

MANAGEMENT CHALLENGES FOR SOCCER INDUSTRIES IN THE DIGITAL AGE BASED ON THE PERSISTENT COVID-19 PANDEMIC

Roni Jasraui, PhD Student

CEO AlNoor Global GmbH, Burgas Free University

Abstract: *If you think of Germany and sports, football is always the first thing that comes to mind. For more than 100 years, team sport has been part of society and fascinates a large part of the population. No wonder, in Germany alone, there are more than 7 million club members. Sport often manages to connect people in a positive sense. Politics is left out, and the world is associated with many international games. Before Corona, only games of the 1st Bundesliga in Germany had more than 13 million spectators. However, a unique infrastructure is needed to handle the volume regardless of the entertainment concept. However, this came with the entrance of the Covid-19 Pandemic to the succumbing to strict restrictions like plays without spectators, which resulted in economic disadvantages and bottlenecks. No club was prepared for an international loss of this magnitude; thus, there were no solutions.*

Keywords: *soccer industry, digitalization, Corona pandemic*

1. Soccer Industry in Germany

Around the world, Germany is associated with sports and football. The history of football goes back more than 100 years and is deeply connected with it in society. In addition to the sporting competition, one goal is to connect people regardless of the political influence irrespective of the sport. People from all walks of life come together to support their teams. The German Football Association has 26 local associations under which more than 24,000 clubs are registered. These, in turn, write more than 7 million members in 2021. This is roughly equivalent to 8.4% of the population participating as sports club members. In addition, there are spectators at games in all classes and competitions, nationally and internationally. Cumulatively, the number of spectators at soccer matches is between 25 and 30 million per year (Deutscher Fussball Bund, n.a.). While games in the first division attract 43,000 spectators, lower divisions may only have a low double-digit number of spectators. However, clubs live from their fans and spectators.

Tiny clubs without significant revenues must focus on spectators, as they usually bear a large part of the costs. These include, among other things, the cost of the referee and the maintenance of the facility. Even though clubs' prices in different divisions are not comparable, they all depend on these sources of income. Clubs in the Bundesliga, for example, incur license fees in the millions, but travel and personnel costs also have to be covered. In addition, a stadium that is only used for matches is much more cost-intensive to operate than a small local soccer field.

However, the sport is struggling with rapidly rising wages due to the entry of international investors. The best-paid player, employed by the record champion FC Bayern Munich, has an annual income of about 21 million euros. A first division club often uses around 25 players per team, so wages usually amount to over 200 million euros annually.



In addition, there is the coaching staff and other personnel such as administration, security, and cleaning.

The FC Bayern Munich Group had 690 million euros and a profit of 9.8 million euros in the 2019/2020 financial year (FC Bayern München, 2020). In international comparison, this club is well suited, as it is the most successful on a national and national level and has comparable costs to other top players. Clubs receive exceptionally high bonuses for international matches, continuing to operate positively. However, as the football season goes from summer to summer, a slight decrease is noticeable in the annual report for 2019/2020, as the first Corona restrictions were introduced in spring 2020. In revenue, there are significant differences between amateur and professional clubs.

As already mentioned, local clubs usually have manageable costs, primarily covered by the income of the associated restaurants and spectators. For professional clubs, however, these aspects slip into the background. Globalization has increased media interest in international games. Almost every country or region with its language offers its broadcasts with its commentators so that everyone can follow the matches. Due to the ongoing digitalization, many providers emerged that provided the games as a stream so that most mobile devices can be used as a broadcast platform. This is also reflected in the revenues. The broadcasting and licensing fees earned by clubs in the first Bundesliga generate more than EUR 1 million per season. The second most important source of income is advertising contracts. These are divided into various subcategories.

On the one hand, advertising is present in the respective stadium, such as perimeter advertising or the stadium name. Still, direct advertising on jerseys is also a desirable way to generate revenue. In addition, almost every club has a vehicle manufacturer as a sponsor, which provides service vehicles for the players (Baeuchle, 2020).

