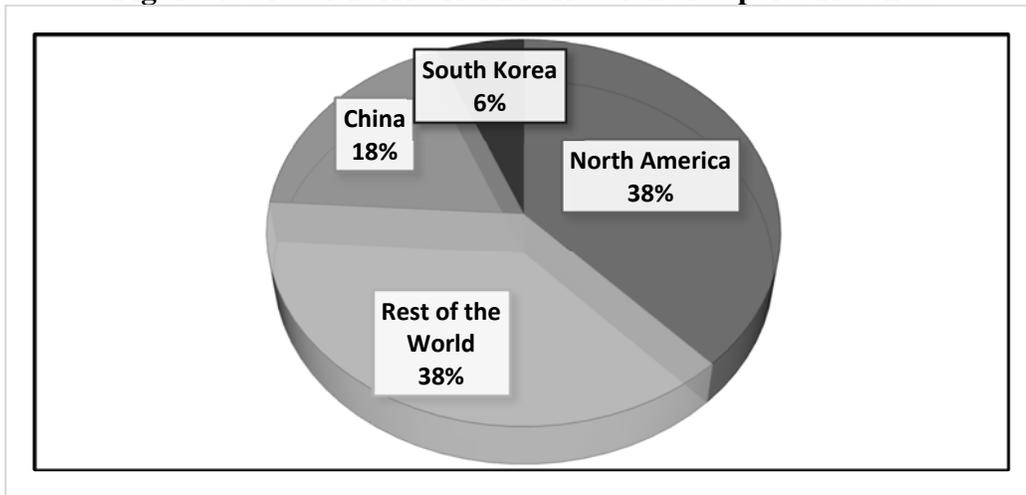


Source: 2018 Global Esports Market Report by Newzoo

The epicenter of this activity is not only in the U.S., but has expanded very successfully to Asia, where it is followed very closely on *Twitch* (a streaming platform specializing in videogames through which eSports reach millions of people). Figure 4 shows the territorial distribution of worldwide revenue.

<sup>15</sup> Information from reports: *2017 Global Esports Market Report* (Newzoo) and *The Nielsen's eSports Playbook 2017* (Nielsen).

**Figure 4. Global Territorial Distribution of eSports Revenue**



Source: 2018 Global Esports Market Report by Newzoo

Beyond this market's media influence and economic dynamism, it is important to also mention some of the repercussions of its consumption habits it implies. Esports transform videogames into a formal and material competition, with rules, rankings, teams, prizes, grand events, spectators, live broadcasts, and even training routines involving mental and physical preparation. This turns a simple entertainment into a professional career built on media presence and the economic impact of its main protagonists, through which the gamer begins to emulate the elite sports star. Exhibit 2 presents a list of the most important tournaments of 2017.

### **Synergies between eSports and Virtual & Augmented Reality**

Two important aspects can be explored by analyzing the synergies between Virtual Reality and Augmented Reality:

1. **Space for developing new games**, be they evolutions of existing games or totally new formats.
2. **Tool(s)** for improving the consumption of eSports content, be they immersive games or not. Here it is important to separate the application of virtual reality and augmented reality in the world of videogames.

Virtual reality (VR) allows the spectator to see gaming events in person from remote locations, while it provides gamers with a new form of vision and experience. Augmented reality (AR) is used to integrate data and information into the game already visible to the spectator, or to turn a game into a sport, and thereby create a community of players.



Based on estimates from IDC, growth predictions for virtual and augmented reality are encouraging. Global revenues for this market are expected to increase from \$5.2 million USD in 2016 to more than \$162 million in 2020, which represents a compounded annual growth rate (CAGR) of 181.3%.<sup>16</sup> The market for devices for both VR and AR was expected to reach 13.7 units sold, while for 2021 the estimate grows to 81.2 million – a CAGR of 56.1%.<sup>17</sup>

Business opportunities in a market experiencing this kind of hypergrowth are obvious. When such potential is combined with the rise of eSports discussed above, it has the opportunity to create disruption of massive proportions – not only in the videogame market, but also in the entire entertainment industry. Because it is important to analyze this possible integration with a focus on current experiences and future projects, we will examine two specific cases.

