

The Impact of Artificial Intelligence on the E-Commerce Industry and the Reform of E-Commerce Talent Training Models

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Abstract: *With the rapid advancement of artificial intelligence technology, its influence on the e-commerce industry has continued to deepen, thereby driving the transformation of e-commerce talent training models. This paper analyzes the impact of artificial intelligence technology on the e-commerce industry and examines the emerging challenges currently confronting e-commerce majors. On this basis, it proposes measures including updating the curriculum system, strengthening practical teaching, improving the quality of the teaching staff, and optimizing talent training programs. These proposals are intended to provide a useful reference for constructing a new e-commerce talent training system that aligns with social and industry norms.*

Keywords: Artificial Intelligence, E-Commerce Industry, Talent Training Model, Curriculum System, Practical Teaching, Teaching Staff Quality, Talent Training Programs.

1. INTRODUCTION

With the rapid development of information technology, artificial intelligence has contributed to the development of various industries, including e-commerce. The widespread use of artificial intelligence technology in the e-commerce industry, such as intelligent customer service, logistics systems, intelligent recommendation systems, etc., has improved the operational efficiency and service experience of e-commerce related enterprises, while also posing new requirements for the cultivation of e-commerce talents as a whole. Based on this background, universities need to reform the training of e-commerce professionals and cultivate composite talents that meet industry development standards.

At present, there are many problems in the talent cultivation mode of e-commerce in universities, mainly reflected in curriculum design, faculty team, practical teaching and other aspects, which do not match the demand for e-commerce talents in the current artificial intelligence environment. In terms of curriculum design, some universities mainly focus on the teaching of traditional courses, without integrating artificial intelligence related courses into the classroom, and lack the application of new knowledge and technologies. In terms of teaching staff, most university teachers are only familiar with knowledge related to the e-commerce industry, but lack relevant knowledge of artificial intelligence technology, resulting in low teaching quality. In terms of practical teaching, the focus is mainly on classroom learning, with few practical opportunities. Students are disconnected from the actual needs of enterprises, and it is difficult for them to accumulate experience in dealing with e-commerce business in the era of artificial intelligence through practice.

2. THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE E-COMMERCE INDUSTRY

2.1 Development Status of E-commerce Industry

In recent years, the scale of China's e-commerce market has been continuously expanding, and the total transaction volume has also continued to grow. According to relevant data, the total amount of e-commerce transactions in China was 4.5 trillion yuan in 2010, and by 2024, the total transaction amount will reach 42.3 trillion yuan. At the same time, artificial intelligence technology is applied in various fields of e-commerce, and the application penetration rate continues to increase. For example, more than 80% of e-commerce customer service uses intelligent customer service. Through these data, it indicates that the e-commerce industry is becoming increasingly intelligent, and the demand for e-commerce talents with artificial intelligence knowledge and skills is also growing.

2.2 Application scenarios of artificial intelligence in e-commerce

Artificial intelligence technology is widely applied in various fields of e-commerce, enabling various industries to operate efficiently. In terms of customer service, intelligent customer service systems are mainly used to promptly respond to customer inquiries with the help of natural processing technology, solve customer doubts, and improve customer satisfaction. For example, Alibaba's intelligent customer service "Alibaba Xiaomi" can quickly and accurately respond to customer questions, reducing the cost of manual customer service.

In terms of precision marketing, artificial intelligence technology mainly analyzes users' specific behaviors through a large amount of data and provides user portraits. E-commerce related platforms push users' preferred products and services based on their favorites, purchase records, and other related information, stimulating their purchasing desire and ultimately converting it into order volume. Taking Amazon as an example, sales increased by 35% after using a personalized intelligent recommendation system.

2.3 Impact of Artificial Intelligence on Talent Demand in the E-commerce Industry

With the deep application of artificial intelligence technology in various industries of e-commerce, the changing demand for talent in the industry is becoming increasingly evident. This is mainly reflected in two aspects, one is the need for a large number of e-commerce talents with artificial intelligence technology capabilities. Enterprises need professional talents who can use artificial intelligence technology for data analysis, algorithm design, and system development to support the development of intelligent customer service, precision marketing, intelligent logistics, and other businesses. On the other hand, enterprises need versatile talents. Not only should one be familiar with the operation and management knowledge of traditional e-commerce, but also possess comprehensive abilities such as innovation and data thinking.

According to the "2024 Artificial Intelligence Industry Talent Demand Report" released by Zhilian Recruitment, the demand for talents with artificial intelligence related knowledge in the entire e-commerce field has increased by 38% year-on-year, and they also have higher salary levels. This fully reflects the need for a large number of e-commerce related professionals in the era of artificial intelligence.

3. CHALLENGES FACED BY TALENT CULTIVATION IN E-COMMERCE MAJORS IN UNIVERSITIES IN THE ERA OF ARTIFICIAL INTELLIGENCE

3.1 Unreasonable curriculum system setting

At present, the curriculum system of e-commerce majors in universities is unreasonable, mainly reflected in the lack of courses related to artificial intelligence. On the one hand, the curriculum system mainly consists of traditional courses such as Introduction to E-commerce, Online Marketing, E-commerce Supply Chain Management, etc. Although these courses lay a certain theoretical foundation for e-commerce majors, in the era of artificial intelligence, course updates are not timely and have not been integrated with AI technology, resulting in knowledge lag. For example, in online marketing courses, there is limited explanation of precision marketing techniques and strategies based on artificial intelligence, making it difficult for students to master how to use AI tools for marketing promotion.