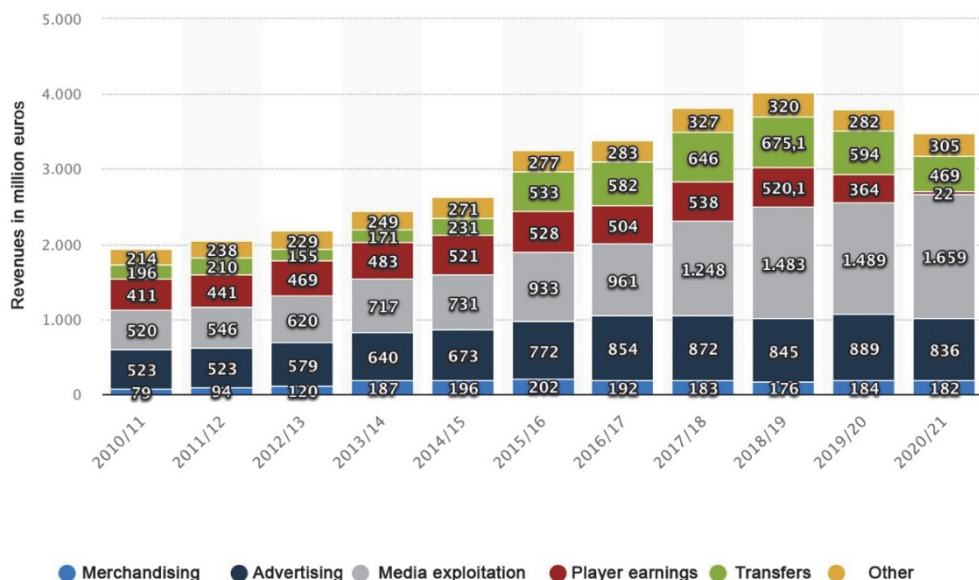


Figure 1: Revenues in a million euros

Professional football employed more than 50,000 people annually throughout Germany until the pandemic. This includes licensees, indirect employees, and subsidiaries. However, it is assumed that more than 165,000 jobs are directly or indirectly involved in purely arithmetical terms. Although the industry has comparatively few employees, it nevertheless generates high revenues. In 2014 were around 7.9 billion euros, an increase of approximately 55% from 2008. This is equivalent to about 0.3% of Germany's gross domestic product. The work is comparable to the revenue of a medium-sized city. Any other industry contributes as much to the gross domestic product as professional soccer. Textiles, fashion, and civil aviation all contribute comparatively less to GDP. Barely any other sector has experienced such strong growth. However, this also means rising tax revenues for the state; in 2014, taxes amounted to around 2.3 billion euros (Wer liefert was?, n.a.).

