Satisfaction Evaluation and Optimization of Tourism E-commerce Users Based on Artificial Intelligence Technology

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*Abstract :*Intelligent Agent is a new method of designing and developing software system. Agent-based processing technology has become a new breakthrough in the development of software engineering and a new revolution in software. The relationship between user satisfaction and tourism e-commerce function is discussed, and the relationship between user satisfaction and the purpose of tourism e-commerce supplier is tested. Web data mining is one of the key technologies to realize Web personalized service. Through the analysis of tourists' behavior (interest), the corresponding model is established to provide personalized service for users according to the model. The traditional tourism industry is obviously unable to comply with the development trend, and the corresponding industrial structure transformation and upgrading is necessary. With the advent of the era of personalized information services, the personalized service provided by the tourism e-commerce environment is also of great significance and practical value for improving the satisfaction of tourists and the competitiveness of merchants. This paper analyzes the reasons that affect the customer satisfaction of tourism e-commerce, and proposes corresponding countermeasures.

Keywords: **Artificial intelligence technology; tourism e-commerce; user satisfaction evaluation**

I. INTRODUCTIONS

With the development of modern information technology and network technology, e-commerce, which is based on the Internet and other computer technologies, has emerged as the times require, and has grown rapidly [1]. As a representative of the new economic model, e-commerce has received more and more attention from all countries in the world. With the information system for tourists, it is better to provide visitors with relevant information and scheduled services. Such as tourism destination activities, tourism costs, travel routes, transportation, accommodation, entertainment, local customs, eating habits and so on. In order to help tourists choose the best travel routes and travel time, make reasonable travel decisions [2]. Get the greatest pleasure of tourism consumption at the least cost, improve the loyalty of tourists to the website, and thus enhance the competitiveness of the website. Tourism has unique advantages in developing e-commerce [3]. Tourism has become one of the most popular and lively technical services on the Internet [4]. The nature and characteristics of tourism itself, as well as social informationization and economic networking, determine that tourism has unique advantages in developing electricity over business. With the continuous maturity of this technology, the application of artificial intelligence in real life is becoming more and more popular.

Although China's tourism e-commerce is developing rapidly, there are still many problems and difficulties. Website information updates slowly, online transactions are cold, unable to attract tourists [5]. The location of the website is too narrow to cater to tourists from all over the world, or even to eliminate linguistic and cultural differences. Artificial intelligence is a branch of computer science. For scientists, the essence of AI research is to understand the essence of intelligence [6]. In turn, it produces a smart machine that reacts in a new way that is similar to human intelligence. How to help visitors quickly find the information they need and turn potential visitors into buyers is a challenge for travel e-commerce sites. Do a good job in customer relationship management, provide personalized services for users, and become the direction of e-commerce operation and development [7]. China is a country with abundant tourism resources and a huge user market. Therefore, tourism e-commerce has great potential and space for development in China's tourism market. How to make each visitor find the information of interest on the website and cause the desire to purchase tourism is the goal of personalized e-commerce information service for travel e-commerce [8]. This paper explores the analysis of user access data, establishes a user model library, and provides corresponding services for user needs.

II. MATERIALS AND METHODS

With the continuous development and improvement of computer networks and related technologies, the Internet has become a huge distributed computing platform. The business logic layer is the core of the application system, responsible for processing and manipulating data, and implementing specific business rules [9]. By partitioning it into multiple, relatively independent components, the internal implementation details are encapsulated for good encapsulation, reusability, and portability. There are only two parts of artificial intelligence that are connected to the outside, namely input devices and output devices. Most input devices use sensors to simulate human organs, such as infrared sensors, sonar sensors and so on, in order to simulate human visual system [10]. Sampling organizations are different from tourism authorities, travel agencies, hotels, tourist destinations, personal websites, Internet companies, etc. In recent years, with the development of China's tourism e-commerce, tourism e-commerce is developing from simple information service of browsing, searching and booking tourism products on the Internet to intelligent retrieval and personalized service. Tourism e-commerce system

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provides a platform for the development of such business activities. It is supported by information technology, network as the main body, and has rich tourism resources information.

Agent technology has evolved from a series of related disciplines, such as object-oriented technology, distributed computing and artificial intelligence. Agent has also thoroughly inherited and developed some important ideas and methods of these three disciplines (as shown in Figure 1).

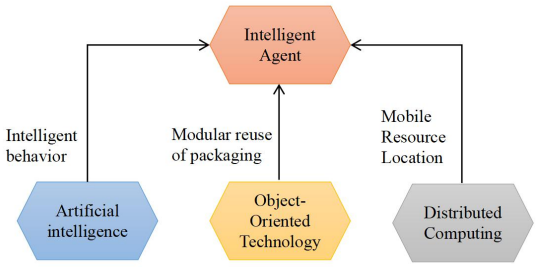

Fig.1 Development of Agent

Faced with the problems mentioned above, both businesses and customers want to get more active, intelligent and dynamic services, so the emergence of Agent-based E-commerce technology. The study of TEC application satisfaction evaluation is helpful to answer this urgent question. This kind of sensor can realize the perception of the position of the monitored object. If the object appears in the sensing range of the sensor, each "eye" will give different responses in the system. Real-time image transmission system is set up in each scenic area. Robots in each scenic area convert these images into data. After analysis and processing, the operation results are obtained, and the flow of people in different places is analyzed. Tourism e-commerce is a business system based on tourism information base and electronic commercial bank, which uses the most advanced electronic means to operate tourism and its distribution system. Moreover, the information on the website is slow to update, and online transactions are cold and unable to attract tourists. The site's targeting is too narrow to be accessible to visitors from all over the world, and it is not even possible to eliminate language and cultural differences. A number of literatures have attempted to assess the development of TEC and determine the factors that influence the successful application of TEC. During the process of visiting the website, the personalized service module records the customer's access behavior, such as query, browse page and article, stay time, number of visits, forward and backward, save collection, feedback information, etc. Reflects the interests of customers.

