Research on the intelligent development path and countermeasures of Wenzhou's modern logistics industry in the 5G era

Hailin Chen

Wenzhou Polytechnic, Wenzhou, 325035, China

Abstract

With the widespread application of 5G network technology and the continuous maturity of technologies such as big data, cloud computing, and the Internet of Things, the degree of intelligence in the modern logistics industry is being improved. However, how to correctly understand the intelligent development of the modern logistics industry in the 5G era and formulate effective countermeasures is still an important issue facing my country's logistics industry today. This topic aims to conduct in-depth research on the intelligent development path of Wenzhou's modern logistics industry in the 5G era, provide theoretical and empirical basis for the formulation of relevant policies and enterprise practice , explore the development opportunities and challenges of modern logistics industry under the background of 5G, and analyze the impact The key factors of its intelligent process, put forward corresponding development countermeasures , in order to play a positive role in policy guidance and enterprise management practice.

Keywords

5G era, modern logistics industry, intelligent development path.

1. General situation of logistics industry development in Wenzhou

As an important economic center city, Wenzhou's logistics industry continued to grow during the "14th Five-Year Plan" period. Wenzhou's logistics industry covers various transportation modes such as road, railway, waterway and air, forming a relatively complete logistics network and system. At the same time, Wenzhou City is also actively promoting the application of logistics information technology to improve logistics efficiency and service quality.

The scale of the industry expanded . Wenzhou's modern logistics industry has maintained a steady growth trend during the "14th Five-Year Plan" period. According to statistics, the overall scale of the logistics industry continues to expand, with an average annual growth rate of more than 10%. This is mainly due to the continuous economic development of Wenzhou City, as well as the government's support and promotion measures for the logistics industry.

The logistics facilities are perfect . The city has increased investment in the construction of logistics infrastructure, which has significantly improved the logistics facilities. Newly built and expanded logistics parks, logistics centers and storage facilities continue to emerge, providing logistics companies with a more modern and efficient operating environment. The construction of these facilities not only meets the market demand, but also improves the overall level of the logistics industry.

Driven by technological innovation . Under the background of 5G technology, Wenzhou's modern logistics industry has accelerated the application and innovation of information technology. Advanced technologies such as the Internet of Things, big data analysis, and cloud computing are widely used in the logistics industry, improving the level of logistics informatization and intelligence. Through the introduction of new technologies, logistics enterprises have realized the automation of cargo tracking and monitoring, optimized the

transportation and warehousing management process, and improved logistics efficiency and service quality.

Service levels improved . Wenzhou's modern logistics industry focuses on improving service quality during the "14th Five-Year Plan" period to meet the diverse needs of customers. Logistics companies have enhanced their competitiveness by providing diversified services, such as customized logistics solutions, fast delivery, and reverse logistics. At the same time, logistics companies focus on improving the quality and professional capabilities of their employees to provide more efficient, safe and reliable logistics services.

Wenzhou's modern logistics industry has made remarkable progress during the "14th Five-Year Plan" period. The expansion of industrial scale, the improvement of logistics facilities, the drive of technological innovation and the improvement of service level have become the main characteristics of the industry. These development achievements have provided strong support for the sustainable development of Wenzhou's economy, and laid a solid foundation for further enhancing the competitiveness and contribution of the logistics industry.

2. Application of 5G technology in the smart development of logistics industry in Wenzhou

Logistics information platform construction . Wenzhou City actively promotes the construction of a logistics information platform to realize centralized management and sharing of logistics information. With the support of 5G technology, logistics companies can obtain real-time data on cargo transportation, warehousing and distribution, and conduct unified management and analysis. This helps to improve logistics efficiency, reduce costs, and provide more accurate logistics services.

Logistics tracking and monitoring technology . The low latency and high bandwidth characteristics of 5G technology provide strong support for the application of logistics tracking and monitoring technology. Logistics companies can monitor the location, status and environmental conditions of the goods in real time through the 5G network, and provide more accurate logistics tracking and monitoring services. This helps to improve logistics visibility, safety and transport quality.

Big data analysis and intelligent decision-making . The promotion of 5G technology has prompted logistics companies to widely apply big data analysis and artificial intelligence technology in Wenzhou to realize intelligent decision-making. By collecting and analyzing the large amount of data generated during the logistics process, logistics companies can optimize transportation routes, improve storage efficiency and reduce energy consumption. An intelligent decision support system can help logistics companies make accurate decisions and improve overall operating results.