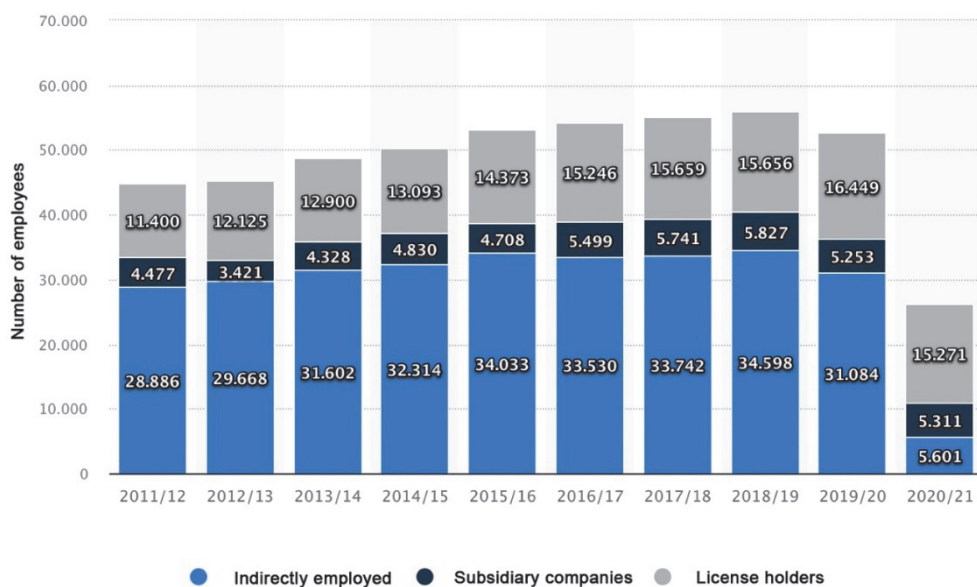


Figure 2: Division of employment

1.1 Direct effects and long-term consequences

For football, various problems arose due to the onset of the Corona pandemic. For one thing, this sport is a full-contact sport. The disease was little studied early, but the transmission routes were clear. Thus, to play the sport, it is essential to come into contact with teammates and opponents. At the same time, however, this puts the safety of the players at risk. Before thinking about the spectators, the focus was on maintaining the professional operation. In the case of non-commercial games, operations were discontinued, and the seasons were not scored. However, there was also no monetary added value or salaries that had to be paid. Since the clubs often participate nationally and in international events, the situation became even more complicated. While the first countries, such as Germany, paused the game to create security concepts, other neighboring countries continued operations. To participate in these came further hurdles.



On the one hand, air traffic was massively restricted, and on the other, the individual countries had specific requirements regarding entry. These included strict quarantine regulations. Some players had to isolate themselves from their families to be allowed to play. Additional PCR tests were often requested, which are time-consuming and costly. Nevertheless, complete isolation is virtually impossible in this sport. Therefore, there were more and more outbreaks of teams, so the reserve had to compete, or the games had to be postponed. Since the games and tournaments are very tightly timed, this led to rescheduling, which caused great chaos. Later, rapid tests were added, which simplified the process, although they are not as conclusive as PCR tests. Germany introduced new rules to get the game up and running as quickly as possible. Initially, the games were played ghost games, i.e., no spectators were allowed. This means that spectators are not allowed to attend the games, but their income is only a fraction of the total revenue. However, this regulation posed a more significant problem for subcontractors such as caterers. Some of these specialized purely in supplying stadiums, and the absence of spectators meant their only source of income was lost. This state of affairs was initially subject to nationwide criteria in which incidence was the deciding factor. Later, the concept was changed again, so regional incidence was taken as the yardstick. However, this concept also led to further difficulties.

The incidences changed weekly, so ticket sales often took place, or games could only be attended to a limited extent. There were also scenarios in which tickets were sold, but the stadium was not allowed to be entered in the end. While fans are only annoyed but at least compensated, it looked worse for the suppliers. They organized staff and food in the shortest possible time, only to be unable to manage. Since Coronavirus is an influenza virus, there is seasonality here. This means that this virus is more active at certain times of the year, at colder times of the year than at warmer times of the year. This is also reflected in the incidences. During the warm months, the incidence decreased significantly, so most measures, except the mask requirement, were lifted. Capacity was also increased so that a large proportion of the spectator seats could be used again. With the introduction of vaccinations at the end of 2020, these also became mandatory to enter the stadium. However, the controls for this required additional resources and the process was delayed. However, this situation became a habit and also brought some disadvantages. While sales shrank manageably, direct employment was cut in half.

1.2. Further influence on Teams and their Fans

In the second year of the pandemic, the viral disease had become an integral part of society. Depending on the situation, it was decided which masses events could be attended. The focus shifted from the incidence to the hospitalization rate and thus to preventing hospital overload. Widespread vaccination also reduced fears of infection. However, new findings also led to ill-considered risks. Competitive athletes are trained to maximize the efficiency of their bodies. The biggest reason for long-term absenteeism was injury.