Furthermore, there is a strong synergy in the type of audiences in which both industries have penetration: factors like tech savviness, owning gaming equipment, and interest in videogames in general, all make the intersection between these industries naturally strong. There is also the fact that we find many repeat actors on the offer side of both markets (e.g. Valve, Epic Games, Microsoft).

### *Analysis of eSport Case Studies*

In this section we will analyze cases of representative eSports companies.

#### *Virtual Reality Game Companies*

##### **A. RIGS**

One of the first efforts to integrate videogames and virtual reality was the *RIGS Mechanized Combat League*, developed in 2016 by Guerrilla Cambridge and distributed by Sony for PlayStation VR. The game was configured as a mix of first-person shooter (FPS) and a sports format with characteristics similar to basketball. The point of the game was to accomplish a series of missions using a group of giant robots that engage each other in three-on-three combat.<sup>18</sup>

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<sup>16</sup> *Worldwide Semiannual Augmented and Virtual Reality Spending Guide* (IDC, 2017).

<sup>17</sup> *Worldwide Quarterly Augmented and Virtual Reality Headset Tracker* (IDC, 2017).

<sup>18</sup> Piers Jackson, head of game development at Guerrilla Cambridge, described the process of creating a game thusly, "*Being an external study, we had long embraced the idea of Virtual Reality, and we were thinking of developing a first-person shooter but finally decided to do something unique in VR, a new experience. We basically fused the combat of a first-person shooter with sports, and that is how RIGS came about. We felt it fit perfectly with PlayStation VR because it was an innovative and attractive game for players. It was also a perfect challenge for a study like ours. There are a lot of games that have "twists, but in all of them the machines are like tanks, and from the very beginning we decided that in RIGS we wanted the robots to be like Formula 1 cars.*" (interview by Nacho Castañón for Alfabetajuego, December 20, 2016, <https://www.alfabetajuega.com/noticia/piers-jackson-el-futuro-de-guerrilla-para-la-realidad-virtual-es-seguir-trabajando-en-rigs-n-77601>).

*RIGS Mechanized Combat League* was quickly put through its paces in the eSports market with a number of tournaments taking place in Japan, which demonstrated the enormous advantages this new modality offered for *publishers*<sup>19</sup>.

Beginning with this project, a number of technical challenges arose for VR videogame programmers. These mostly had to do with improving usability and competitiveness between players and teams, some examples of which are:

**Presentation of information and statistics:** Two-dimensional menus do not function in a VR ecosystem. Indicators, cursors, and interfaces must be integrated into the scenery, organizing and classifying data in three dimensions so that players and teams can make decisions more efficiently.

**Sensation of immersion:** Perspective is crucial in the VR environment and it is necessary to present realistic points of view: for example, a player must be able to see the chassis of a car or the facade of a house before entering them, or be able to perceive the depth of a street when looking down it and sensing the amount of distance travelled on foot while preserving horizons and densities. Therefore, recreating the process of reality in first person through movement and control of the character is fundamental if the player is to completely identify with the game. This environment must also create tension and competition without causing nausea and visual fatigue for participants.

**Positional audio:** The sensation of interacting with an object, passing through a scene, or carrying out any specific activity is critical if the player is to be immersed totally in the game. As such, developers must introduce more and better sounds that establish nuances like distance and intensity, projecting audio based on positional factors.

## B. *DOTA VR Hub*<sup>20</sup>.

In 2016, Valve (developer of both the popular DOTA 2 game and the Vive VR headset) launched a special VR spectator mode called DOTA VR Hub, as a Downloadable Content (DLC) of the game. Many of the aspects discussed in the case above are addressed in this experience.