On the other hand, there are relatively few courses related to artificial intelligence offered. Some universities offer related courses such as machine learning and data analysis, but the course content is relatively basic and does not combine with e-commerce majors. After learning relevant knowledge in the classroom, students only exist in the theoretical knowledge stage and cannot apply it to practical e-commerce scenarios. In addition, there is a lack of systematic and coherent integration between courses, which has failed to form a complete curriculum system for the integration of artificial intelligence and e-commerce.

3.2 Weak practical teaching links

In e-commerce teaching, practical teaching is very important. Students should not only learn theoretical knowledge, but also pay more attention to the application of practice. Based on the era of artificial intelligence, the importance of practice is more evident. There are many problems in the practical teaching of e-commerce majors in current universities. The main issues are outdated practical teaching content and a lack of practical projects

related to artificial intelligence technology. Most practical teaching still remains at the level of traditional e-commerce platform operation, web design, etc., failing to keep up with the pace of industry development. For example, in the operation practice of e-commerce platforms, there is little involvement in using artificial intelligence technology for platform data analysis and optimization.

At the same time, the practical teaching platform is outdated. Currently, most universities' practical teaching platforms have not been updated, with relatively single functions and no real artificial intelligence application scenarios. This results in students only being able to use older systems during the practical process, with outdated technology that cannot match the existing artificial intelligence environment. In addition, the construction of off campus internship bases is insufficient, and cooperation with enterprises is not close enough. Students lack opportunities to participate in AI driven e-commerce projects in enterprises.

3.3 Lack of artificial intelligence capability in the teaching staff

Teachers play a leading role in talent cultivation in universities. From the current teaching staff of most universities, there are relatively few talents with knowledge related to artificial intelligence. This is mainly reflected in two aspects. Firstly, the professional background of most teachers is mainly in traditional fields such as e-commerce and management, and they have not fully mastered artificial intelligence related technologies. In the teaching process, the integration of e-commerce professional knowledge and artificial intelligence technology cannot be well achieved, resulting in low teaching quality.

3.4 The disconnect between talent cultivation and industry demand

According to the 2024 Emerging Digital Talent White Paper, jointly released by the Mast Human Resources Research Institute (a subsidiary of Mast Human Resources Group) and Xiamen Talent Development Group, demand for digital talent has increased nearly threefold over the past three years, while supply has grown only 1.5 times, creating a severe shortage; the gap is especially acute in AI–e-commerce integration. This macro-level imbalance is corroborated by micro-level evidence. For instance, a 2024 survey of 150 e-commerce enterprises in Hangzhou and Shenzhen found that 81% reported difficulty recruiting graduates capable of deploying AI tools such as recommendation algorithms, intelligent customer service, or automated marketing analytics; 73% identified data-driven decision-making as a critical but missing skill; and 66% complained that new hires required at least six months of additional training before becoming productive.

4. SUGGESTIONS FOR REFORMING THE TALENT TRAINING MODEL OF E-COMMERCE MAJORS IN COLLEGES AND UNIVERSITIES IN THE ERA OF ARTIFICIAL INTELLIGENCE

4.1 Updating the curriculum system

Based on the unreasonable setting of the curriculum system, it is proposed to update the curriculum system. In order to better adapt to the development of the artificial intelligence era in university teaching, it is necessary to integrate artificial intelligence related courses and construct a comprehensive curriculum framework. For the teaching of an introduction to e-commerce, the first step should be to teach e-commerce and its concepts, development history, business models, etc., but at the same time, relevant cases of artificial intelligence technology should be integrated to enable students to understand how artificial intelligence promotes the development of e-commerce, as well as the application scenarios and value of artificial intelligence technology in e-commerce business. When introducing the operation mode of e-commerce platforms, artificial intelligence applications such as intelligent recommendation systems and intelligent customer service are introduced to help students understand how these technologies can improve the user experience and operational efficiency of e-commerce platforms.

When teaching online marketing courses, machine learning algorithms can be integrated to use machine learning algorithms for market segmentation, target customer positioning, and marketing effectiveness prediction. By analyzing user behavior data and market trends, using machine learning algorithms to develop personalized marketing strategies, the accuracy and effectiveness of marketing can be improved. Taking search engine marketing as an example, machine learning algorithms are used to optimize keyword selection and bidding strategies, improving the click through rate and conversion rate of search ads. By analyzing user search behavior

data and utilizing machine learning algorithms, precise keyword matching was achieved, resulting in a 20% increase in click through rates and a 15% increase in conversion rates for search ads.