In most cases, it was impossible to predict how long the absence would last. The Covid virus, however, brought invisible problems. Through infection, there is the possibility of contracting Long Covid. With Long Covid, flu symptoms disappear entirely; however, issues of lung and taste remain (Robert Koch Institut, 2022). Even with the best possible isolation of the players and their handlers, the situation was often unmanageable. Various athletes with sufficient training and excellent preparation were absent for months due to lung problems.

Even after the symptoms had subsided, the lungs had to be trained again to continue their former performances. This could be dangerous for young up-and-coming players in

particular, as the healthy competition could continue to prove itself and thus also secure places. Thus, both the junior departments were weakened, and the players were still affected long-term. In individual cases, this went so far that careers were ended (Heinrich, 2022). At the pandemic's beginning, entire games were sometimes canceled due to teams falling ill. Later, it was necessary to reschedule because only individuals became unfit to play. The playing class did not play a role. Both small local clubs and global teams such as FC Bayern Munich had to cancel their matches. The significant difference, however, was the financial aspect. A professional club finances itself through its playing class with successful games. If several vital players fall out simultaneously, in the worst case, the usual performance can no longer be provided and thus go through defeats and elimination from importance. This means that necessary income is lost due to losses and elimination from essential tournaments (Gerstenberger, 2021). However, lung involvement was not the only symptom affected. In fewer cases but often more dangerous, heart muscle inflammation occurs. In addition to the end of the career, this can lead to severe restrictions in the further course of life. While lung problems become noticeable immediately after the infection has healed, this long-term consequence often does not become apparent until months later, (dpa, 2022).

Planning at the national and international levels became increasingly chaotic. Since these are usually closely linked, one failure can be enough to trigger a complete domino effect. If, for example, a match in the league does not take place, the make-up date can overlap with a tournament match and thus lead to all kinds of postponements. Later, the rules were changed so that teams no longer had to cancel games, but the reserve squad had to play. This did not happen so often due to the size of the regular crew, which usually has more than 23 players entered. So more than twice the number of players needed for a match. These players are roughly the same level, but if the reserve squad had to play, there could be significant problems. The reserve consists typically of young players brought up to a group of professionals. So these are, in the typical case, also inferior, and the competition is distorted.

In 2022, an additional event occurred, which led to a novelty in European football. Due to the conflict between Russia and Ukraine, the European Football Association allowed players in the Ukrainian league to terminate their contracts without notice and look for new clubs.

Thus, the fans had to deal with local restrictions, and the players and clubs had to deal with protracted illnesses and loss of money.

Gap in Research

Football, especially in Germany, is a very tricky concept. It only works in the long term if the folded-in factors function similarly. If no more fans exist, the revenue for admission and merchandising is lost. If no players can perform, the fans and TV money are gone. If the money is gone, liabilities can no longer be met, and licenses may not be issued. In typical cases, this system also runs without any significant concerns. The bubble of football even became bigger and bigger, and the prices rose immeasurably. The rapid onset of the pandemic and the high number of failures put this system at risk. Since it is of great relevance, especially for the labor market, everything had to be done to keep it running. At the same time, most Bundesliga clubs were already struggling with high levels of debt (Deutsche Fussball Liga, n.A.).

Regardless of the sporting pleasure, from an economic point of view, it is essential to deal with what has happened and create solutions for the future. Because the authorities in



many places are too sluggish, proactive action must be taken, and self-initiated concepts must be presented. Every aspect should be taken into account. Stadiums, for example, offer space for tens of thousands of spectators. A fraction could have been left in the stands with simplified digitalized processes. With a good perspective, it should be determined how to protect all parties involved and still not bring the business process to a standstill. This may not work without government support, so it is necessary to plan for precautions. With the current persistence of private consumer technology, new avenues are opening up. It must be discussed to what extent this can be incorporated and thus processes made more efficient. The question is how the pandemic would have gone for football if the state had adopted different concepts that relied more on digitization. To this end, two research questions have been developed in the following section.