**Feeling of immersion:** DOTA VR Hub starts by using the traditional perspective of spectator mode to provide a sense of familiarity for players. There is also the option to “enter” the

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<sup>19</sup> Hermen Hulst, director and founder of Guerrilla Games, confirmed “*We had a few eSports teams playing RIGS on a stage in Tokyo and the emotion there was incredible. It is the type of game that fits perfectly with this kind of competitiveness.*” (interview by Alex CD for Vida Extra, October 8, 2016, <https://www.vidaextra.com/entrevistas/la-realidad-virtual-ha-venido-para-quedarse-entrevistamos-a-hermen-hulst-director-y-fundador-de-guerrilla-games>).

<sup>20</sup> *Spectating Dota 2 in VR is amazing, watch it in action* (Polygon, July 29, 2016, <https://www.polygon.com/2016/7/29/12325418/dota-2-vr-valve-vive>).

world of the game. This perspective increases the sensation of immersion at the cost of limiting the game's original perspective. The user can switch between both types of perspective at any time.

**Presentation of information and statistics:** Thanks to the decision to provide a choice between perspectives, DOTA VR Hub makes complete use of virtual space while using a "traditional" perspective to view the game. This consists of showing complete game statistics with the details of each individual player. Normally, presenting that much information at the same time would be overwhelming for a spectator. Sharing it in the virtual space, however, makes it much more accessible. Valve's proposal is a combination of floating panels and 3-D models of each character.

DOTA VR Hub is notable because it represents a significant effort on the part of a publisher to improve the consumer experience of an already existing eSport using VR. A limiting factor for this chaotic type of game in particular is the need for high-level gaming teams to enjoy the experience.

### *Virtual Reality and Video Streaming Companies*

#### *C. Sliver.tv and YBVR*

These two companies have proposed, at different times, utilizing video streaming technology in virtual reality to improve the eSports experience, and eliminating the need for expensive, high-performance equipment.

The proposal calls for combining the perspective of the various players into one immersive video (of 360 or 180 degrees), and transmitting it as a single video that can be accessed on any device with an Internet connection. Like a VR backdrop, it could be a 360 degree video or a virtual camera inside the game itself, depending on the possibilities programmed by the publisher.

Sliver.tv has produced a pilot for their proposal with the game *CS: GO*, and YBVR with *Fortnite*. Both companies promise to provide any eSport with the opportunity to be a completely immersive experience.

## *Augmented Reality and Techno Sports Companies*

### *D. MELEAP - Hado*

In 2016, the Japanese company Meleap presented *Hado*, the first physical activity augmented reality game based on firing simulated balls of energy. The print media dubbed this new activity *techno sport*.<sup>21</sup>

Hado only requires a smartphone, a movement sensor, and augmented reality to allow users to run, jump, and move within a field of play. The team that gains the most points during a determined period is the winner. The game has been so successful that the *Hado World Cup* has been held since 2016, and attracts competitors from various countries – in 2018 will feature a winning prize of \$120,000 USD.

Hado shows that eSport competitions can be developed without access to large and expensive devices or games with advanced graphics. It also presents new ways to create compatibility with current games and those that incorporate virtual reality, and provides more technological impact by adding additional playability.

AR also received quite a boost from Apple's 2017 launch of the *ARkit* app, which allows users to easily create AR experiences through iPhone and iPad<sup>22</sup>.

### **Designing the Future of eSports**

It would be foolish to ignore the opportunity inherent in the successful merging of AR and VR with eSports. However, there are certain considerations that link the successful construction of this emerging market with its ability to attract diverse audiences, and an evolution of the business model centered on immersive technologies.

### *Advancing toward more Spectacle*

ESports have become a viral phenomenon that attracts followers from around the world through expanding media exposure. The industry has become more prosperous as it migrates away from a specialized sphere of hardcore gamers and is marketed toward a more diverse public. We agree with MORSE's suggestion that the economic success of this activity will be based on its ability to deploy a strategy of increasing showmanship throughout the industry. This implies adopting the same commercial sponsors and the same audio-visual aesthetic enjoyed by the majority of conventional sports.

