



An influence model of information technology on public physical service on the basis of case analysis

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ABSTRACT

Currently, a progressively increasing number of sports events have become one of the important social cultural activities. Owing to the continuously enhanced social attention and participation, under the circumstances of highly developing computer information technology, the application of information technology in sports events has become inevitable. This paper analyzed the application situation of information technology in sports events and subsistent dominant issues, and a specific model for the distribution of sports stadium in modern cities was established, and the influence of information technology on sports event as well as the specific objects of information technology was illustrated through a specific case of information technology application in sports events, and ultimately some concrete recommendation given by the analysis was proposed for promoting the standard of sports event utilizing information technology.

Key words: Modeling, information system, case analysis, physical service

INTRODUCTION

The acceleration of the establishment for the public physical service system will not only satisfy the increasing requirement for physical demand but also be a significant aspect of promoting the comprehensive harmonious sustainable development in economic society, which is also a symbol for the social benefit level of commonweal as well as publicity in metropolis, and is efficient measure to innovate social management as well as to increase citizens' happiness index [1].

The public management theories, which have instructive significance on public service practice, principally involve public choice theory, new public management theory and new public service management theory, which are the dominant practical basis for the reformation of physical public service in many countries and regions. The multi-component subject positions of government, market and society in public service are emphasized [2]. In recent years, continuous exploration of information for physical public service have been conducted in some developed countries, and so far a multi-component frame of supply has been constructed, which is a supplying paradigm permeating through multiple regional levels (local, provincial, state and national) and involving multiple organizational levels[3].

Under the circumstances of this frame, many national governments and relevant physical departments have established many assorted programs aimed at the validity and equity of public physical service.

The application situation analysis of information technology in sports events

The rapid development of science and technology has provided intense technical subtraction for sports events, and an increasing penetration and intervention of modernized high technological achievements in the field of sports events prompt enormous alternation in physical education. The application researches of information technology in sports events have been enhances progressively, and practical results have been obtained [4]. The analysis for principle application of information technology in sports events is performed as below, and discussion is launched

form three dominant aspects: collection and management of training data, analysis and simulation of motor skills, as well as an assistant system for athletic training [5].

Data collection and management in sports events: The athletic training process is a complicated macro-system. The collection, reservation, categorization, retrieval and renovation of relevant training data have an important procedure and foundation in scientific training [6]. In recent years, the seasonable data collection pattern integrated with electromechanical design, multi-channel user interface, wired/wireless data transmission, and the application researches are dominated by the management and analysis for multi-media database, data depository as well as training data of data mining technology, and practical effect on scientific training as well as sport performance promotion has been achieved. The basis of electromechanical seasonable data collection analysis is the automation of soft/hard ware related to data collection by computer. Computer technology etc. is utilized for seasonably tracking mobile objects to acquire in-motion data and research is gradually conducted. Meanwhile, researches about user interface of the data collection and management system as well as the format of data reservation have been emphasized increasingly. Application researches of data base technology in training data management have been progressively generalized.

Analysis and simulation of motor skills in sports events: The forward technologies such as intelligent monitoring, human-computer interaction and virtual reality etc., which are implemented in the process of individual' movement as well as competitions utilizing computer visual sense integrated into modern biomechanics, has become a hot and difficult research issue in the field of computer as well as sports. The application of motor skills analysis performed by graphic image processing technology has been mature progressively. The detection and segmentation researches for sports stadium havedrawn people's attention. Three-dimensional individual's movement analysis and simulation have become a hot and difficult research issue. The modeling simulation of physical education has achieved some progress, and provides a modeling idea for the application of multi-agent technology in physical simulating system.

The assistant system for athletic training in sports events: At present time, apart from some information technologies such as data base, data mining, simulation technology and graphics etc. independently applied in every procedure of athletic training process, many researchers and scholars have been initiatively exploring a comprehensive application of the technologies above, and on the basis of which assistant systems for athletic training for every event will be gradually developed and exploited. The assistant system for athletic training is a product integrated with many information technologies, including photo-mechanic-electronic intelligent testing technology, computer graphic technology, video processing technology and large-scale data base management technology and internet technology. Most assistant systems for athletic training are established on the basis of decision support system, which are circumstances providing valuable information and innovative ideas as well as study for decision makers, and are interactive computer systems aiding decision makers to work out structured or semi-structured decision making problems, which function represents as the entire process of supporting decisions, and especially as the supporting capacity for each procedure of decision making process, which undoubtedly provides potent means for athletic training process, as is shown in Fig.1.