2. Research Questions

- How can digitalization help companies get prepared for an impending crisis? Can digital solutions' integration help slow down the problem and keep the branches running with less loss?
- Is it possible to help the companies in need by using the newest standards and get faster solutions to end a crisis by working hand in hand (gov. & companies)?

Digitalization has undoubtedly made life and specific processes much more accessible. Many technical masterpieces have become so well established in our everyday lives that they have become standard for the user. While the first computers were as big as garages, smartphones, which are also many times more powerful, fit in your pocket. These benefits are seen not only in the private sector but much more commercial sector. Production processes are more precise due to digitalization; programs calculate stock levels and can act autonomously as soon as there is a shortage of stock, for example. There are specially developed robots that can work with superhuman precision and calm for specific tasks such as operations. Progress continues apace, with no end to innovation in sight.

Unlike other industries, there are several factors to consider here, as sports is an entertainment business. As mentioned in the previous chapters, it attracts several million viewers in Germany alone. Their safety must be guaranteed just as much as that of the players. It is no secret that Germany is often not updated regarding technology. Most public authorities still rely on the nerve-racking fax machine. Although the technical standard is much higher, it has not yet been implemented into social life. The sport itself is becoming more and more digital.

For one thing, virtually every game is streamed so you can watch them worldwide on all mobile devices. In addition, almost every major club has its app on the market, making it possible to get in closer contact with fans and collect their data to improve the experience if necessary. Tickets are also preferably sold online, saving much travel and making the process more convenient. It is also possible to purchase a credit card at the stadium, load it up from the comfort of your own home and then pay without cash and complications. The question is whether closer cooperation between the state and the clubs or their umbrella organization, the German Football Association, would have led to better concepts, at least domestically.

3. Discussion

Many interesting aspects have been pointed out in the previous chapters. It is clear that modern football is no longer just for entertainment but has become a lucrative international business model. Several billion euros are turned over yearly, and new jobs are created. If

these were to disappear, the economy would also suffer greatly. Even though the Corona pandemic was a novelty for society, it is essential to develop realistic concepts, especially for the future. Germany, with a population of more than 80 million, is certainly not only focused on football, but losing this focus would be a huge mistake. The problems are certainly not unique to the clubs, as they have little room to maneuver in difficult times.

Nevertheless, one should do everything possible within one's scope of action to become proactive and work out possible solutions. In the best case, a successful concept could first prove itself regionally and later establish itself internationally. It is well known that German official procedures are often very time-consuming. It is often said that the system is completely overloaded. Therefore, it is unsurprising that a state of chaos arises in unpredictable times, such as a pandemic. This affected not only football but all industries in Germany. Nor should the impression be created that some sectors were more affected than others. Of course, businesses that were essential for everyday survival remained open, but this is not comparable with the rest of the working world. The rules for managing the pandemic were created for individuals, not corporations. Only exceptions were made so that the necessary operations could continue. Due to the restrictions, severe economic limitations will be expected in the coming years. A wave of insolvencies cannot be ruled out either.

In general, there are many aspects to consider. They are starting with the athletes. Their everyday life revolves around sports; just as other employees work at least five times a week, they train here. The focus is on the body. If it is no longer as functional as before, you can no longer call up your performance and are overtaken by the competition. This scenario typically occurs in older players from the age of 35. If it wasn't because of advanced age, it was because of injuries. The two factors are specific and measurable without problems. Respiratory disease with possible long-term consequences is a different story. Humanity has few everyday infectious diseases with serious long-term consequences. Even though professional football has developed into a very successful business model, the focus is on the health of all players. Since heart muscle problems can occur in addition to lung limitations, this only complicates matters. After all, lung function is relatively easy to test, at least with the means available in Germany.

