

Simulation Analysis of Sports Events Information Service System

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Abstract: Through internet retrieval and relevant literature analysis, this paper found that: at present, domestic and international research literature on sports events information platform is very scarce. It is basically in the blank. Especially the basic research on the construction of sports events information platform, such as: scopes, classifications and standards research of sports events information resources, design patterns of sports events information platform system, system framework and architecture, the related research literature is difficult to find. This study aimed at the above status of research on current sports information platform system, proposed a simulation analysis of sports events information platform system oriented to scientific research of sports events and decision support, and based on Multi-Agent technology.

Keywords: Sports Events; Information Services; System Simulation

1. Introduction

Through internet retrieval and relevant literature analysis, this paper found that: at present, domestic and international research literature on sports events information platform is very scarce. It is basically in the blank. Especially the basic research on the construction of sports events information platform, such as: scopes, classifications and standards research of sports events information resources, design patterns of sports events information platform system, system framework and architecture, the related research literature is difficult to find. Domestic construction of sports events information platform is also relatively weak. Currently, most of the existing domestic sports-related information systems are just some aspects of sports events or sports events for a specific sport and design, and designs are more concerned about the construction of a relational database, such as, sports events video library, soccer World Cup database. But overlook the very important and very basic part in sports information platform construction, the systematic classification of sports information resources and overall planning; and system framework of sports information platform; design model of sports information platform system; systematic planning of sports information platform as a whole database and design studies^[1-4].

2. Research Status Quo of Sports Events Information Platform

Existing information systems of sports events classification have the following characteristics: In the planning of the system overall function, the existing information plat-

form system of sports events classification can query the contents all for information. Thus, the demand for information can't be customer-oriented customization and output in line with user preferences information; 2) the existing sports class information platform is for all users of the crowd audience sports events. Few of information studies systems for the event. 3) in the existing information platform system of sports events, the contents planning is directed at some aspects of sport or sports events of a sport, lack of comprehensive information of sports events related to the systematic. For example, for a sports game, main message can be found on the website is basically the sports competition schedule, results information.

3. Research Results

3.1. Requirements Analysis of Sports Events Information Platform System

According to user needs, sports information platform should be a comprehensive information platform able to share, integrate sports-related literature, pictures, video, network information and other resources at all levels of information, and further data mining on the vast resources of sports information. This integrated information platform should meet the following functional requirements: (1) timely, automatically collect, mine sports-related information resources at all levels; (2) support establishment of all kinds of sports information systems and decision support systems; (3) through data mining to obtain competitive intelligence related to sports events; (4) focus on customer needs and preferences to provide

information. (5) major users are research related personnel engaged in sports events, organizations, sports decision-makers, as well as information agent related to sports service.

3.2. Demand Analysis of Information Resources of Sports Information Platform System

In the sports events information platform, divide by subtypes of sports events information resources, should include four types of information: first, sports-related literature resources; second, sports-related network information resources; third, sports events related pictures resources; fourth, sports-related images and video resources. These information resources based on different aspects of sports events can be divided into the following categories:

Sports organization and management information; sports scores and results information; sports news and information; sports marketing information; sports events hold and planning information; sports lottery information; policies and regulations on sports events; sports venues and facilities information.

3.3. Sports Classification and Information Coding Analysis in the Sports events Information Platform System

The author according to the demand of sports information platform system, and through the relevant literature analysis and expert research, studied classification of sports events, and according to sports events classification, design information encoding. Sports information encoded design used mixed classification, information coding design of sports events classification are 21-bit codes. Coding structure is based on bit segment coding, each bit segment represents a hierarchical classification or combination concept. Each bit segment can include a bit or more digits, all use numerical order coding method. Specific information codes are as follows:

Section 1: level of sports events, 1 - the world; 2-- inter-continental; 3 - state; 4-- place; 0 - other. Section 2: the nature of sports events 1,1 - comprehensive; 2-- individual; 3 - League, 0 - other. Section 3: the nature of sports events, 1 - professional, 2 - amateur, 0 - other. Section 4: the nature of sports events, 1 - public, 2 - commercial, 3 - other. Section 5: the nature of sports events, 1 - Games; 2 - Championship; 3 - Cup; 4-- Invitational; 5-- Tournament; 6-- level competition; 7-- Open; 8-- communication game; 9-- League; 0 - Other. Section 6: the nature of sports events, 1- groups; 2 - personal; 3 - comprehensive; 4-- other. Section 7: age of sports events, 1 - comprehensive; 2-- adults; 3 - young; 4-- juvenile; 5--adolescence ; 6-- elderly; 7--others. Section 8: participant gender of sports events, 1 - male; 2-- female; 3 - comprehensive.

