

# *Discussion on the Application of Artificial Intelligence in e-Commerce*

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**Abstract:** At present, while enhancing the value of artificial intelligence applications, it should also be applied to e-commerce operations in a more humane way. Based on this value judgment, the application model of artificial intelligence is: planning the application degree of artificial intelligence under the requirements of cost control, strengthening employee job training to enhance the ability of artificial intelligence application, building an e-commerce database to meet the needs of big data analysis, and enhance the compatibility and experience of human-computer interaction based on assistance.

## **1. Introduction**

In recent years, artificial intelligence has been widely used in e-commerce activities, and has greatly improved the experience of online consumption. However, with the deep embedding of artificial intelligence in the field of e-commerce, issues worthy of attention are gradually exposed. For example, intelligent push may affect the privacy of consumers. For another example, the intelligent dialog window cannot fully understand the context provided by consumers. Therefore, while enhancing the value of artificial intelligence applications, it is currently necessary to apply it to e-commerce operations in a more humane way. From the perspective of business flow determining logistics and logistics supporting business flow, the application prospects of artificial intelligence in e-commerce should be broadened. Taking the annual “Double 11” as an example, how to enhance the synergy between e-commerce companies and logistics companies, and how to improve the supply chain operation model to enhance the experience of end customers, should be the focus of artificial intelligence in the application problem. Especially in the context of the “Belt and Road” initiative, how cross-border e-commerce companies apply artificial intelligence to complete the transformation of customs clearance information should become a topic that the current academic and industry need to pay attention to.

## **2. The Components of the e-Commerce System under the Overall View**

Integrating e-commerce and logistics, the components of the e-commerce system can be analyzed as follows from the overall perspective:

### **2.1 Business Flow System**

The business flow system of the e-commerce operation model represented by B2C and C2C is reflected in the online supply and demand relationship. The business flow system constitutes the core component of the e-commerce system, and maintaining the stability of the business flow system has become an important field of application of artificial intelligence. Achieving the stability of the business flow system depends on two points, namely, meeting the market demand scale and demand structure, and being able to quickly respond to the market demand scale and demand structure in the procurement management.

## **2.2 Logistics System**

Regardless of the B2C or C2C model, in the narrow e-commerce environment, only the ownership conversion of the goods has been completed, and it has not yet formed a complete e-commerce activity. Therefore, the logistics system needs to be included in the broad e-commerce environment. The operation quality of the logistics system is not only related to the consumption experience of end customers, but also related to the efficiency of e-commerce companies' capital withdrawal. Especially in e-commerce festivals like “Double Eleven”, the supporting role of the logistics system is even more evident.

## **2.3 Price System**

The price system here is related to online marketing, that is, e-commerce companies need to use product portfolio strategies to gain consumers' attention in response to fierce online competition. The product portfolio strategy contains differentiated pricing strategies, so designing price parameters for different product portfolios has become an important task in online marketing. At the same time, due to the existence of economic indicators such as price elasticity of demand and price cross-elasticity, the formulation of differentiated prices also depends on obtaining sufficient market information.

## **2.4 Information System**

Business flow systems, logistics systems, and price systems all need the support of information systems, and artificial intelligence also plays a supporting function in the form of information technology. After emphasizing the humanization requirements of artificial intelligence in applications, it is necessary to improve the integration of information systems in human-computer interaction.

## **3. The Application Value of Artificial Intelligence in e-Commerce**

Based on the components of the e-commerce system analyzed above, the application value of artificial intelligence can be summarized as follows:

### **3.1 Improve the Scientific Nature of Procurement Management**

Most e-commerce companies focus on retail, and there are e-commerce companies that produce entities in time, and they also rely on e-commerce platforms to increase product sales. For retail e-commerce companies, it is necessary to quickly respond to the market demand structure and demand scale. This is not only related to the safety of capital flow, but also has an important impact on the total control of prepaid funds. For e-commerce companies with production entities, it has become an operating instinct to adjust product lines based on market demand. In the application of

artificial intelligence, on the one hand, it needs to provide purchase data for retail e-commerce companies in big data analysis; on the other hand, with the assistance of big data analysis and ERP systems, it provides resource allocation solutions for production entity e-commerce companies.