On the other hand, the diagnosis is precise and challenging to establish with myocarditis. If this is not recognized and the athlete pushes the limits, it can even lead to cardiac arrest. To avoid cardiac arrests, some international football associations even prohibit participation as soon as a pacemaker or defibrillator is inserted.

Therefore, in 2021, the contract between the Danish international and Christian Erikson and the Italian first division club Inter Milan was terminated. After a cardiac arrest on the pitch, Erikson had to be resuscitated and was subsequently fitted with a defibrillator. However, to continue playing in the Italian Serie A, the defibrillator would have had to be removed, and a doctor would also have had to confirm whether it could withstand the pressure without a foreign body (FAZ, 2021). However, the rules to best protect health vary from country to country, and each player has some personal responsibility. Erikson was able to continue his career with an English club.

Nevertheless, the leagues should take a closer look at the current situation and look for more profound solutions than the currently applied concepts. Even if risks can never be 100% ruled out, everything should be done to minimize them. Based on the current technology, we can see the possibilities—Apple's technology company scores with its smartwatch, chic design, and excellent functionality. While the first models, introduced in 2014, embodied more of the modern technical character of a smartwatch, the trend went



further and further into functionality. Thus, in addition to standard features such as the pedometer, other useful features such as the ECG. This meant that pre-chamber fibrillation could be detected ahead of time and treated by a doctor. The current models go even further, should the user fall and can no longer get up independently or ask for help, the watch detects the fall via its sensors and alerts emergency services in an emergency. In practice, this service has already saved the lives of many people. Now, a smartwatch certainly has many uninteresting functions for footballers and takes up too much space. Still, the industry should focus on the valuable parts and improve and implement them. If you compare games and their reports, it quickly becomes apparent that technology is already being used to provide live analysis alongside the games. For example, the paths of the individual players are tracked, and ball contacts, shots on goal, and duels won are also counted. In addition to the game, digital analysis of all events occurs. Based on the data obtained, measures are taken to increase the efficiency of the individual players in subsequent training sessions and thus improve the entire team. If you compare games and their reports, it quickly becomes apparent that technology is already being used to provide live analysis alongside the games. For example, the paths of the individual players are tracked, and ball contacts, shots on goal, and duels won are also counted. In addition to the game, digital analysis of all events occurs. Based on the data obtained, measures are taken to increase the efficiency of the individual players in subsequent training sessions and thus also upgrade the entire team. However, if data is already closely worked with, why are not methods developed in high-performance sports to warn as early indicators of diseases and injuries. As long as technical devices do not endanger the course of the game and do not increase the risk of injury for the wearer and bystanders, they are permissible for operation. So the question arises why such equipment is not already used during the games and training sessions. Under these circumstances, the risk would be prevented, and programmed algorithms could detect irregularities independently and transmit them to the responsible doctors.

In the previous chapters, it was already mentioned that, in addition to health, sport is also an important economic factor for Germany. If this contribution were to disappear, it would be reflected in our everyday lives. Unemployment would rise, and so would the country's social costs, and in turn, tax revenues would fall, creating a hole. It makes the impression, especially from a governmental point of view, that there has been too little concern about the long-term consequences of the action. The strategies applied were often without benefit and often not evidence-based. Operations were stopped abruptly at the beginning, while costs remained in the millions. For most clubs, which were already in debt, this could have meant insolvency. The current technology and future forecasts give reason to revise the concepts thoroughly. It must be possible to ensure the physical integrity of all without bringing the economic foundations to the club. The clubs were often brought to your limits. They have partly sold tickets under reservation because one was not sure whether the general rules do not change up to the playday. A reversal is costly and cumbersome if a game does not take place.

Of course, the decision-making power ultimately lies with the state and not the clubs, but the latter should also consider what damage has been caused by the ill-considered methods. In many fields, it looks like the authorities are not only understaffed but also miscast. Positions are partly led by people who have no relation to the subject. Most Bundesliga stadiums have capacities between 40,000 and 80,000 seats. Now it is clear that during a pandemic, social life cannot continue as it was before.