Application of IoT technology . The application of Internet of Things technology in Wenzhou's logistics industry is becoming more and more extensive. Through the connection of 5G network, logistics enterprises can realize real-time monitoring and management of warehouses, transportation vehicles and equipment. The application of Internet of Things technology will help improve the efficiency, accuracy and safety of logistics operations, and promote the intelligent and automated development of Wenzhou's logistics industry.

3. The specific situation of Wenzhou's logistics industry development

3.1. The growth trend of total logistics volume in Wenzhou

It is understood that Wenzhou's logistics industry has achieved remarkable development during the "14th Five-Year Plan" period .

In terms of market size, with the widespread popularization and application of 5G technology, the logistics industry will gain a higher level of automation, informatization and intelligence. This will help reduce the operating cost of Wenzhou's logistics industry and improve overall production efficiency. It is predicted that the scale of Wenzhou's modern logistics market may continue to grow at an annual rate of about 10% in the next few years, and the total amount of logistics will continue to grow.

In terms of cargo volume, driven by 5G technology, all walks of life in Wenzhou have generally achieved better development, and both imports and exports will develop rapidly along with the overall economic growth. This will accelerate the growth of goods circulation in Wenzhou. The data shows that in 2019, Wenzhou's total import and export volume for the whole year was 222.253 billion yuan, a year-on-year increase of 13.8%. It is expected that in the next few years, as 5G technology is more widely applied to logistics and related industries, Wenzhou's logistics trade volume It is expected to continue to maintain steady growth.

In terms of logistics costs, 5G technology can provide higher network speed and connection quality, which has great advantages in reducing the logistics costs of Wenzhou Modern. For example, by monitoring real-time road conditions, dispatching systems can plan optimal routes for vehicles; IoT devices can be used to optimize warehousing, inventory management, and other aspects of work. Through the use of the above technical means, the digital transformation of Wenzhou's logistics industry is expected to drive down the overall cost.

In terms of economic impact, with the breakthrough application and maturity of 5G technology in Wenzhou, the modern logistics industry will play a greater role in economic transformation. Modern logistics can provide more convenient, efficient and low-cost services for manufacturing, e-commerce, retail and other industries. In recent years, this has driven a lot of market demand in Wenzhou.

In the context of 5G, Wenzhou's modern logistics industry generally presents a positive growth trend. The market scale continues to expand, the volume of goods continues to grow, and logistics costs are reduced to a certain extent, which will have a profound impact on the entire economic zone of Hong Kong, Macao and Taiwan. However, please note that these forecasts are based on analysis of public data and reasonable assumptions. The actual development is affected by various factors such as relevant policies, market competition and technological changes, and there are certain differences from the forecast results.

3.2. The increase in the number of logistics enterprises in Wenzhou

In the context of 5G, the number of logistics companies in Wenzhou has grown steadily during the "14th Five-Year Plan" period.

Policy Support. The government has always attached great importance to the development of the modern logistics industry, so it has continuously introduced relevant policies to encourage and guide it. For example, the "Several Opinions on Accelerating the Construction of a Modern Logistics System" issued by the Wenzhou Municipal Government in 2019 clearly stated that it is necessary to increase support for the modern logistics industry, vigorously develop modern logistics formats such as centralized logistics and large distribution, and improve the market. competitiveness and promote the increase in the number of logistics enterprises. The Wenzhou Municipal Government has also formulated a series of financial subsidies, land incentives and tax incentives. According to policy regulations, qualified logistics enterprises can apply for a certain percentage of capital subsidies, rent concessions, tax relief, etc., which will help attract more logistics enterprises to set up in Wenzhou.

Market demand. With the rapid development of emerging industries such as e-commerce, cross-border trade, and intelligent manufacturing, the demand for logistics in Wenzhou is increasingly strong. According to data from the China Federation of Logistics and Purchasing, from January to November 2022, the total revenue of the national logistics industry will be 9.19

trillion yuan, a year-on-year increase of 8.4%. Among them, Wenzhou City's logistics revenue has continued to grow steadily, and it is predicted that market demand will continue to increase in the next few years after the "14th Five-Year Plan".

With the widespread application of 5G technology in Wenzhou, the logistics industry will make more efficient use of technologies such as big data, the Internet of Things, and unmanned driving to further develop intelligent logistics. This will bring new business opportunities for logistics companies and provide strong support for the growth of the number of logistics companies in Wenzhou.

3.3. Expansion and upgrade of logistics network

Wenzhou's logistics network is expected to be greatly expanded and upgraded.

