

# Research on Application of Computer Artificial Intelligence Technology in Analyzing the Economy of Pre-sale of Sports Tickets

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**Abstract.** The sports industry is an important part of the modern service industry, a new economic growth point and an important carrier for promoting social employment, and the pre-sale of tickets is at the forefront of the sports industry chain. In the future, the sports industry must also be an important force to help the country overcome the middle-income trap and promote urban economic development. Precise analysis of the front-end of sports ticket pre-sales through computer artificial intelligence technology can effectively improve the quality of the back-end sports products and service supply system, promote the precision services of the sports economy and the integration of related industries, and deepen the supply-side reform of the sports industry. The sports industry in the new era has continued, healthy and rapid development.

**Keywords:** Sports competition, Ticket pre-sale, Sports economy.

## 1. Introduction

The upgrade of sports consumption leads the innovation of sports supply, the promotion of sports supply and the creation of new growth points for sports consumption, thereby continuously strengthening the circulation of sports development, presenting a higher level of balance between supply and demand, and continuously satisfying the people's growing needs for a better life. Intelligent technology is constantly emerging with new technologies, new equipment and new ideas. Through the analysis and judgment of the pre-sale of sports tickets. It can accurately predict the spending power and preferences of consumer groups, and make accurate predictions on the accommodation, catering and tourism industries, and the sales of derivative products where the competition is located. It has irreplaceable effect and influence on the promotion of the competition economy and the prediction of related institutions [1].

## 2. The status quo of research on the economics of sports competitions by computer artificial intelligence technology

### 2.1. Trend Research

Some researchers have studied the development trend of sports ticket pre-sale methods under the background of computer artificial intelligence, and selected sporting goods as the main research object, and summarized the current development trend of the sports ticket pre-sale industry: it can be said that offline and online ticket pre-sales The integration of sales is the primary feature of the future ticket pre-sale methods in the industry; for a long period of time in the future, self-media ticket pre-sales will occupy a major position in the sports ticket pre-sale methods; one of the favorable conditions brought by artificial intelligence is information The speed of transmission can further enhance the extensive blending of cultures; the role of big data in the ticket pre-sale process of sporting goods companies is getting more and more attention. The audience has more freedom and richer choices in the new media environment, and generally shows higher enthusiasm. In this context, the event organizer can break through the limitations of time and space, through ubiquitous self-exhibitions, and have a variety of profound connections with consumers, whether it is brand logos,

slogans, classic products, corporate stories, etc. Things related to the event can be displayed through the media, and the terminal penetrates into the lives of consumers and gains market recognition[2].

## 2.2. Research on Ticket Pre-sale Strategy

Aiming at the characteristics of computer artificial intelligence, it analyzes the ticket pre-sale strategy of sports companies, in order to improve the efficiency of sports companies' ticket pre-sales under the background of computer artificial intelligence. Current sports ticket pre-sales under the background of computer artificial intelligence, sports enterprise ticket pre-sales present the following characteristics: computer artificial intelligence has become the main means of enterprise product ticket pre-sale and publicity; sports companies have a distinct industrialization; and brand effects are strong. The research on the sports ticket pre-sale strategy puts forward relevant countermeasures: In the context of computer artificial intelligence, sports companies first use sports sponsorship activities to promote the image of sports companies and social popularity through computer artificial intelligence, and at the same time confirm sports from the side. Enterprise strength; establish an image spokesperson under the background of computer artificial intelligence; develop designated products under the background of computer artificial intelligence; increase advertising and publicity under the background of computer artificial intelligence. The proposals of these several strategies emphasize specific measures in the computer artificial intelligence environment. His research describes the characteristics of current audiences using media, and believes that the phenomenon of "fragmentation" and "diversification of channels" will be the main factors affecting the pre-sale strategy of sports tickets in the new era[3].The statistical analysis of the data is shown in Figure 1.