Nevertheless, it is also clear that for a healthy human psyche, a certain amount of social life must be present. Due to the capacity of the stages, it is possible to fill them so that no contact occurs. The Allianz Arena in Munich, for example, has a total of about 70,000 seats. These are distributed over 348 blocks. On average, each block has a distribution of about 200 seats.



Figure 3: Allocation of seats at Allianz Arena

If the stadium were only used to 20% capacity, this would correspond to about 14,000 spectators. Divided among the blocks, this would mean about 40 people per block. Due to the unroofed construction of the stadiums, there is always a breeze, and there is enough space to avoid critical contact. If we add the technical standard, the process is simplified many times. The booking process could, for example, run fully automatically online and look as follows. Seats are assigned automatically, vaccination certificates must also be submitted directly here, and only people from the same household are allowed to sit next to each other. This must also be checked. The validated and personalized tickets are only issued digitally and scanned at the entrance via mobile devices. To avoid dangers, food carts remain closed. Cheating is impossible since each seat is assigned to a person with a fixed name. Controlled and personalized entry also simplifies security checks. Thus, one has a cost reduction on the one hand and, on the other hand, can meet the fans and partially grant admission. The effort changes only minimally because the whole process takes place online.



4. Final Remarks

While most companies and industries have hardly any contact points with their stakeholders and shareholders, German soccer thrives on it. This may be both a blessing and a curse. The interests are more accessible to weigh due to the close contact of all parties involved, but the effort is also higher compared to other industries. In recent years, demand has risen continuously, mainly due to globalization and digitalization. The communities around the individual clubs have grown, as tracking on the Internet has become very easy. Games are broadcast in almost all languages: all advantages that benefit this and many other sports. But in addition to the experience offered to spectators and fans, entire supply & production chains have been created. These sometimes go so far that they have become dependent on the respective industry. Now, dependence is not always advantageous, but in football usually not a big problem because the demand is constant and has even increased in recent years. If a part of the supply chain now falls away, the complete turnover of the supplier also falls away. Take food trucks in arenas, for example. The staff existed even before the pandemic, and usually, fixed costs were incurred. The reserves generated in the best case can bridge the first few months, but this again creates a financial hole for further failures. The state has developed solutions for losses, but these were short-term and involved much bureaucracy.

Moreover, an indebted state lends money that it needs itself. In the long run, this is not a good situation for anyone involved. Too large a flow of money would only lead to inflation, which would cause more economic damage than the pandemic. Solutions and incentives must be created collectively between clubs and the state to keep the sport alive. For this to happen, however, the form and its function must also become more cooperative and agile. Cooperation alone is not enough if implementation takes too long. In such scenarios, every possibility must be used to manage the crisis quickly and as best as possible. The use of technology also leaves a lot to be desired here. It has been used minimally to validate the vaccination status and track the location. The development of these applications alone has cost millions and taken months. However, one should also see the positive in all the negative. The pandemic created further contact points with the latest technology and paved the way for future development. Much of what has been established since 2020 could be improved in the future and continue to be used in everyday life. Cooperation with existing tech companies should be intensified. The individual associations should consider obligations for the players, which serve their health due to the increasing challenging disease courses. In contrast to many other technical aids that have been introduced, such as the goal-line assistant or video evidence, devices with a monitoring function would positively affect the players.

The list in the previous chapter also shows that it is possible to aim for a comparatively light utilization of stadiums even in severe pandemic periods. This would be associated with hardly any hurdles and would increase attractiveness. Under these circumstances, revenue would be generated, fans would be partially satisfied, and games would continue to be played.

On the whole, it can be said that players cannot avoid negative testing, but with the help of digitization, the risk of severe long-term consequences can be minimized. The clubs themselves can, if the state cooperates, continue their usual activities to a lesser extent and, with a good concept, it is also possible to enable spectators to watch the games.

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