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<sup>21</sup> *Japanese AR Phenomenon HADO Holding Their Second World Cup* (Gamehubs, October 11, 2017, <https://gamehubs.com/article.php?id=japanese-ar-phenomenon-hado-holding-their-second-world-cup>).

<sup>22</sup> *Apple se lanza a la realidad aumentada con ARKit* (CNET, June 5, 2017, <https://www.cnet.com/es/noticias/apple-realidad-aumentada-wwdc-2017>)

Considering the current ecosystem and the pretensions of the relevant actors, we estimate that to increase the spectacle of eSports, the industry must focus on three main objectives:

1. Decentralization of the business model dominated by *Publishers*
2. Permanent innovation through *startups* that renew the experience
3. Expanding the phenomenon to other categories of actors.

Below we expand on the details of each objective:

### **1. *Decentralizing the Business Model dominated by Publishers***

The coming years will see a decrease in the importance of publishers, whose role will be progressively reduced by the decentralization of revenues in the market. This will be mirrored by an increasing role for sponsors and broadcasters, as they invest more and more in image, content, and broadcasting rights, reproducing the environment that exists in many traditional sports leagues.

Currently, publishers own most of the rights to eSports events, but only a small number of these have evolved toward a more flexible business model. This blocks significant changes to conceptions of intellectual property and other such issues that are indispensable in overcoming current legal limitations.

On the part of *broadcasters*, platforms like Amazon's *Twitch* and Google's *YouTube Gaming* seek to maintain their predominant position. However, other media giants are making waves – for example Facebook's alliance with ESL,<sup>23</sup> and the menacing presence of content-hungry global competitors like HBO, Disney, Hulu, and Netflix, and regional actors like Movistar and Blim in Spain and Mexico.

### **2. *Permanent Innovation through Startups that renew the Experience***

The combination of VR and AR with eSports presents opportunities for complementary business through the development of platforms and new devices (gadgets). An exciting network of startups is starting to grow around these platforms and gadgets, lending a new level of creativity and innovation to the market. These entrepreneurs are orienting their ideas toward the continual renovation of this type of entertainment, and taking advantage of the more fertile ground of eSports – with stricter and more rigid schemes, traditional sports are not as prone to welcoming novel ideas and innovation.<sup>24</sup>

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<sup>23</sup> ESL announced on January 18, 2018 that it would broadcast two major videogame competitions exclusively on Facebook Live, and a weekly program on Dota on Facebook Watch. Facebook and ESL have agreed to bring 5,000 hours of content to the social media network (*Facebook será el hogar exclusivo de dos grandes torneos de 'e-sports'*, CNET, January 18, 2018, <https://www.cnet.com/es/noticias/facebook-watch-torneos-esports>).

<sup>24</sup> In the world of soccer, the great innovation of the past few decades has been the introduction of *Video Assistant Referee* (VAR), which allows the referee to refer to game video in four cases of doubt: penalties,

Some examples of these novel products are micro-fluid technology gloves that situate players in three dimensional environments, full-body suits that function like a second skin and capture and translate movements with thermal control, platforms that accelerate distribution and player winnings using *blockchain*, or artificial intelligence used to analyze sponsor profitability.

Table 3 shows a sample of disruptive startups entering the eSports business. These companies will contribute greatly to growing this market while at the same time making the entire ecosystem more dynamic. This will help promote greater connection between sports clubs, publishers, and investors through competitions, grants, and meetings that allow for more access to funding.

