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Anatasia: *One of the most changing industries today is undoubtedly the IT sector. In our lives, we use intermediaries to fulfill many of our needs and get our work done. It is predicted that in the coming years we will not use people and institutions as middlemen to do our work and this will happen because of Blockchain. Nowadays, we make purchase, payment and receipt transactions online. This stage constitutes the beginning of the blockchain. A blockchain is a software that can act as a digital data store that can hide and view the information in it, either open to all users on the network or private to the user. blockchain; It's a system that records data in ten-minute blocks, hence the name. This system can also be effectively used in the sports industry. Thanks to the system, faster and more direct contracts are concluded between players and clubs instead of traditional contracts, tickets for gyms and stadium seats are paid online, hooligans are banned from stadiums is controlled. With this structure, it is possible to archive items in the sports sector, prevent counterfeit products on the market, and keep organizations' information up to date. Digital (e-sports) tournaments and sports organizations can be aligned with blockchain, providing financial returns and rewards to e-athletes and organizers. Blockchain can be used to secure data for all equipment, athletes, coaches and facilities in the industry.*

Keywords: *blockchain, digital, e-sports, sports, technology, movement, physical education.*

Enter

In our current age, which is called the information age in many sources, the largest share is undoubtedly related to technological changes and cross-industry interactions. In particular, the production of hardware and software products made a great contribution to the development of the industry. Technology is one of the most important means of social progress and development.

The extraordinary changes in the field of technology have affected the field of sports, as in every field, and led to the emergence of new developments. Sports have always existed in human life. With the impact of every development in the world, the interaction of sports with various disciplines is inevitable. This situation expanded the scope of the sports field. Due to economic crises, orientation to new industries and the need for an alternative structure to banks, a new system of economic structure has emerged. As a result, the concept of blockchain (Blockchain) was born, creating a secure environment by conceptualizing it with cryptocurrency and artificial intelligence.

Considering the mechanisms and algorithms that perform transactions, and the computer software and hardware that ensure the continuity of the system, cryptocurrencies are a common subject of research in mathematics and information technology.

It is predicted that in the second quarter of the 21st century, blockchain technology will be widely used in many industries and will make great contributions both economically and in terms of data exchange. This study defines the concept of blockchain and explains the transaction method, scope and recommendations for the use of blockchain in sports.

Blockchain concept, definition and importance

Blockchain is a term that has been thrown around a lot in the digital space in recent years. The accepted economic order in the world has a structure based on the exchange of a universally accepted measure of value (money) with a product, service or other value.

Blockchain works as a "transaction technology" that eliminates the need for any intermediary with absolute accuracy. In the operating system, each element of the list points to the next element with a pointer procedure. Thus, all the elements of the list, from the start element to the tail element, are linked together. Such files, in which records are stored and cannot be deleted or changed, are called blocks. Because the blocks are connected to each other in the form of chain links, this structure is called "Block Chain". Due to the chain structure, all blocks from the first starting block to the last block of the transaction are interconnected. Data security is above average as high security encryption is applied to all transactions. In the blockchain structure, each block not only points to the next block, but also stores the hash value of that block.

The system works as a digital data warehouse. The information in it can be hidden and made public to all users or displayed privately to network or users. This process is similar to sharing posts publicly or with a specific group or people on Facebook, one of the most used social media applications today. The difference between blockchain and other applications is that new data is instantly transmitted to all network users in the desired network, and a copy of the data is available to other users. This is where the blockchain gets its name. Software developers examine and process blocks on the network with their advanced computers. Every detail of the processed blocks can be seen by authorized users on the network and all users have absolutely binding and valid proof. Thus, it appears that a secure structure has been created by eliminating the middleman.

We solve most of our daily needs through intermediaries (interfaces). Changing currencies also changes the economy. In parallel, the Internet has now digitized our wallets and money. The most profitable investment vehicles are no longer notes, land, houses or cars. Financial and accounting operations of business entities operating as individuals and legal entities are carried out by financial consultants, money transfers

and electronic money transfers (EFT) by banks, and certification, verification, protest, warning and confirmation operations are carried out by notaries. In earlier times, there were credit books for purchases from small and medium-sized commercial enterprises (grocery stores or markets). Debts and payments are recorded in this book, and then the payer is given a receipt confirming the completion of the transaction. With the advancement of information technology, these books have been transferred to computers and credit cards. Today, payments and receipts in online shopping transactions form the initial phase of the blockchain. Thanks to the advancements and changes in information technology, it is predicted that in the coming years, we will no longer use people and institutions as intermediaries to do our work, and this will happen thanks to blockchain.

Blockchain technology has the potential to impact the social, economic and public spheres. Blockchain can also be used in education to store records such as educational documents and certificates.

On April 10, 2018, 22 EU member states signed the European Blockchain Cooperation Agreement. The signed agreement aims to position Europe as a world leader in the field of blockchain, support member countries in the preparation of blockchain-based applications, exchange experiences and create new jobs by supporting the public and private sectors. In addition, it is planned to allocate a budget of 300 million euros for the implementation of activities. This suggests that blockchain applications will continue to proliferate in the near future.

Sports sector

Today, sport is considered as an important service area with the qualities of protecting and strengthening personal and social health. It is a research subject of business management and sports management, both with the volume of service production and with the production and consumption sectors of goods. As a result of industrialization, the development of the service sector, the information age and rapid urbanization, the development of collective living culture and social structure has gradually acquired different characteristics. All the economic and social changes of the modern world are also visible in sports organizations and organizations. The sports industry is the name of the market that offers consumers sports, fitness, recreation, leisure and related products, services, people, places and ideas. Modern market economy, the laws of commodity circulation, the principles of production-consumption, demand-supply define life step by step, but in some sense, in addition to defining its principles, they also paved the way for sports.

