

SHARING IN SPORT THROUGH TECHNOLOGY

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Abstract:

Nowadays the sport has acquired a great power, in general, to bring about change at the social level, to help the development of communities and to promote peace and understanding both at national and global level. It is also a platform for combating stigma and social discrimination, contributing to gender equality as well as healthy behaviour. The paper "Sharing in sport through technology" describe what this concept means which involves the different games that bring people and joy together, technological development that has contributed to the dissemination of matches and information in real time around the globe, connectivity between fans and players through digitalization, but we will present the UEFA 2020 championship that took place during this period and what exactly this sharing term involved in this competition.

Keywords: *Sharing, fans, sport, knowledge, technology*

JEL classification: *M30, M31, M37.*

1. Introduction

Sport is defined as 'organized game, accompanied by physical effort, achieved through a formal structure, organized in a context of formal and explicit rules of behaviour and procedures, and observed by spectators [3].

Sport is a game that forces the individual to a triple fight: against himself, against other individuals and the fight against nature, within precise rules and conventional obligations.

The social structure of sport represents 'a leisure activity whose dominance is the physical effort, practiced in a competitive manner with specific rules and institutions and susceptible to become a professional activity' [14].

Of course, one of the factors that contributed to the development of the sport, to its diversification and spread, was the addressability, in the sense that it aimed at practicing physical exercises not only by students, but also by people of different ages; engages in the emotion of the competition not only the practitioners, but also the spectators; following not only sports performance, but also obtaining the psycho-physical balance of any participant [2].

Sport has the power to change the world; it is a fundamental right, a powerful tool for strengthening social ties and promoting sustainable development and peace, as well as solidarity and respect [9]. Through our unique individual abilities and collective strength, we can come together and share creative ways to improve our health and well-being through sport and physical activity - even within our own homes.

2. Literature review

2.1 Sharing - how sport has adapted to the pandemic with the help of technology

Overtaken by the pandemic, some sports have used technology better than others to make up for the absence of competitions or spectators.

Sports competitions should have been the headliner in 2020; we only had a summer with the Olympic Games, the most important sports competition in the world, but also with Euro 2020, which should have shown us what a piece of the atmosphere of a final football tournament means.

However, the COVID-19 pandemic came, and all major sports competitions, from spring to mid-summer, were either postponed or cancelled. For the athletes, the calendar season and their entire rhythm were completely derailed.

However, solutions have been sought and are still being sought to use technology to counterbalance the effects of the medical crisis. From online racing to simulated fans in arenas, sports forums and leagues around the world have tried to keep the appearance that nothing has changed and that anything different will only be temporary. But it is very likely that what is temporary will be a first step towards something more significant in the future - an increase in the influence of new technologies in sports that are hundreds of years old.

Many sporting events were cancelled or postponed before they began, but in some cases the pandemic caught certain sports in the first season or in important early portions. The cycling season, for example, was interrupted shortly after it began. After five major events sanctioned by the International Cycling Union, he took a very long break between March 14 and August 1, especially since some athletes became ill with COVID-19 in the UAE Tour. This period was normally sprinkled with many one-day races and traditional competitions, as well as major events such as the Giro D'Italia or the Tour de France.

Unlike most sports, however, cyclists had a virtual solution somewhat close to reality: the Zwift platform. Basically, this is a virtual cycling application that can be used on any bicycle equipped with a turbo trainer - a smart gear whose pedalling resistance is controlled by the application, via Bluetooth or a wireless ANT sensor. For a professional setup, sensors can be added that monitor the heart rate or the power that athletes exert in the pedals. It is recommended to have a fan to control the temperature around the device during longer sessions.

This data is processed by the application and transferred to an avatar on the virtual route, with fairly detailed graphics, which you can see in real time on an adjacent monitor, tablet or phone. Zwift was developed mainly for virtual amateur racing, in which they compete with the avatars of the other participants on the route. However, the ability to monitor and interactivity made it an excellent training tool during a global quarantine.

Motor sports have adapted even better, obviously due to the less physical nature of racing, but also due to the more realistically developed simulators, some of which are more advanced are used in testing cars for years. But even those available to the general public have become complex enough to take place, with some truth, real races. Formula 1 is probably the only sport that has replaced its races cancelled due to the pandemic with virtual ones in its own accredited game, F1 2019, in which some of the real drivers participated. And they were a real success, garnering tens of millions of views online, although the races will not officially count. The 24-hour Le Mans race moved entirely to rFactor2, and the NASCAR, IndyCar and Formula W competitions took place in iRacing - both games in the extreme of "simulation and realism at all costs" of racing games.