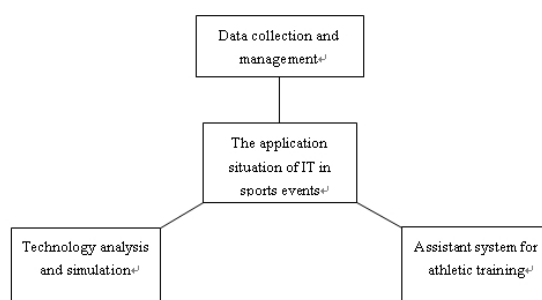


Fig.1.The application situation analysis of information technology in sports events

The construction of civil public physical facilities service distribution system

In the civil public physical facilities service distribution system, government, relevant physical departments, un-commercial sports organizations and commercial ports organizations as supply main body of public physical facilities service, provide the necessary sports facilities and sports events for the market. Citizens enjoying the physical right have extensive requirements for public physical demand, and can be considered the objects of public physical facilities service. Owing to the diversity of public physical demand, the supply main body are inevitably required to providing abundant public physical facilities service, and the radiating capacity of different public

physical facilities is distinguished. The construction of civil public physical facilities service distribution system can guarantee the reasonable supply of civil public physical facilities service, as is shown in Fig.2.

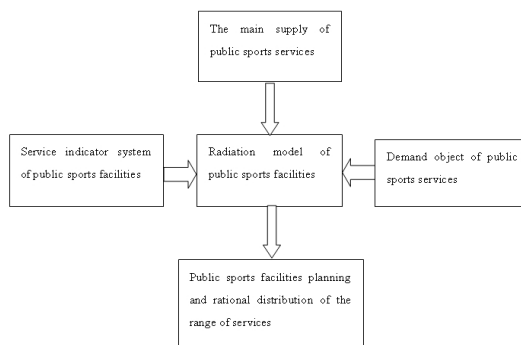


Fig.2.Public sports facilities layout system

The radiating analysis model utilizes modeling calculation to obtain the radiant range of regional civil public physical facilities service, and products assessment of public physical facilities service distribution system, to establish a impeccable public physical facilities service distribution system, which on one hand will promote the supply level of civil public physical facilities, and on the other hand will provide basics of decision making for reasonable distribution of civil public physical facilities.

The application case analysis of information technology in sports events

An intact and fully-functioning large-scale comprehensive sports events system is enormous and complicated, dominantly including events comprehensive information system, timing-scoring system (laser ranging), onsite large projection screen, onsite event director and coordination office etc., and to satisfy the requirements of synthesizing (large scale) events, the seasonable event information should be provided for commentators of the TV stations for rebroadcast commentary, which functioning regions are distributed as Fig.3:

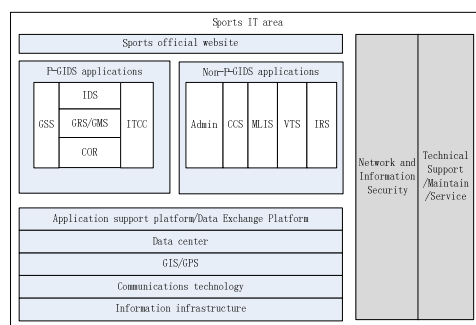


Fig.3.Sporting events information systems function zoning

Province Games Integration Information Dif fusion System (P-GIDS) as a major application of information technology in sports events, is attached to comprehensive athletic meeting information system, and is an important core system as well as a key point to technology guarantee, which is applied some relevant procedures such as score collection, processing and annunciation, as is shown in Fig.4.

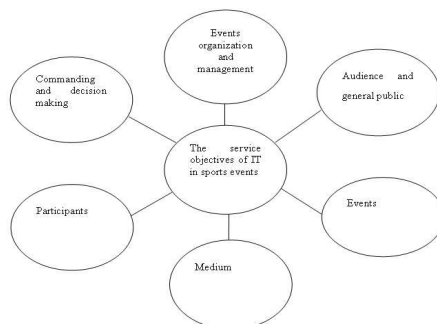


Fig.4.the service objectives of IT in sports events

Athletic meeting Information Distribution System (IDS) as the information input system for athletic meeting management system and athletic meeting score system, is consist of three operation sub-systems: internal competition information website (INFO), report form printing and distribution system (RPDS) and commenter information system (CIS). Therefore, the objective is not to provide or utilize information technologies, but authentically is to provide technical service for athletic meeting, which includes service for:

- (1) Events organization and management;
- (2) Commanding and decision making;
- (3) Participants;
- (4) Medium;
- (5) Events;
- (6) Audience and general public. Official website system and short message service can provide appreciation service about IT for all of the participants.