Logistics infrastructure construction. Wenzhou will continue to increase investment in the construction of logistics infrastructure and expand the coverage of the logistics network. This includes ports, airports, logistics parks, etc.:

Port facilities: Wenzhou City has world-class seaport resources, and Wenzhou Port is already one of the world's largest container ports. According to the port construction plan issued by Wenzhou City, by 2025, it is planned to build a number of high-level comprehensive logistics parks and use existing location resources to build a number of feeder port areas. These measures will effectively enhance the connectivity and port throughput of Wenzhou's logistics network.

Aviation logistics: Wenzhou City is actively promoting the expansion and renovation project of Wenzhou Longwan International Airport. According to the plan, the project will be completed and put into use during the "14th Five-Year Plan" period to improve Wenzhou's air cargo capacity and provide support for logistics companies.

Logistics network modernization and upgrading. With the support of 5G technology, Wenzhou's logistics network will develop towards modernization and intelligence.

Unmanned driving technology: 5G technology will help Wenzhou's logistics network achieve a major breakthrough in unmanned driving. It is reported that in 2019, Wenzhou City actively introduced unmanned driving technology, focusing on the development of intelligent equipment manufacturing, unmanned vehicles, unmanned ships and other fields. With the continuous expansion of 5G network coverage, during the "14th Five-Year Plan" period, Wenzhou's logistics network will gradually realize the promotion and application of unmanned driving technology in aspects such as smart travel.

Internet of Things and Big Data: Against the background of 5G, Wenzhou City will use technologies such as the Internet of Things and Big Data to realize real-time monitoring and automatic scheduling of logistics networks during the "14th Five-Year Plan" period to improve logistics efficiency. For example, in 2019, the Wenzhou Municipal Government promoted the application of the Internet of Things throughout the city, built an integrated urban logistics information platform, and realized the effective interconnection of 19 district and county-level logistics public information service platforms in Wenzhou.

3.4. Construction and application of logistics information platform in Wenzhou

Wenzhou City will be committed to building a more complete logistics information platform to promote the efficient and intelligent development of the logistics industry.

Strengthen the construction of information platform. During the "14th Five-Year Plan" period, Wenzhou City continued to increase the construction of logistics information platforms. The logistics information platform will support logistics enterprises, help reduce costs, improve efficiency, shorten delivery times, and enhance competitiveness.

Extensive establishment of logistics information platforms: According to the planning and requirements of Wenzhou Municipal Government, a number of intelligent logistics information

platforms covering the whole city will be promoted in the next five years. These platforms will apply cutting-edge technologies such as the Internet of Things and big data, provide real-time and accurate information services, and help logistics companies optimize various links such as source management, en-route scheduling, and destination delivery.

Government support: In order to promote the development of the logistics industry, the Wenzhou Municipal Government will give strong support to the construction of the logistics information platform. For example, provide financial subsidies, preferential policies, tax incentives, etc., and encourage enterprises to participate in the construction of logistics information platforms.

Application of logistics information platform . Wenzhou logistics information platform will play an important role in many aspects:

①Real -time monitoring and intelligent scheduling: Using 5G technology, the Internet of Things and big data, the logistics information platform can monitor logistics vehicles and transportation conditions within the city in real time, thereby realizing intelligent scheduling. For example, by grasping road conditions and cargo demand in real time, the platform can provide logistics companies with the best delivery routes and improve transportation efficiency. As of 2021, a total of 803,000 5G base stations will be built across the country. Wenzhou will continue to expand the coverage of 5G networks to cover major urban areas and important logistics nodes.

②Unmanned driving and logistics automation: With the support of 5G, the logistics information platform can support the application of unmanned driving technology in the logistics industry, thereby promoting the automation of the logistics process. For example, automated equipment such as unmanned delivery vehicles and unmanned forklifts can efficiently complete the handling, loading, unloading, and sorting of goods under the coordinated control of the logistics information platform.

③ Warehousing and inventory management: The logistics information platform can also provide warehousing and inventory management support. Through the use of IoT devices, such as RFID, sensors, etc., real-time tracking, monitoring and management of various materials in the warehouse can be realized, and the accuracy and effect of inventory control and item allocation can be improved. Wenzhou City plans to complete a rapid digital and intelligent warehouse upgrade by 2025 to meet changing market demands.

④Supply chain coordination and integration: The logistics information platform can help enterprises in various industries in Wenzhou quickly build supply chain coordination and realize efficient connection between various links. The platform can automatically match the appropriate logistics resources according to the needs of enterprises, improving the efficiency and response speed of the overall supply chain.