III. Result Analysis and Discussion

In the tourism industry, traditional marketers are often criticized for their single marketing methods and insufficient transparency. Studies have shown that user satisfaction is a dominant factor in successful TEC applications. One of the core goals of the Cisco system is "improving user satisfaction," and more researchers are focusing on metrics and simulating user satisfaction. For different scales of tourism websites and enterprises, there should be different choices - small and medium-sized tourism enterprises can adopt the "entry market" way to open up domestic and international markets without the popularity and resource advantages of tourism agents. At present, global tourism e-commerce has been growing at a rate of 35% for five consecutive years, once accounting for one-fifth of the total e-commerce transactions, and has become the largest industry of global e-commerce. Because tourism products have the characteristics of invisibility, non-storage and non-materiality, tourism e-commerce is easier to operate, and there is no logistics distribution problem. The communication between AI of each scenic spot and AI of general dispatching room is established by communication protocol, and the data is uploaded to the General Dispatching room, then real-time information transmission is completed, and the dispatching task is completed. Therefore, e-commerce will be the key factor to promote the development of tourism.

The control mechanism design of multi-agent system should be divided into two parts: one is the automatic control of agent, the other is through system administrators. The main conceptual framework of the multi-agent organization model is shown in Figure 2.

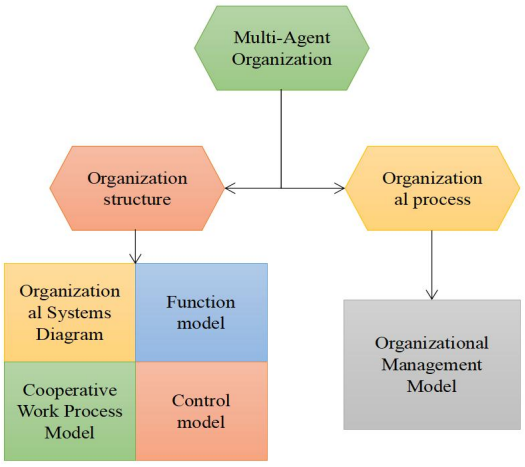

Fig.2 Conceptual Framework of Multi-Agent Organization Model

With the rapid growth of residents' income in China, it has provided a huge market and consumption capacity for the development of tourism industry. If artificial intelligence is applied, some operation schemes will be transparent and open in the form of pictures and texts, which will soon win the trust of tourists. However, due to the large number of websites that can provide tourism information services and the huge amount of tourism information, tourists are confused and time-consuming in choosing. Our concern is not whether the tourism organization should complete the TEC application, but what should be done to be the most effective. Large-scale tourism enterprises can adopt the way of "network and

cooperative integration", regard tourism websites as a new channel, invest funds and manpower to improve various services on the Internet, and establish an internationally renowned brand image. The sample organization recognizes that “user satisfaction” is a major factor in measuring the success of TEC applications. The question is raised from the point of view of whether the website is profitable. For those non-profit organizations, the application of TEC is not beneficial, but it may be successful or very successful. In order to investigate whether user satisfaction is highly correlated with the self-evaluation of these organizations, a correlation analysis between user satisfaction and supplier satisfaction is calculated. It can be confirmed that the supplier and its users basically hold the same evaluation for the application of the TEC.

Users only need to input keywords, related words, filter words, and Agent to generate query words for each search engine for each search engine to call. Users can generate different association dictionaries according to their own needs to meet personalized queries. The table structure of the associated dictionary is shown in Table 1:

Tab.1 Structural table of associative dictionary

Name	Code	Data Type
Theme	Theme	Text
Related words	Like Word	Text
Filter words	Limit Word	Text
Antonym	Cut Word	Text

IV. CONCLUSIONS

Agent and multi-agent system is one of the most active frontier research directions in the fields of computer science and technology, Information Engineering and network and communication. The research suggests that since good online display and services can increase the profit/cost ratio of TEC investment, these tourism organizations should be encouraged to improve their websites. With the progress of science and technology and the development of related psychological theories, virtual reality technology will be more and more widely used in the field of psychotherapy, and the scope of its application will be wider, which will certainly become an important innovation in the field of psychotherapy. Therefore, we will continue to study hard in order to improve the follow-up study. In addition, due to the research on the intergenerational inheritance of family enterprises in China, there are still some limitations and gaps compared with the research on the inheritance of developed family enterprises. This affects the comparability of research and the inheritability of results to some extent. Careful analysis, the necessary conditions for TEC applications are very different from other IT projects, TEC can not be limited to only system development for internal users, but to deal with the different requirements of internal users and external users. The architecture provides a mechanism for constructing a multi-agent system. The application research of Agent technology and JADE platform is carried out. The system only realizes some functions of network management. The improvement of network management system needs further research.

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