Recommendation on promoting public physical service applied with information technology

To accelerate the construction of public physical service system, a distinctive, reasonable-structured, fully functional, and efficiently operated and beneficial public physical service system should be established, and citizens can actually enjoy the achievements of physical development, opportunities to participate and space for physical innovation, which can set about form the following aspects, as is shown in Fig.5:

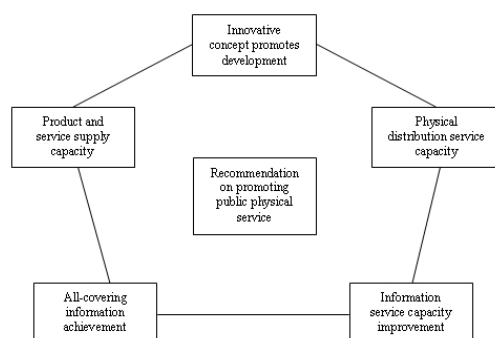


Fig.5.Recommendation on promoting public physical service applied with IT

Innovative concepts promote development: On the basis of various demands on civil fundamental physical right, the provided places for citizens to do athletic exercises or super-incumbently organized physical activities are not sufficient. Public physical service as well as fundamental physical life should be enjoyed by each individual, which is equivalent to compulsory education as well as essential health care, considered as the significant symbol for energetically comprehensively constructing moderately prosperous society of Shanghai, as the important right of citizens in modern civilized society and also as important public management responsibility undertaken by service-oriented government to comprehensively promote the construction of public physical service system.

Product and service supply capacity promotion: The construction of the civil public physical service center can efficiently coordinate and manage general affairs of the civil public physical service. The centre function of district governments especially district physical administration departments should be vigorously developed, which becomes the guiding center of public physical service distribution as well as policies, the optimizing distribution center of resources as well as essential factors, and the center of talents cultivation as well as team construction, and the level of the regional peoples' well-being development will be promoted. Vigorously explore the energetically implemented service measurements that some physical facilities should be free open to public use in public stadiums, and that student card or ticket should be proposed by means government purchase service, and that citizen can enjoy high-level sports events with a lower price, and that a mutual cultivation, assessment as well as evaluation should be performed by physical together with education departments for the quality of physical education curriculum as well as the instructional level of the teachers, and that students should master two physical skills and a long-life habit for physical exercises should be developed, and that constitution intervention should be promoted and athletic prescription should be provided for older people suffering high blood pressure or diabetes and the exercise therapy should promoted.

All-covering information achievement: Implement the guarantee project for public physical service, and on the basis of improving the fundamental situation of physical facilities, the public physical service capacity will be increased. On the basis of comprehensive programming arrangement, reasonable distribution, service population as

subtraction, traffic network as accordance and perfection of public physical facilities construction and configure standard installation as guidance, and in turn a standardized, normalized and scientific construction of public physical service facilities will be promoted. Comprehensively arrange the distribution construction and integrated utilization of places for sports, culture, forestation, education and primary party organization, and industriously achieve mutual construction, community and establishment of integrated comprehensive service platform, and consider athletic activity center as dominant battle field to enhance the efficiency and effectiveness of community service. Especially, the physical function of public greenbelt should be developed, and the physical facilities should be programmed reasonably in park greenbelt to provide more sites of physical exercises for citizens.

Information service capacity promotion: Public physical information service is an important measurements for citizens' participation in physical exercise and construction of physical exercise environment, and the promoting as well as enhancing effect of information technology on the construction of public physical service system should be intensively emphasized and sufficiently accepted, and a reasonable-structured, balanced-developing and sound-networked public digital physical service system should be established industriously. Implement the project of civil physical shared information resources, and on the basis of public physical exercise stadiums, open services as nodal points and bodybuilding guidance as well as information consulting as measurements, the commercial fitness centers will be gradually covered, and scheduled online service will be achieved, and the shared physical information and resources by general public will be realized.

Physical distribution service capacity improvement: For a long time, the management and service of physical activities has been dominantly depended on government instructions, but on civil demands and marketing guidance, which is intensively scheduled and administrated. Therefore, to promote the effectiveness of public physical service, the selection right of physical products must be shifted from government to general public, and the measurement of direct delivery to general public from government without the identification of general public must be converted. By means of organized investigation and professional teamwork, grassroots physical administrators and citizen representatives should directly access and select, which makes public physical service much closer to reality, life and public general.

CONCLUSION

With the rapid development of computer technologies, corresponding technologies and internet technologies, human society has approached the times of information, and data base technology has become an important component of modern information science and technologies, and also become the core of computer data processing and information management system, which is a core technology of information system organizing and managing large quantity of data, and is also an important foundation of networked information management system. With the progressively increasing quantity of sports events function and organization work, general public and medium are broadly involved, and the traditional organization working patterns are difficult to satisfy the practical requirements of sports events. The introduction of new technologies, especially modernized information technologies, has enormous significance on valid promotion of working quality, accuracy as well as equality enhancement of the various kinds of data in sports events, cost reduce, working efficiency development, and guarantee for smooth performance of athletic meeting. On the basis of function analysis for computer information technologies in some large-scale sports events, and then this paper proposed some concrete recommendation on information technologies applied in sports events.

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