Section 9, 10, 11: sports events category. According to the Chinese Library Classification. Section 12: participants attribute of sports events , 1- student; 2-- farmers; 3

- workers; 4-- minorities; 5-- other. Section 13: participants attribute of sports events, 1 - normal; 2-- disabled people; 3 - Other. Section 14: hold season of sports events, 1 - spring; 2-- summer; 3 - autumn; 4-- winter. Section 15: incentives of sports events, 1 - points; 2-- bonus; 3 - Other. Section 16, 17, 18: sports events session times, three digits. Up to 999 sessions. Section 19, 20, 21: name category of sports events, three digits. Can include 1000 kinds of events.

3.4 The Application Analysis of Multi-Agent Technology in Sporting Event Platform Information.

Agent in English is intended to "agent" "agency" meaning, in artificial intelligence research, often translated as "intelligent agent", "subject" and so on. Multi-Agent technology development comes from a branch of artificial intelligence --- a distributed artificial intelligence. The method of multi-Agent technology to solve the problem is to decompose the software system into multiple program fragments or Agent. Each program fragment or Agent has a separate division, and collaborates to complete the function of the system. The emergency and development of agent technology is not only enriched the content of artificial intelligence research, but also provides a new way for complex software systems analysis, design and implementation, it is known as the "another major breakthrough of software development"^[5-10]. So that Agent detached out form a specific technical solution, become a software development way of thinking.

In this paper, the sports information platform system is a complex software system by collaboration between multiple functional modules, it has the following main characteristics:

(1) Has a complex structure, the system can be decomposed into a number of related subsystems. In information platform of the sports events, contains multiple types of, multi-level, multi-dimensional sports-related information aimed at one sport, which are independent and inter-related, therefore, in the collection of information, identification, classification process, it should be possible to decompose the complex system functions, therefore, the use of multi-Agent technology to build Multi-Agent software applications, can not only better for the decomposition of the subsystems independently design and development, but also design multiple Agent interaction and mutual collaboration relations^[11]. (2) Sports information platform system designed in this article is a complex software system. Because sports information resources requirements of this information platform will depend on the sport market, and continue to carry out development and change, the initial establishment will continue to evolve with the evolution of the system. Therefore, the design of the sports information platform function of the system should be able to continue to develop as needs change, with a certain degree of adaptability. Therefore, this paper used Multi-Agent in the design

of architecture, components can be the same as the management of each Agent, when developing a new feature Agent, Agent management subsystem can be added, modified. Agent of unwanted features can be disabled or even removed. This will be conducive to improving suitability of sports information platform system ^[12]. (3) Sports events information platform is a complex software system. The system has many features. The role of each function is not the same. And each function is not completely unrelated other functions. It will need to complete its function with other functions of the job. Various subsystems in sports information platform only can complete the function of the system by continue to function mutual coordination and cooperation. It's like a company, all of the work can't be done by only one person as the same. The realization of all business functions, needs to set a number of relevant departments to work together, jointly with the job. And here, sports information platform sys-

tem can be assimilated to a company, its systems in the various sub-functions can be assimilated to all sectors in enterprises. Therefore ^[13], this paper used Multi-Agent in the design of architecture, each Agent is equivalent to the enterprise, a division of Multi-Agent through the ongoing collaboration and cooperation, strong in the sports information platform to optimize the entire system architecture. Therefore, in terms of development sports events information system platform with the characteristics of complex software systems, use multi-Agent technology in its system architecture, can effectively break down complex software systems, simplifying the development effort. At the same time, due to the sports information platform system architecture, see the different functions as different Agent, allow more flexible system architecture design, and thus, the system adaptability, scalability are also stronger.

Table 1. Research on the Impression of Beijing Olympics of the Population Groups (National Events Comparison)

Order	Mark	very Profound	Profound	General	not Profound	very not Profound	Total Number of People	Impression Degree
1		36	45	156	365	264	866	2.1
2		30	45	175	327	289	866	2.08
3	△	123	134	335	231	43	866	3.07
4	△	101	168	345	221	31	866	3.1
5		12	48	116	401	289	866	1.95
6		5	25	81	356	399	866	1.71
7	□	358	445	41	22	0	866	4.32
8	☆	864	2	0	0	0	866	5
9		55	102	212	321	176	866	2.47
10	□	342	410	34	35	45	866	4.12
11		56	67	152	365	226	866	2.26
12		15	21	146	374	310	866	1.91