In other cases, the solutions were less virtual. Unlike cycling, it is much harder to simulate athletics indoors, and the solutions were represented by distance races. In the United States, such a race took place on Instagram, between two professional teams from Arizona, who made their athletes run on similar routes at the same time, using the Strava application for real-time monitoring and comparisons. Other applications, for MapMyRun, on Android systems, and iSmoothRun, on Apple Watch, were used to put two people on a virtual route at the same time. Finally, the technology was used in July for Inspiration Games, a competition that brought in world-class athletes such as sprinter Allyson Felix in indirect trials held at seven different stadiums in the US and Europe.

However, team sports did not have to sit on the bar too long. In Europe, the first major competition to start after quarantine was the German Bundesliga football championship in mid-May, while the rest of the world was slowly resuming other sports, from cricket to basketball. However, in addition to the additional difficulties of protecting the players, staff and officials of COVID-19, they also had to deal with the lack of spectators in the stands.

The events played on empty stadiums are not necessarily a rarity, especially in Romania, where even the national football team is subscribed to punishments of this type. But in addition to the significant loss of ticket revenues and even a small role in changing the way of arbitration, the lack of public brings a big minus in marketing. After all, taking the example of practices already entrenched in American sports, most popular sports are increasingly being promoted as a show or a special experience. Spectators become fans, a vehicle whose collective emotion and reactions in unison have a special role in raising events above their nature from simple sporting competitions to the rank of "must watch" productions.

But if Europe is only content with audio presentation, in other areas there have been more creative approaches - but sometimes in the wrong sense of the word. For example, you would probably expect SF solutions in East Asia, and the Taiwanese baseball championship, resumed at about the same time as the Bundesliga, offered just that: to make up for the lack of fans in the stands and the atmosphere created, they have were "equipped" with robots beating the drums.

In Japan, returning to football, Yamaha has developed a mobile application through which fans can transmit their reactions to the game phases, which is then instantly broadcast by the speakers in the stadium. It is probably the best approach to bring spectators to remote stands, but we do not know how well it works on its own, because when it was introduced in July in the Japanese championship had already been re-allowed and partial access, with distance social, of the spectators.

Instead, sports leagues in the United States have decided to throw out some totally underdeveloped and probably inappropriate technologies, in the idea that there must be some kind of virtual fan presence, not that someone should panic that they went crazy after three seconds to hear a sound background without an immediately identifiable source.

It is quite clear that, despite more dubious applications, technology has become indispensable for sports that were practiced when the light bulb had not been invented. If we don't have a new explosion of infections and a quarantine period on the mainland, we'll have less news about racing on Zwift or iRacing as current competitions return to normal and we probably won't even notice the lack of spectators in the stands. But this does not mean that e-sports pursued by real sports will not increase in popularity, that televisions will not choose to "pepper" the sound background even when there are full stands or that training between athletes on various continents will not become the norm. Quarantine could very well be a beta test for the future integration of sport into today's hyperconnected world.

2.2 Sharing - connectivity between fans and players through technology

Modern sports use sophisticated technology to improve performance. It helps athletes increase their accuracy and performance. Also, technology has promoted fairness in different sports events [20].

Technology displays accurate data - especially when it comes to football matches. The electronic table that keeps the score of the game, as well as the changes made by both teams is really a factor of the help given by the technology for the sports team [10].

Technology offers viewers a replay of important phases - and this happens even in a very real time (short). And we can say this because you no longer need to watch the match at certain times, as the important phases benefit from replays, shortly after they have taken place;

Technology contributes to the development of a relaxed lifestyle. It appears in all areas of life. We can no longer imagine our existence without it.

He also entered the world of sports since the 1980s. Today, it has reached a higher level. It gives you access to special online facilities; in reality, in a virtual game [21].

From the goal validation method on the goal line and video streaming to the VAR system - the sport is directly influenced by the evolution of technology.

Athletes are role models for people all over the world, and thanks to technology improvements, sports coverage is now broader and broader [8].