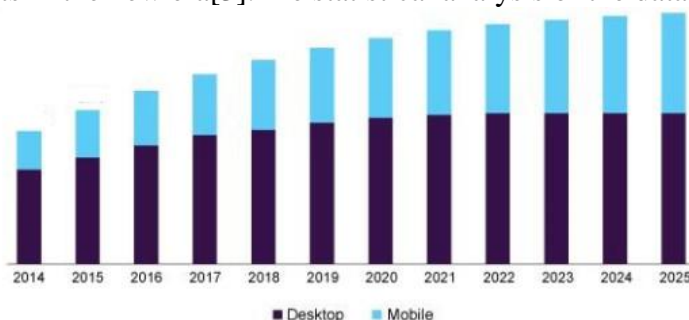


Figure 1. Analysis of online sales trends of national sports tickets

## 2.3. Research on Sports Communication Mode

Discuss the environmental impact of new media on the pre-sales of tickets for large-scale sports events. In the face of changes in the ticket pre-sale environment, "integrated ticket pre-sale" has received much attention due to its adaptability and the importance of two-way interaction with consumers. Looking back on the research, it is found that the traditional ticket pre-sale theory is still used to construct the sports event ticket pre-sale, integration and dissemination are not emphasized, and there are not many researches in the field of sports. By analyzing the new media communication strategies of national sports events, it can be seen that new media such as the Internet, mobile phones, digital TV, and social media such as Weibo and WeChat are one of the main media tools that promote the diversification of sports ticket pre-sale methods. The new media communication strategy of sports events requires a more adaptable ticket pre-sale plan to maintain the sustainable development of large-scale sports events, and uses the characteristics of integrated ticket pre-sale communication theory to try to construct a new ticket pre-sale model for large-scale sports events . Analyzing the Beijing Olympics as a research case, it is found that the main ticket pre-sale methods of the Beijing Olympics are: sponsorship, tickets, franchise tickets and franchising. Research tools include the Internet, mobile phones, new social media, etc., combined with advertising and public relations to form online events such as event ticket pre-sales, direct ticket pre-sales, and promotions, taking into account comprehensiveness, diversity and integration, and at the same time, media integration On the one hand, it was found that the effect of pre-sales of tickets for the Beijing Olympics was consistent, but

the effect of pre-sales of tickets was not satisfactory. Considering that the platform for pre-sales of tickets for the Beijing Olympics is broader, it is necessary to propose a more suitable for large-scale sports event ticket pre-sales and dissemination[4].

### 3. The impact of artificial intelligence on the game ticket industry

#### 3.1. Promote the development of the game ticket industry

The rapid development of artificial intelligence has played a very important role in promoting the development of the game ticket industry. Because of the communication characteristics of new media and the increasing preference of audiences for watching sports games, this will definitely promote the development of the industry. The role of intelligence in promoting the game ticket industry, and the vigorous development of the sports industry, has provided a wide range of resources for the game ticket industry. The advancement of artificial intelligence has provided technical support for the game ticket industry. With the support of Internet technology, new media technology has also been continuously improved, and the coverage of artificial intelligence has continued to increase, and it is more acceptable to the audience in the depth of coverage. The characteristics of full coverage, immediacy and diversity of communication channels of artificial intelligence are well received by audiences. Therefore, more and more audiences use artificial intelligence to watch sports events. This not only promotes the vigorous development of the sports industry, but also ultimately will actively promote the development of the game ticket industry. The sports ticket online sales system is shown in Figure 2, where the dotted line is the implementation

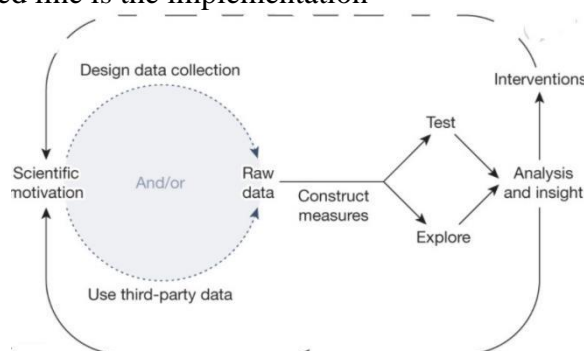


Figure 2. Research on the online sales system of sports tickets

#### 3.2. Realize a powerful user interaction platform

User interaction is one of the important features of smart ticket pre-sale analysis, which enables users to evaluate the results of the game, communicate between users, and in the process of live broadcast. It also realizes the interaction between the user and the host, and the expert, which enables users to have a deeper understanding of live events, and enables fans to express their views and opinions on the game, thereby enhancing the audience's initiative in obtaining relevant events and activities. Enhance the user's interest in watching the game. At present, intelligent ticket pre-sale analysis has established a professional network platform in order to meet the needs of users. These mainly include professional live broadcast rooms, event news and online forums, event forums, etc., and smart ticket pre-sale analysis can also use your own official website, WeChat and other communication tools to widely spread the focus of sports events, thereby achieving wide-ranging The purpose of the announcement is that the smart ticket pre-sale analysis can gain millions of users in a short period of time, which shows that the current smart ticket pre-sale analysis has a very good marketing effect.