Survey showed that the audience factors are mainly composed of four areas of educational level, sports knowledge, sports knowledge, social stratification and income, social sports stars cognition. Education level refers to the academic qualifications of audience of sports media information, what is generally believed is that higher education, conducted systematic college-style education and training, will has deeper understanding of sports, strong initiative to involve in the physical exercise in person or watching sports events. The audience's sports knowledge covers two aspects, i.e. sports knowledge accepted in school education stage, and sports information obtained from a variety of communication channels after entered into the community, in this area, mainly aimed at the role of school sports for students' awareness of lifelong physical activity, and whether or not subjectively be willing to continue to engage in sports fitness and entertainment activities after went into the community ^[14]. Social stratification and income are new phenomena and new

problems faced in China's transition, the gradual differentiation of social stratification, the gap between rich and poor continues to widen, it is generally considered that a relatively high income social strata, has relatively abundant leisure time and relatively abundant financing for social activities, sports as a social leisure activity has become the main object of consumption, social stratification and income will have a direct impact on disposable leisure time of labor surplus of the audience into sports, and even along with the funding expenses of sporting events enjoyment. Sports stars cognition is not difficult to understand, that is, the audience favor of a single star, such as Liu Xiang, after 110m hurdles champion in the 2004 Athens Olympic Games, events held in the country are all full if there is Liu Xiang in the track and field competition, in stark contrast to the state of nobody cares about in previous Chinese track and field tournament ^[15-16], around the corner of 2010 South Africa World Cup, many female fans

love the ball can be unintentional, perhaps just to see stars in their mind body and chic robust grace, to a certain extent, brand building of sports events is not a matter of material construction, but the star athlete's sports performance problem^[17-18].

4. Conclusion

As for sports events researchers, if the need for a comprehensive understanding of the relevant sports events and other information, such as: economic evaluation of sports information, facilities, venue information, the bid information on sports events, sports events organization operational information, sports event sponsorship information, sports-related pictures and video images, the basic information of sports events holder, the research literature on related sports events etc., comprehensive information associated with the sports events, it is necessary to retrieve a number of related websites, literature, and need to spend a lot of energy to correlate all information of these events. 4) At present, in most of the existing sports class information platform systems, the information is almost empty, specifically for the project evaluation of sports events, market development and marketing of sports events, sports management, project organization and related decision support for sports events.

References

- [1] M. Lingyun, "Analysis on the Non-technical Factors in the Construction of Information Commons," *Library and Information Service*, vol. 52, Mar. 2008, pp. 125-127.
- [2] J. Yuying, "Research on Wiki-based Individual Information Service," *Information Studies: Theory & Application*, vol. 31, Mar. 2008, pp. 226-230.
- [3] S. Zhongzhi, *Sports Communication*. Beijing: Higher Education Press 2004: 63-64.
- [4] S. Jin, "Foreign Information Commons Development and Study," *Library Journal*, vol. 10, Jun. 2006, pp. 57-6.
- [5] K. Sycara, "Multiagent Systems," *AI Magazine*, vol. 19, Mar. 1998, pp. 79-92.
- [6] Z. Li, *Digital Sports Exploration*. Beijing: Beijing Sports University Press, 2007: 22-26.
- [7] X. Jing, "Library Held Information Commons Seminar," http://findarticles.com/p/articles/mi_m0FWE/is_/ai_n13784, Aug 17, 2008.
- [8] X. Jing, "Library Held Information Commons Seminar," http://findarticles.com/p/articles/mi_m0FWE/is_/ai_n13784, Aug 17, 2008.
- [9] W. Huizha, "Practice on the Information Service of Coaching in Network Environment," *Journal of Shenyang Sport University*, vol. 25, Aug. 2006, pp. 81-83.
- [10] N. Guangfang, "Construction Strategies of Wiki-based Thematic Learning Web," *Modern Distance Education*, vol. 9, Jun. 2006, pp. 43-45.
- [11] D. Weimin, S. Jin, "On Information Commons," *Journal of Library Science In China*, vol. 8, Aug. 2007, pp. 22-25.
- [12] W. Yan, "On the Extensive Use of Digital Technology in the Sports Field," *Fujian Sports Technology*, vol. 27, May. 2008, pp. 23-25.
- [13] N. Guangfang, "Construction Strategies of Wiki-based Thematic Learning Web," *Modern Distance Education*, vol. 9, Jun. 2006, pp. 43-45.
- [14] L. Jianqiang, "Fan Y.ushun. Research of Intelligent Agent and its Application in the Enterprise Integration," *Computer Science*, vol. 30, Jun. 2003, pp. 101-115.
- [15] A. Weiwei. "Gold is not the real measure of a nation," <http://www.guardian.co.uk/commentisfree/2008/aug/25/olympics2008.china>, in GUARDIAN online, August 25, 2008.
- [16] T. Blair. "We Can Help China Embrace the Future," http://online.wsj.com/article/SB121970878870671131.html?mod=opinion_main_commentaries, in WSJ online, August 26, 2008.
- [17] M. Rogers. "Beijing trumps Athens ... and then some," <http://sports.yahoo.com/olympics/news?slug=ro-beijinglegacy082408&prov=yhoo&type=lgns>, in YAHOO, August 24, 2008.
- [18] Y. Galily. "The (Re)Shaping of the Israeli Sport Media: The Case of Talk-Back," *International Journal of Sport Communication*, vol. 1, May. 2008, pp. 273-285.