4.2 Strengthening practical teaching

In response to the problem of single functionality of practical teaching platforms in universities, it is necessary to build an intelligent practical teaching platform. By building a virtual simulation platform, students can immerse themselves in highly simulated commercial operation scenarios. By simulating the real market environment, consumer behavior, and competitive situation of enterprises, students can carry out e-commerce entrepreneurship practices in a virtual environment, comprehensively exercising their entrepreneurial abilities from project planning, market research, product positioning, marketing promotion, and operation management. In the virtual business environment, students need to use artificial intelligence technology for market analysis and forecasting, develop marketing strategies, such as using machine learning algorithms to analyze consumer purchasing behavior and preferences, accurately target customer groups, and develop personalized marketing plans. Students can also practice supply chain management through virtual platforms, optimize logistics distribution paths, reduce costs, and improve operational efficiency.

In response to the shortage of off campus internship bases and the lack of close cooperation between universities and enterprises, universities need to establish long-term partnerships with enterprises in order to better carry out practical teaching. Through school enterprise cooperation, we provide students with abundant internship opportunities. During the internship, students can become familiar with the entire e-commerce operation process and participate in practical projects, accumulating practical experience for them. In intelligent customer service, students can participate in projects to understand the use of natural language processing technology, improve customer service efficiency and quality. In marketing and promotion projects, students can use artificial intelligence technology to conduct precise marketing to target audiences and promote marketing conversion.

4.3 Improving the quality of the teaching staff

Due to the limited knowledge of artificial intelligence among university teachers, it is necessary to establish a comprehensive system for teacher training and further education. Universities should regularly organize teachers to participate in training on artificial intelligence related technologies, through which they can learn various knowledge about artificial intelligence and gain a deeper understanding of cutting-edge technologies and application scenarios. Simultaneously learn natural language processing technology, deep learning, machine learning algorithms and other technologies, and master the application methods and skills of artificial intelligence technology in the field of e-commerce.

Introducing high-level talents with backgrounds in artificial intelligence and e-commerce industry is an important way to enrich the teaching staff of e-commerce majors in universities. Universities should formulate preferential policies to attract experts and scholars in the field of artificial intelligence and senior technical talents from e-commerce enterprises to join the teaching staff. Provide competitive salary and good research conditions, and build a broad development platform for high-level talents. Provide sufficient research funding support to high-level talents, equip them with advanced research equipment and experimental conditions, encourage them to carry out cutting-edge research projects, and contribute to the development of disciplines.

4.4 Optimize talent development plan

In the era of artificial intelligence, the demand for talent in the e-commerce industry presents a composite and innovative characteristic. Therefore, e-commerce majors in universities should closely align with industry demands and develop corresponding talent training programs. Compound talents need to possess the ability to integrate knowledge and skills from multiple fields. At the knowledge level, it is necessary to have a solid grasp of the professional knowledge of e-commerce, including core knowledge systems such as e-commerce operations, online marketing, and logistics management. At the same time, in-depth learning of artificial intelligence related knowledge should be conducted, covering fields such as machine learning, deep learning, and natural language processing. In terms of skills, it is not only necessary to master the operational skills of e-commerce platforms, such as online store construction, product management, customer service, etc., but also to have strong programming abilities, be able to use programming languages such as Python and Java for simple data analysis

and algorithm implementation, and proficiently use data analysis tools such as Excel, SQL, Python data analysis libraries, etc., to conduct in-depth analysis of e-commerce data and explore the commercial value behind the data.

Innovative talents need to possess innovative thinking and practical abilities. Innovative thinking requires students to break through traditional thinking patterns, keenly perceive industry development trends, and dare to try new business models and technological applications. In terms of practical ability, it is necessary to actively participate in various e-commerce innovation practice projects, such as e-commerce entrepreneurship competitions, actual enterprise projects, etc., and continuously improve one's innovation ability and problem-solving ability through practice. Being able to use artificial intelligence technology to develop new e-commerce application scenarios, optimize product recommendation systems using machine learning algorithms, and improve the accuracy and user satisfaction of recommendations; Alternatively, by combining natural language processing technology, an intelligent customer service system can be developed to improve customer service efficiency and quality.

5. CONCLUSION

The arrival of the era of artificial intelligence has brought unprecedented development opportunities to the e-commerce industry, while also posing severe challenges to the talent cultivation of e-commerce majors in universities. Through in-depth analysis of the problems faced by the current talent cultivation of e-commerce majors in universities, this article proposes a series of targeted reform paths, including updating the curriculum system, strengthening practical teaching, improving the quality of the teaching staff, and optimizing talent cultivation plans. By implementing these reform measures, high-quality e-commerce professionals who can meet the needs of the artificial intelligence era can be cultivated, providing strong talent support for the innovative development of China's e-commerce industry.

However, the reform of talent cultivation models is a long-term and complex process that requires joint efforts from universities, enterprises, and all sectors of society. Universities should actively adapt to the needs of the times and constantly explore and innovate talent training models; Enterprises should strengthen cooperation with universities to provide practical platforms and practical needs guidance for talent cultivation; Society should create a favorable environment for talent development and promote the deep integration of artificial intelligence and e-commerce. Only through collaborative efforts among all parties can we cultivate more outstanding e-commerce professionals and help China achieve greater development achievements in the field of e-commerce in the era of artificial intelligence.

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