## **4. Sophisticated big data analysis**

At present, the reason for the successful pre-sale of sports tickets is inseparable from its accurate and powerful data analysis. It accurately seeks brand partners through the age, gender, hobbies, and product needs of users, so as to bring benefits to customers, and of course, it can also benefit sports organizers.

### **4.1. Accurately understand user characteristics**

Sports event organizers often analyze the basic characteristics of their users to understand their users' gender, age, interests, and the time and frequency of annual live events. A successful marketing must have a thorough understanding of their users. And artificial intelligence big data analysis provides a preliminary foundation for launching commercial products and seeking cooperative brands by understanding the basic characteristics of users. According to the understanding of users' personality and interests, sports competition marketing agencies can accurately adopt the form of broadcasting, media, and continuous optimization of their own webcasts and forums, so as to continuously meet the needs of their users and stay with them. Get a good reputation and provide a solid foundation for expanding users in the next step.

### **4.2. Accurately analyze user consumption trends**

There are many ways for the marketing department to make money. It not only needs to conduct marketing for its own webcasts and forums to realize the value-added of its user members, but also for its own partners to obtain greater economic benefits for their partners. Responsible, this must understand the consumption characteristics, purchasing power, etc. of its users, and analyze relevant data, and creatively design the commercial advertisements of partners, which is consistent with the consumer desires, so as to stimulate the consumer desires, plus My own understanding of the basic situation of the user group lays a solid foundation for the sports event organizers to accurately place advertisements in the next step, which is also an important reason for the success of related marketing.

### **4.3. Accurately analyze the user's game watching habits**

Analyze the audience's habit of watching sports games. For example, it is found that the habit of eating while watching is the majority. Or there are scenes such as working, drinking tea, chatting, and interacting with the scene. After understanding user habits, you can provide references for optimizing online live broadcasts and other forms. It can also provide a basis for event organizers to seek their own business partners to accurately place advertisements to audiences. Only when the partners gain benefits can the event organizers profit from it. Understanding user habits through big data has become the key to sports ticket marketing in the new era.

### **4.4. Accurately analyze user needs for products**

For sports organizers, only by understanding the needs of potential ticket buyers for the event can they be able to more accurately seek their own partners. Collect data on consumption habits, product hobbies, consumption ability and other data of its users, and seek partners on this basis. Now relevant competition agencies are cooperating with shoes, games, automobiles and other industries, and have achieved very good results. Through the in-depth analysis of the user's product needs and the precise segmentation of users, the partners have achieved the positive and aspirational purpose of marketing through related event agencies. Of course, this is also an important marketing method for its own marketing. As many as dozens of brands have cooperated with related competition agencies, which also brings a lot of advertising revenue to related competition agencies.

### **4.5. Investigate the user's area**

On the basis of understanding the basic characteristics of their ticket purchasers, the relevant event organizations further analyzed the user's area, and the results showed that in first- and second-tier

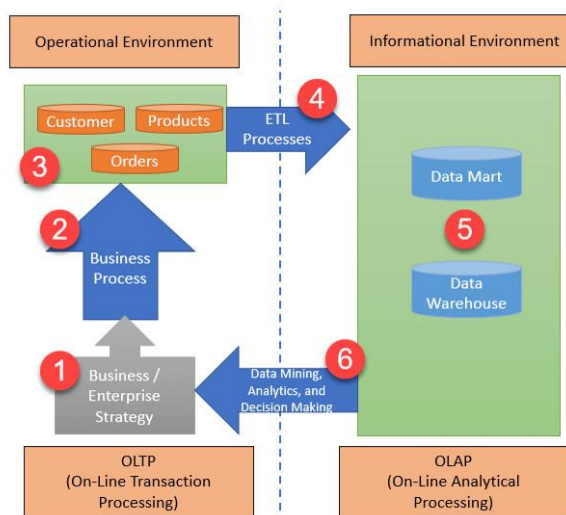
cities, the proportion of live broadcast groups is higher than that of residents in small cities. The citizens of first- and second-tier cities have stronger purchasing power than other users. Therefore, relevant event agencies have begun to invest in high-end products, such as cars and other luxury goods, which will greatly help them increase their marketing profits.