People from a small city in Europe can now watch an entire soccer competition that takes place in Asia, without needing to purchase plane tickets or wait for it to be broadcasted on TV. They can simply go online and find a streaming website.

Moreover, the field of video editing has allowed an improvement of the experience of the spectators, both those on the spot and those who watch events from the comfort of their own home. Whether it's an edited promotional video such as the World Cup or the presentation of replays and supplementation with explanations using computer-generated images, information technology has become an almost mandatory component for this field.

It is expected that the focus of technology development will be on the level of interaction between athletes and fans. 77.6% of the technologies implemented this year will be aimed at improving the relationship between them. In this sense, we discuss areas such as esports, live streaming, betting methods, etc. 16, 3% of the technologies will focus on athletes, the main points of interest being their recovery and training platforms. The percentage of 6.1% is intended to strengthen the security of the stadiums (instant visual fingerprinting technologies, safety and protection of fans and athletes, etc.). Augmented reality, combined reality and virtual reality technologies will move to a new level [4].

The online environment has managed to take virtual interaction to an impressive level, especially in the last five years, when social networks such as Facebook, Instagram and Twitter have become the favourite meeting place of almost half of the planet.

Thus, they have become the simplest ways to discuss and share various events in private life, with friends and acquaintances. With the normal era, all celebrities, regardless of the field in which they operate have understood how easy it is for them to increase their fame and keep in touch with fans, so their accounts are the most accessed and enjoy special attention from users of these social networks. Athletes are one of the best represented categories in social media, they use their accounts to keep in touch with fans, offering them various news from their lives. Both Romanian and international athletes have understood that as long as they are active in the virtual environment, their sports performance will be even better highlighted.

Athletes from abroad have understood how vital their presence and interaction in the virtual environment is, that's why they record fabulous numbers on their Facebook and Twitter accounts [6]. Unlike the Romanian athletes who do not pay so much attention to the social network Twitter, those from abroad understood that only by combining the activity on these networks, they will be able to set real records. The most watched international athlete is Cristiano Ronaldo, who enjoys over 162 million fans worldwide. The Brazilian football player, Neymar Jr, followed them in the ranking with over 102 million fans, the fourth place being also occupied by a football player from Brazil, Kaka, who has over 57 million fans [19]. The star of the team from the city of Barcelona, Lionel Messi gathered over 100 million fans, and this in the conditions in which he has only one Facebook account and none on Twitter. American basketball player LeBron James is very active on

social networks and has over 55 million fans, while tennis player Rafael Nadal has over 25 million fans. The degree of interaction between foreign athletes and their fans around the world is much more intense compared to Romanian athletes. Many of them are represented in the relationship with the fans by PR companies, which take care of their accounts and the level of communication with the supporters.

Of course, the level is different in terms of openness to public life of outsiders, but slowly Romanian athletes will understand that, from now on, the online environment will be the place where social interaction will be at its maximum.

People will be able to use multi-modal interfaces. These will allow them to interact at an advanced digital level. They will be able to enjoy new ways of watching matches. They will be able to change the viewing angles of the transmissions up to 360 degrees.

VR glasses will continue to progress and improve the way they watch sports. As technologies advance, the line between athletes and fans will thin. In the end, the level of interaction will be almost complete.

There is still talk about the new technology that will revolutionize the way of communication. 5G technology currently means a leap to hyper speed of 1 Ms. meaning, an almost instant response time. Online broadcasts will be continuous, smooth and without signal loss. The traffic capacity of a network will increase 100 times, as will its efficiency.

In sports, this means virtual training environments for athletes. XR (Extended Reality) will allow them to have a mix between bad and virtual environments as they never existed before [15]. Footballers, basketball players and even racing drivers will benefit from multiple advantages with 5G technology.

Fans will be able to have instant replays from various angles. The way you watch the match at home will be completely different (in a positive way). There is even talk of providing personalized content for fans. This, even in a live broadcast.

Technologies have helped the development of sports over time [7]. Without them, sport, as we know it today, would not have been the same:

- High Definition 4K technology - watching sports broadcasts has taken to another level;
- Mobile live video streaming technology - fans now benefit from wearer matches;
- Player monitoring technology - streamlined the way they train, providing coaches with valuable information;
- Digital access technology to sports events - fans won in terms of time saved, and organizers in terms of safety;
- Virtual Reality Technology - watching sports content has become increasingly captivating.