**Table 3. Disruptive Startups in the eSports Industry**

<b>Startup</b>	<b>Country</b>	<b>Activity</b>
HaptX Inc	United States	Producing gloves using micro-fluid technology
Tesla Suit	United States	Whole-body suits with thermal control
Razer	United States	Development of products for gamers
Bountie	Singapore	Blockchain monetization platform
DreamTeam	Singapore	Blockchain payment gateway
Unikrn	Singapore	Platform for betting and sale/purchase of sports clubs with blockchain
Blinkfire	Spain	Intelligence and artificial vision technology for real-time analysis by eSports sponsors
Streamloots	Spain	Tool to unite streamers and spectators in an entertaining fashion
Pixel Esports Club	Mexico	Improves professionalization of videogame competitions

Source: Developed by the authors.

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ejections, confusion in assigning cards, and goals. In other sports these changes are usually discussed as an update of the rules.

### 3. *Expanding the eSports Phenomenon to other Categories of Actors*

Although at first glance eSports seem bound by a complex system, the truth is that it is still an immature market with few actors, high concentration, and relative diffusion compared to traditional sports. In order to take definitive steps in attracting widespread consideration from analogue businesses, it is necessary that new protagonists enter and fine tune the architecture of this market – adding more value, complexity, and institutionalization to the competitive nature established by tournaments and sports clubs.

In the near future, it is likely that new relevant actors will spring up in the market. Among these newcomers may be startup entrepreneurs that regenerate the ecosystem; large investors that want to acquire sports clubs; agents that help gamers professionalize their careers and make their commercial image more profitable; physical trainers and sports psychologists that motivate, train, and educate future stars; scouts and headhunters that search for talent among gamers and managers from all over the world, collaborating closely with sports clubs.

It is important to note that all of this supposes that eSports will be considered a target for investment with the potential for creating wealth; one that is capable of attracting tangible and intangible revenue and creating new specialized jobs.

Moreover, it is expected that eSports will garner much more attention from journalists, bloggers and other influencers, creating more content in the form of information and opinion that increases knowledge about this activity. This will pave the way for the entrance of streamers that want to broadcast games online; insurance companies that will insure players and clubs; and the proliferation of new curricula at universities and business schools that take this kind of knowledge into account.<sup>25</sup> Finally, there is the potential for duplication, with recognized sports entities building presence in this new market – as is already happening – and famous traditional athletes building their “*altar egos*” as eSports athletes.

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<sup>25</sup> *e-Sports* have already arrived at the main universities in the United States, which now offer them as university sports (<https://www.onlinecollegeplan.com/league-of-legends-esports-gamers>). Other academic institutions have begun to give eSports scholarships for games like *League of Legends* and *Overwatch*. In Spain, the first online university dedicated to eSports has been established, *Playeek* (<https://playeek.com/es/academy>)

## Final Reflection

### Evolution & Challenges to the Business Model introducing an Immersive Experience

The open questions surrounding the introduction of virtual reality video games are symptoms common to any new developing technology. In this case, normal doubts are exacerbated by the speed with which these games are popularizing among digital natives, the peculiarity of the players and clubs, and by the desire on the part of spectators and sponsors to be part of this transformative entertainment.

Although the integration of VR and AR with eSports is a forgone conclusion, new patterns of consumption in the Network Society lead us to believe that this transition will have to go through various stages of improvement to achieve a profitable, scalable, and synergistic symbiosis.

In spite of their obvious potential, we do not believe that it yet provides a completely innovative or satisfactory experience. This not only applies to the current principle actors – hungry to build a more aesthetic and sensitive commercial relationship – but also for those that consider themselves outside of this market.

Among those falling in this segment are: generations older than *millennials*, females, persons with disabilities,<sup>26</sup> and companies outside of the field of technology.

It must be made clear that, in their current structure, audiences at these kinds of events are only looking at players that are seated in front of monitors, which makes the product or game more important than the ecosystem surrounding it. It is, therefore, more of an analogue and static experience than a digital and dynamic one. This can cause attendees to become bored and even cause the business model to stagnate – turning eSports into a fleeting fashion or niche hobby.

