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IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE DIGITAL LOGISTICS MANAGEMENT

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The rapid development of the digital economy, as well as the integration of artificial intelligence technology and modern logistics, has accelerated the logistics industry's digital transformation. This paper examines the current state of digital technology in the logistics industry and proposes a novel study of «artificial intelligence + logistics management» to provide guidance for the digital transformation of logistics enterprises in China and Belarus.

Keywords: digital economy; digital transformation; artificial intelligence (AI); logistics management; logistics enterprises.

ВНЕДРЕНИЕ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В УПРАВЛЕНИЕ ЦИФРОВОЙ ЛОГИСТИКОЙ

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Стремительное развитие цифровой экономики и интеграция искусственного интеллекта и современной логистики обусловили цифровую трансформацию логистической отрасли. В данной статье анализируется текущая ситуация цифровой трансформации логистики и предлагается инновационное исследование «Искусственный интеллект + управление логистикой», которое задает направление цифровой трансформации логистических предприятий в Китае и Беларуси.

Ключевые слова: цифровая экономика; цифровая трансформация; искусственный интеллект; управление логистикой; логистические предприятия.

The logistics industry is a pioneering, fundamental, and strategic industry that contributes to the growth of the national economy. Enterprises have accelerated their digitalization due to the rapid development of digital technologies, and the emergence of digital technology has fundamentally changed the way goods, information, and finance flow in the supply chain. Third-party logistics is the most common type of logistics in China. According to the most recent China 2022 data, there are nearly 8,000 A-grade logistics enterprises and only 50 listed logistics companies [1]. Many logistics companies are still struggling with the digital transformation. For example, the cost of transformation is high and businesses are «unwilling to transform», digital technology application capability is limited and «cannot transform», and the transformation cycle is too long and businesses «dare not transform». The digital transformation process of listed logistics companies reveals, to some extent, the maturity of digital transformation of leading logistics companies. Their annual report investment can reflect strategic characteristics and future outlooks, as well as provide experience for enterprise digital transformation [2].

T&D investments in digital transformation of Chinese listed logistics companies

Company Name	T&D investments, RMB billion			Ratio of R&D investment to revenue		
	2019	2020	2021	2019	2020	2021
Sinotrans Limited	1.4	2.27	2.72	0.19%	0.27%	0.22%
S.f. Co., Ltd.	25.6	30.01	36.52	2.29%	1.95%	1.76%
Wuchan Co., Ltd.	2.91	3.72	5.59	0.08%	0.09%	0.1%
Zhilian Co., Ltd.	3.38	3.33	4.29	1.68%	1.55%	1.21%
Hichain Co.,Ltd.	0.15	0.13	0.19	1.2%	1.29%	1.36%

Source: 2021 Report on Digital Transformation Index of Chinese Listed Companies [3].

The control and management of the production process through human-computer interaction based on information processing technology and the use of modern means such as computers and network communication is referred to as digital intelligence. The digital transformation of the logistics industry is bound to revolve around this decision to continuously innovate in the current environment of AI technology. We will position the digital transformation innovation in this paper from the three corresponding directions.

Information management innovation in logistics management. The special information transmission between «customer, core enterprise, and logistics» is always central to logistics information management. First, the ERP system of logistics enterprises is combined with artificial intelligence

technology on the basis of big data analysis and processing functions. Second, the combination of AI-related technology and financial information systems to improve logistics enterprises' financial budgeting capability and financial management.

Logistics management organizational management innovation. First, the enterprise's business operation mode is changed to a customer classification (general customers and quality customers). General customers receive standardized services, while quality customers receive personalized services. Second, logistics enterprises must form a temporary project team to strengthen the function of artificial intelligence technology in relation to business development. Third, when compared to general customers, quality customers are more profitable for businesses and can help them achieve their economic goals. AI technology should be emphasized in all applications in this direction in order to reduce the enterprise's fixed costs.

Cost management innovation in logistics management. Unlike other articles, this paper emphasizes that cost management innovation in logistics management should be based on the principle of combining economics and cost control through the use of artificial intelligence. First, before introducing new equipment, businesses must calculate the return on investment and assess the degree of need for the technology. The impact of current technological patterns should also be forecasted. Second, in order to calculate a more accurate "output/input" ratio, logistics enterprises should monitor and track the economic effectiveness of all equipment during the use of AI equipment.

AI is bound to permeate all industries as an intelligent technology that «can simulate or even surpass human intelligence». As a branch of the service industry, the logistics industry has anticipated the implementation of AI technology. As a result, it is critical to investigate logistics management under AI technology and how to implement it. Following the general trend of integrating logistics and digital development, which contributes to the overall development of the Chinese and Belarussian economies.

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