3. Case study: Sharing in sport - UEFA 2020 football championship

EURO 2020 takes place in 2021, postponing a year of the epidemic that has ravaged the continent.

The matches take place in 11 cities, and the national teams, with tired players, coming after long championships, with an uncertain schedule and many matches without spectators, do everything they can for the show to continue [13].

EURO 2020 should have taken place between 12 June and 12 July 2020, but plans were turned upside down due to the COVID pandemic, which paralyzed the whole world in the first months of last year.

The danger posed by the SARS-CoV-2 virus and the severe restrictions imposed in most countries in March 2020 have led to the complete cessation of sports competitions.

One by one, the national football championships, but also the European competitions - Champions League and Europa League - were suspended, and UEFA finally announced the postponement of EURO 2020 for one year.

The European football forum indicated that the tournament with the participation of 24 teams took place between June 11 and July 11, 2021.

The European Football Championship which takes place in 2021 is called EURO 2020. This has led to many questions from the fans and not only.

UEFA decided to keep the EURO 2020 name because the Championship was supposed to take place last year, but due to the coronavirus pandemic it was postponed. The European Football Championship takes place every four years, therefore the decision to keep the Euro 2020 title is easy to understand. In addition, this has a marketing strategy behind it. Namely, all sporting goods, every ticket, every decoration created long before the pandemic is announced, should be withdrawn and replaced, which would mean high and unjustified costs [12].

UEFA put pressure in the spring on countries where Euro 2020 is taking place to allow fans access to stadiums. This year the football matches within Euro 2020 are played on 12 stadiums from 11 European countries: Bucharest - National Arena, London - Wembley, Munich - Allianz Arena, Rome - Stadio Olimpico, Baku - National Stadium, St. Petersburg - Kretovski Stadium, Copenhagen - Parken, Amsterdam - Johan-Cruyff-Arena, Seville - Olympic Stadium, Budapest - Ferenc Puskas Stadium and Glasgow - Hampden Park.

UEFA 2020 - gains, losses and how the Horeca sector has been affected

The European Football Championship would have been a great achievement from an organizational point of view and without the Covid-19 pandemic. The 24 teams present in the competition played for the first time in 11 stadiums from Glasgow to Baku, a radical change from the traditional model where one or two countries hosted all the matches, notes the Financial Times.

To complicate matters further, the pandemic forced European football's governing body, UEFA, to postpone the tournament for a year, while restrictions on the number of fans in the arenas led to a € 300 million drop in revenue, a result largely fuelled by the loss of money from tickets and hospitality.

The pandemic severely affected the income of football teams. If at the level of the lower leagues the disaster is total, a very large number of teams have gone bankrupt, in terms of top teams, including national teams, revenues have fallen sharply in 2020, and forecasts for 2021 are not at all optimistic. UEFA has announced its economic balance sheet for the last season, 2019/2020, which shows a decrease in the total revenues obtained by the teams in the Champions League, Europa League and League of Nations, as a result of the coronavirus pandemic. While the teams shared 3.093 billion euros with each other in the 2018/19 season, this amount was reduced to 2.417 billion euros in the next campaign. The revenues obtained by the teams in the Champions League decreased from 1.96 billion euros to 1.64 billion euros, while in the Europa League, the amount of 559 million euros in 2018/2019 decreased to 478 million euros, next edition. As for the League of Nations, from 551 million euros won in 2018/19, the total prizes were reduced to 278 million euros in the following season [16].

Among the teams that played in the Champions League last season, the finalist Paris Saint-Germain won the largest amount, 126.80 million euros, closely followed by last season's champion, Bayern Munich, with 125.45 million euros. In Spain, Barcelona was the only team to win over 100 million euros (100,251), followed by Atletico Madrid, with 91.45 million euros, and Real Madrid, with 80.84 million euros. The three English teams with the highest win in the Champions League were Manchester City, Liverpool and Chelsea, with 94.74 million euros, 79.57 million euros and 78.56 million euros, respectively [11].

In Italy, Juventus received 84.09 million euros, the highest amount. In Eastern Europe, Slavia Prague, Nicolae Stanciu's team, collected 18.274 million euros. The leader in terms of awards is in this part of Europe was Shakhtar Donetsk, with 43.12 million euros. It should be noted that in the Eastern leagues the salaries of the players are much lower, and the difference between diminished earnings and expenses is smaller than in the Western leagues.