**4.6. Analyze the way for spectators to reach the competition venue**

Related event organizations not only include live broadcasts, but also community forums, webcasts, etc. The reason why the relevant event agencies have established a variety of channels for the dissemination of event information is also based on user surveys. For the content of their own ticket booking platform, event previews and ticket booking web options, they use artificial intelligence to analyze audiences arriving at the game. The traffic preferences and consumption habits of the venues lay a solid foundation for related traffic advertising cooperation. By expanding the competition of the sports platform, it has realized the comprehensiveness of its own marketing functions.

**4.7. Understand that the pre-sale crowd pays attention to derivative products**

Based on event forecasts and Internet live broadcasts as the core, relevant event organizations have also successively developed some derivative products, such as games, portals, and commodity platforms, which have greatly helped their marketing efficiency. The development of a series of extended products by relevant competition organizations is to understand the needs of users for the official redevelopment of the competition based on big data investigation and analysis, so as to creatively develop some products related to competition varieties and players. On the basis of satisfying the individual needs of users, these products provide considerable help for realizing the improvement of their own marketing efficiency. At present, users can obtain more related services through the ticket booking platform, which is very necessary to increase the loyalty of users to participating in the event and expand the number of users. The application of computer big data technology in the sports ticket online sales system is shown in Figure 3.



**Figure 3.** Research on Sports Ticket Online Sales System Based on Computer Technology

**4.8. Investigate the pre-sale crowd's perception of commercial advertising**

In the event preview, the online ticket pre-sale platform analyzes the commercial advertisements displayed by the audience on the platform. Through research, it was discovered whether any fans expressed their desire to buy sports events and commercial advertisements displayed on live webcasts. On this basis, the event organizer further understands the needs of customers for products, and makes refined classifications to understand the needs of different groups, different regions, etc., for different products, so as to put relevant products in various sections. Compatible commercial advertisements are very helpful for improving the marketing efficiency of advertisements. On the one hand, it can

drive other brands to cooperate with the event organizer, on the other hand, it can also bring greater benefits to the event network platform, achieving the purpose of improving marketing efficiency. Accurate analysis of data allows the audience of relevant events to increase quickly and accurately. So as to achieve the goal of good marketing effects. The trend of computer intelligence in sports tickets.

#### **4.9. Accurate placement brings good brand effect**

Although the development of the sports marketing industry in the context of new media faces greater challenges, in the course of competition, brand effects and sports marketing leaders have also been formed, which will provide a great help to the future development of the sports marketing industry. For example, Tencent sports platform, Chinese Super League, La Liga, CBA live broadcast of sports events, wonderful video clips and self-media communication.

#### **4.10. Cooperation opportunities brought by diversified media competition**

Now sports marketing is not only a competition between event organizers, but also a competition between new media and traditional media. Traditional media, such as CCTV5, use strong coverage, high-quality advertising production technology and loyal audiences to maintain its position in sports marketing. One of the strong competitions in sports marketing is traditional media. Of course, in the process of sports marketing, the competition among new media is also very fierce. Some event marketing agencies have bought out the rights of domestic webcasting, but they are facing competition from large-scale websites such as Sina, Hupu, Netease and Sohu in terms of wonderful video editing, event results transmission, celebrity dynamic reports, and player market reports.

### **5. Conclusion**

Under the background of the development of artificial intelligence, sports marketing has developed into an industry, which is of great value for promoting the overall development of the sports industry, watching sports events live for sports fans, and realizing the new development model of Internet + sports. And cross-domain sports marketing under the artificial intelligence environment has diversified the marketing methods of sports event tickets, which is of great value for the sustainable development of the sports industry. With more and more large-scale sports event companies participating in sports big data precision marketing, they are also facing fierce competition. In the competition, there is also market integration, which helps to improve the level of sports marketing. Of course, sports marketing also brings a series of benefits to the audience.

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### **References**

- [1] L. Yingzi. A Comparative Study on the Marketing Communication Methods of NBA and CBA. Beijing Sport University. 16(3) (2020) 111-119.
- [2] W. Mingjie, L. Siwei, Z. Wen. The development status and trend of national sports marketing under the background of new media. Modern Communication-Journal of Communication University of China 20(4) (2020) 25-29.
- [3] L. Meng. Research on the development trend of sports marketing methods under the background of the new media era. China Sports Industry and Sports Goods Industry Development Forum 12(6) (2019) 120-125.
- [4] M. Xuekun. Sports marketing strategy under the background of new media. Times Finance, February 11(2) (2018) 136-139.