It can be seen that the sports industry, with its units of production and consumption, addresses a wide range of sports-related industries. As in all industries, data is the most important resource in sports. Therefore, data storage, accessibility and security are of great importance. Since many users need to access data at the same time, it is important that the bandwidth is high and available.

Evaluating potential blockchain applications in the sports industry

As people's sources of income are increasing day by day, their standard of living has also changed. The implementation of e-government applications in public institutions and the provision of information in a certain order reduced the economic costs, and saved thousands of trees cut down for paper production. Courthouse, bank, public, hospital, police, registry office and similar public and private sector applications are blockchain applications where electronic system is used. Sport appeals to all sections of society and unites many people and networks. For people to go beyond just exercise practice for healthy living; It has a sectoral dimension such as marketing, manufacturing, advertising, entertainment, technology, leisure, consumption and investment. In this sense, the biggest share belongs to technology. Blockchain is an innovation that comes with technology. This technology aims to bring innovation, cost reduction, archiving, forward-looking analysis and data security to the highest level in the sports industry.

In general, the use of blockchain technology in sports is presented in the following subsections.

- **Archiving;** In the sports industry, the use of blockchain to record and archive inventory such as players, managers, referees, teams, equipment, arenas, associations, members, taxes, advertising and sponsorships is of great importance. In this way, it guides the way from the past to the future by shining a safe light.

- **Economic benefit and reward;** The high demand and supply in the field of sports made it possible to form a large economic structure. Huge budgets are spent on processes from design to completion of all activities and organizations in the field. Blockchain application is used to record and analyze the economic structure in the sector and keep it secure by linking it to other sectors. Controlling the income-expenditure and taxation transactions of elements such as athletes, clubs, organization products in the sector and their proper accounting in a secure way can be done with the help of blockchain. Determining the market value and earnings of athletes and clubs can be secured using blockchain. In addition, digital (e-sports) tournaments and sports organizations can be compatible with the blockchain and provide status, financial income and rewards to e-athletes and organizers.

- **Digital gaming industry;** Eloplay, a digital gaming and e-sports platform, enables player-created teams to organize tournaments in a digital environment.

- **Public offering stock transactions;** When companies that own sports clubs offer their shares to the public, they finance their clubs. Blockchain monitoring and detailed analysis of the shares sold in the public offering of products and services of sports companies in the sector will provide insight and incentives to partners who want to buy shares.

- **Teaching and selection of teachers;** The use of blockchain in sports and games-based learning systems, which are also used as educational tools, to create a database for

teachers to match branches in the sector and to select teachers according to the type of education.

- Prevention of violence; The implementation of fair play, ethics and non-violence rules in sports minimizes the margin for error by creating a more controlled structure thanks to blockchain.

- Using a block chain structure to prevent injuries and wrong actions from the beginning of the activity and the end of the physical activity practices, which are carried out in a certain order,

- Secure data collection; Obtain secure data by encoding statistics of athletes, arenas, coaches, spectators, products and consumables in the sector through artificial intelligence.

- Smart contracts; Create smart contracts between players and clubs that replace traditional contracts, faster and without intermediaries.

- Athlete selection; Because data is open when using blockchain applications, fans and teams following athletes on the network can securely access data such as athlete records, performances, and injuries without requiring any budget. In addition, by identifying risk maps for athlete injury, baseline information can be generated to communicate athlete health dos and don'ts to athletes and select appropriate training and preparation methods. . This app helps coaches to prioritize players and determine game strategy.

- In infrastructure-related activities; Train athletes and ensure continuity by studying tried and tested infrastructure examples and classifying and implementing all infrastructure training phases for affiliates with blockchain structures,

- Convenience; Sports fields and facilities are the most important elements of sports. The fact that these areas are sufficient in terms of personnel in our country is a natural result from the point of view of the increase in the number of people involved in sports. In this sense, the diversification and registration of objects, the updating of information, the determination and exchange of tariffs for one person, as well as the notification of decision-makers and investors on this issue are the most secure thanks to the blockchain. ladi

Summary

Due to the high security features and encryption methods, blockchains cannot be broken by existing methods. They are not centralized, which is the biggest factor that makes them secure. Every change in the blockchain must be approved by the network. This process is carried out with the consent of several computers, which becomes an important advantage from the point of view of security. A good infrastructure, both hardware and software, with high technical capabilities is required to implement a blockchain structure. While blockchain creates a secure framework, it should not be expected to solve and eliminate problems in every industry and should be seen as a secure foundation.

As a product of the information age, technology and blockchain developments are monitored and implemented by individuals, institutions and countries that have a say in this area and benefit themselves greatly in every matter. The immediate future of the Internet is that most transactions will occur between two individuals or between individuals and institutions. The founders of the game, who are seriously interested in this area, say that we have witnessed only a small part of what blockchain can do. Blockchain usage scenarios can be expanded from education to health, from cyber security to official transactions, from commerce to sports. In sports, as in any field, there is a continuous structure that continues from the past to the future. Thanks to the blockchain, in addition to reducing the cost of data collection, a secure structure is also provided. In the coming years, everyone will need to take financial literacy training and improve themselves on blockchains.

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