Euro 2020 proved to be a profitable business for those in HoReCa as well. The hospitality industry had high expectations from the matches hosted to the final tournament. Hoteliers, restaurant owners, but also catering companies have faced major problems due to the pandemic. The final tower was a "lifeline" for many of them.

According to a study by PitchInvasion, the Horeca industry in Bucharest will collect 3.6 million Euros during the European Football Championship EURO 2020, following the organization in the Romanian Capital of four matches in the final tournament [17].

According to the same sources, the amount would have been even 4 times higher if it had not been for the pandemic. However, the money is very good for a hospitality industry so tried in Romania due to the restrictions imposed by the authorities.

This summer's football tournament rounded up the revenues of restaurants, pubs and hotels in Bucharest by 3.55 million euros, due to the expenses of the fans, but it loses potential gains of over 10.6 million euros due to the pandemic, according to a study conducted by the platform PitchInvasion.

Euro 2020 was heavenly for those in HoReCa. The hospitality industry has been among the most affected by the restrictions imposed during the long period of the pandemic.

The organization of 4 games from the final tournament of the European Championship meant a breath of fresh air for hotels and restaurants. Almost 25,000 foreign fans came to support their favourite teams. The National Arena has hosted 3 matches in Group C, Austria - Northern Macedonia, Ukraine - Austria and Ukraine - Northern Macedonia. That's right, the stadium gathered about 10,000 spectators at each of these meetings.

The "star" was, without a doubt, the match in the eighth finals, France - Switzerland. As officials allowed up to 50% of the stadium's capacity, more than 22,000 fans took to the stands [18]. The French received 7,000 tickets, while the Swiss only 1,500, but on the field things ended with the superb victory of the players from the "Land of Cantons". However, thousands of fans left their money through hotels, restaurants, terraces, pubs, especially those in the central area. To these were added the expenses made by UEFA for the accommodation of the teams and national team officials who played in Bucharest.

30 million euros is the amount collected by those in the hospitality industry following the four games hosted by the Romanian capital, informs stirileprotv.ro. Even if the expectations were much higher, the amount is, however, colossal considering the general context of a final tournament that had been postponed by a year. And the sanitary restrictions were maintained, the influx of supporters could not be the same as in a normal medical period [1].

According to the quoted source, the Capital could have reported revenues of over 14 million euros due to the expenses of the supporters who came especially for 2020, but more than 10 million euros were not spent due to traffic restrictions, but also those related to the number of participants in stadium matches, Economedica reports. This is because each of the four matches in Bucharest was played with only 13,500 people in the stands, respectively only 25% of the stadium's capacity. In the group stage, Bucharest, which hosted 3 matches, collected only around 2.75 million euros, most of the money coming from accommodation (1.2 million euros) and food (817,000 euros). If the matches had taken place in a normal, non-pandemic context, the revenues would have amounted to 11 million euros. In the eighth finals, Bucharest, which hosted a match, will collect almost 800,000 euros, although without the pandemic it would have collected over 3 million euros. London will have the biggest loss in terms of potential gain.

If the two matches planned to take place here had taken place without a pandemic, London would have won 93 million euros. In the current context, however, the capital of Great Britain has collected only 27.3 million euros, so it will lose revenues of 65.8 million euros.

3. Conclusions

Sport has always managed to bring people together, being a way of entertainment since ancient times [5]. The term sports sharing can mean various things, as we presented in this paper, from sharing knowledge, information and real-time visualization of data, and how a football championship has managed to hold in suspense. Fans from all over the globe following the matches played on the 12 stadiums. Thus, during these matches, the sharing term was complex, because it involved fans from various countries who travelled thousands of km to be with their favourite team, an entire Horeca sector that was prepared to satisfy the wishes of fans from far away, the show and the emotions from each match that were transmitted in real time. Regardless of whether the people were in the stadiums, in front of the televisions at home or on vacation, the matches could be seen on TV, from any location. It was a special competition in which the UEFA European Football Championship celebrated its 60th anniversary in a unique way: 24 participating teams and matches played in 11 countries, including Romania, which hosted for the first time in its history this important sporting event.

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