In our judgment, the opportunity to adequately sustain hypergrowth in this market lies in the introduction of more immersive technologies. For example, introducing VR would force players to physically move around the scenery, while spectators – if they choose – can watch the action from inside the game itself. Introducing AR would allow spectators, sports clubs, and sponsors to interact and communicate with one another, and share ample and heterogeneous information in real time – this would represent a broad-spectrum marketing revolution. With this technological leap, eSport could solidify growth with more differentiation, resulting in more spectacular and profitable events.

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<sup>26</sup> The opportunity to include individuals suffering from physical and mental limitations in eSports is of particular interest, given their ability to break down barriers and allow their participation in sports in digital space.

The apparent surge of newer, cheaper, and simpler hardware is a cause for optimism in the long term. It has the potential to place VR and AR technology within reach of a growing number of companies and individuals, motivating players, clubs, publishers, sponsors, broadcasters, and spectators to diffuse a wide variety of content, activities, and emotions that strengthen the sense of belonging and interconnectedness among actors.

What is certain is that it is still difficult to delimit the potential of this new market – its accelerated growth, the appearance of large brands, and the fervor of investors distorts its true reach, and creates a deceiving landscape in which certain risks and challenges are hidden, as is the risk that this market is being overestimated. However, this does not contradict its potential to be a high-impact global industry that, when combined with AR and VR, could take on a character equal to or more important than traditional sports.

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**Exhibit 1. Chronology of important milestones in the eSports market**

<b>Year</b>	<b>Event</b>	<b>Organizer / Sponsor</b>	<b>Territory</b>
1972	<i>Intergalactic Spacewar! Olympics</i>	Stanford University students	California, U.S.A.
1980	<i>Space Invaders Championship</i>	Atari	New York, U.S.A
1990	<i>Nintendo World Championship</i>	Nintendo	Tour of cities in the U.S.A. and Canada
1994	<i>Nintendo PowerFest</i>	Nintendo	Tour of cities in the U.S.A. and Canada
1997	<i>Cyberathlete Professional League (CPL)</i>	Ángel Muñoz	Texas, U.S.A
1998	<i>Local StarCraft competitions</i>	Blizzard Entertainment	South Korea
2000	<i>Electronic Sports League (ESL)</i>	Jens Hilgers and Ralf Reichert	Global
2000	<i>World Cyber Games (WCG)</i>	Samsung and the South Korean Ministry of Culture, Sport, and Tourism	South Korea
2003	Recognition of <i>electronic sports</i> as sport number 99 of the official sports program	General Sports Administration for the Chinese State	People's Republic of China
2013	U.S. P-1A Visa given to gamer Danny Le, recognizing him as a professional athlete	U.S. Citizenship and Immigration Services	U.S.A.
2017	<i>NBA 2K eSports League</i>	National Basketball Association (NBA) and Take-Two Interactive	U.S.A.
2017	<i>eFootball.Pro League</i>	Konami y eFootball.Pro	Europe
2018	Olympic Esports Forum	COI and GAISF	Global

Source: Developed by the authors

**Exhibit 2: Ranking of the most important Tournaments of 2017**

<b>Event</b>	<b>Players</b>	<b>Teams</b>	<b>Location</b>	<b>Total Purse</b>	<b>Winner and Share</b>
The International (Dota 2)	80	16	Seattle, U.S.A.	\$24,014,551	Saahil Arora (alias: UNiVeRsE) \$2,777,796
League of Legends World Championship	86	16	Los Angeles, U.S.A.	\$5,070,000	Lee Sang Hyeok (alias: Faker) \$912,406
World Electronics Sport Games Counter- Strike	40	8	Changzhou, China	\$1,500,000	Gabriel Toledo (alias FalleN) 472,257
Halo World Championship	48	12	Burbank, U.S.A	\$1,000,000	Tony Campbell (alias Lethul) \$424,850
Call of Duty XP Championship	127	32	Los Angeles, U.S.A	\$2,000,000	Johnathan Perez (alias John) \$232,707

Source: Based on the report *Biggest video game competitions from around the world* (mrgamez.com, 2018)