### **3.2 Enhance the Synergy of e-Commerce Logistics**

The cooperation between e-commerce companies and third-party logistics companies needs to be supported by artificial intelligence to enhance the synergy between the two. With the logic of business flow determining logistics and logistics supporting business flow, logistics companies will, with the help of artificial intelligence, provide timely feedback on the sales and purchase data of e-commerce companies. As a professional and socialized logistics company, it allocates logistics resources for e-commerce companies on the basis of big data analysis, and realizes economies of scale in the process of integrating social business flows. The application value of artificial intelligence is prominently reflected in the cooperative relationship between retail e-commerce companies and logistics companies. With the help of artificial intelligence, customer information is decomposed, so that e-commerce companies and logistics companies can synchronize labor division and collaboration to improve the operational efficiency of e-commerce logistics.

### **3.3 Increase Flexibility in Price Setting**

The price parameters of e-commerce companies are public information. In an e-commerce platform that is similar to a perfectly competitive environment, improving the flexibility of price setting has become a key ability, which contains the formulation of competitive price parameters for different product combinations. And formulate attractive price parameters for the inter-bank price system. All of these rely on the analysis of market and peer price data by artificial intelligence, and can be completed on the basis of meeting the instructions issued by e-commerce companies.

## **4. Application Mode of Artificial Intelligence**

According to the above, the application model of artificial intelligence is constructed as follows:

### **4.1 Plan the Application Degree of Artificial Intelligence under the Requirements of Cost Control**

With e-commerce companies as the main body of artificial intelligence applications, it is necessary to establish a cost constraint mechanism when implanting artificial intelligence technology, and reasonably plan the application of artificial intelligence according to their own development vision. The specific application modes are: (1) As artificial intelligence mainly plays a significant role in the fields of big data processing and information interaction, e-commerce companies need to combine business development shortcomings and implement plans under the “core-peripheral” application path. (2) Since the business flow system constitutes the core element of an e-commerce enterprise, it can be first applied to big data analysis when planning artificial intelligence to solve the problem of procurement management. (3) With the resolution of procurement management issues, artificial intelligence can be applied to strengthen the information collaboration capabilities between e-commerce and logistics.

### **4.2 Strengthen Job Training for Employees to Enhance Ai Application Capabilities**

Artificial intelligence is mainly in the form of software system, and its application still needs to rely on the post ability of the user to be effective. Therefore, in order to enhance the ability of artificial intelligence application, it is necessary to strengthen the job training of employees. The specific application model is: (1) Combining the “core-periphery” layout followed by artificial intelligence in the planning, e-commerce companies should first carry out job training for market personnel and procurement management personnel. The content of on-the-job training not only covers the application technology of artificial intelligence, but also involves capacity building in software maintenance and data development. (2) E-commerce companies should jointly develop standardized artificial intelligence software systems with strategic partners (logistics companies) and carry out joint training.

#### **4.3 Building an e-Commerce Database to Meet the Needs of Big Data Analysis**

In order to fully realize the application value of artificial intelligence, e-commerce companies should strive to promote the construction of customer and order database resources to meet the needs of big data analysis. The specific application model is: (1) E-commerce companies should establish corporate electronic document standards based on the early-stage artificial intelligence applications, and store electronic data of customers and orders separately. (2) In the storage of customer data, classification management should be given according to corporate standards, that is, customer data should be refined into “high-quality customer data” and “ordinary customer data” in the early stage to improve the pertinence of big data analysis. (3) In the storage of order data, classification should be made by commodity type, and commodity price information needs to be improved in data construction to improve the practicality of big data analysis.

#### **4.4 Assist-Oriented to Improve the Compatibility and Experience of Human-Computer Interaction**

E-commerce companies need to scientifically define the functional positioning of artificial intelligence, that is, the function of artificial intelligence should be positioned to enhance the compatibility and experience of human-computer interaction. The specific application model is: (1) Under the guidance of the “new consumption concept”, maintain the privacy of consumers' economic activities and avoid the application of artificial intelligence push functions. (2) Analyze and summarize the individualized problems of consumers, and respond to them with human as the leading factor.

### **5. Discussion**

To sum up, with e-commerce companies as the main application of artificial intelligence, it is necessary to establish a cost constraint mechanism when implanting artificial intelligence technology, and reasonably plan the application of artificial intelligence according to its own development vision. Artificial intelligence is mainly in the form of software system, and its application still needs to rely on the post ability of the user to be effective. In order to fully realize the application value of artificial intelligence, e-commerce companies should strive to promote the construction of customer and order database resources to meet the needs of big data analysis. E-commerce companies need to scientifically define the functional positioning of artificial intelligence.

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