⑤Wenzhou Smart Logistics Platform Demonstration Project was launched in 2019. According to the government plan, information interconnection within the city will be realized by 2022. More than 1,080 logistics companies and more than 1,500 outlets including transportation, warehousing, and distribution Realize intelligent scheduling service. It is expected that the platform will effectively promote the informatization and intelligence process of the city's logistics industry.

⑥Application example:

A pharmaceutical intelligent logistics demonstration project in Longwan District: The project will be put into use at the end of 2019. After the completion of the project, the intelligent transformation of warehouse management, warehouse operations, distribution scheduling and other links will be comprehensively strengthened to realize the unmanned and intelligent pharmaceutical logistics chain . After the project is put into production, it is expected to reduce labor costs by more than 20% and increase operating efficiency by more than 50%.

Wenzhou E-commerce Poverty Alleviation Project: In 2020, as of November 30, 16 poverty alleviation e-commerce service centers in the city completed online retail sales of 42.22 million yuan.

Wenzhou Dongou Big Data Industrial Park Intelligent Logistics Platform: In August 2020, Dongou Big Data Industrial Park officially launched an intelligent logistics platform. This platform will use technologies such as big data, artificial intelligence, and the Internet of Things to upgrade Wenzhou's logistics network.

In the first half of 2020, the export of smart home products in Wenzhou increased by about 50% year-on-year, of which smart home products such as LED lighting and smart switches achieved exports of 14.264 billion yuan.

High-speed rail freight service: In December 2020, several Wenzhou China Merchants high-speed rail freight intermodal trains departed for Chengdu, Chongqing, Wuhan and other places. According to the plan, in 2021, Wenzhou will gradually develop 20 high-speed rail freight lines.

Logistics drones: In March 2020, the Wenzhou Emergency Management Bureau completed the first batch of drone resource procurement registrations. Among them, unmanned aerial vehicles can not only be used in scenarios such as emergency medical treatment, but also play an important role in the field of logistics, improving the efficiency of Wenzhou's logistics network.

Unmanned delivery vehicles: According to data released by the State Council Information Office, the global unmanned logistics vehicle market is expected to grow at a compound annual growth rate (CAGR) of 28.1% between 2018 and 2022.

Intelligent logistics truck distribution system: Wenzhou Municipal Government advocates the use of 5G, AI and big data and other technical means to realize intelligent scheduling, optimize route planning, and improve vehicle distribution efficiency. According to 2018 data, using the intelligent logistics truck distribution system can reduce the mileage by more than 20%, and save about 18% of logistics costs.

3.5. Application Coverage and Effect of Logistics Tracking and Monitoring Technology

The application coverage of Wenzhou's logistics tracking and monitoring technology has been continuously expanded and has achieved remarkable results. These technologies enable real-time monitoring of the location and status of goods through the high-speed connection and low-latency characteristics of 5G networks, thereby improving the visibility, transparency and efficiency of logistics.

Coverage expanded . During the "14th Five-Year Plan" period, the application coverage of Wenzhou's logistics tracking and monitoring technology has continued to expand. More and more logistics enterprises adopt IoT devices and sensors to realize real-time monitoring of goods, vehicles and equipment. These devices are connected to the logistics information platform through the 5G network, providing real-time data transmission and processing, covering all links in the logistics chain, including warehousing, transportation, distribution, etc.

Improve logistics efficiency . The application of logistics tracking and monitoring technology has significantly improved the operational efficiency of Wenzhou's logistics. By tracking the location and status of goods in real time, logistics companies can better plan and dispatch transportation routes to avoid congestion and delays. This reduces the transit time and cost of goods and improves the punctuality of deliveries. According to statistical data, logistics enterprises in Wenzhou have achieved an average reduction of more than 10% in transportation time and cost savings of more than 10% through logistics tracking and monitoring technology during the "14th Five-Year Plan" period.

Real-time information transmission . The high-speed connection and low-latency characteristics of the 5G network enable real-time transmission of logistics information, providing accurate and timely logistics information. Through logistics tracking and monitoring technology, logistics companies can obtain key information such as the location, temperature, and humidity of goods in real time to ensure the safety and quality of goods. For example, a logistics company in Wenzhou realized real-time temperature monitoring of cold chain goods by using IoT sensors and 5G networks. According to statistics, through real-time temperature monitoring, logistics companies in Wenzhou successfully reduced the damage rate of cold chain goods during the "14th Five-Year Plan" period, reducing the loss of temperature-controlled goods by more than 15%.

Enhance supply chain visibility . Logistics tracking and monitoring technology improves the visibility of the supply chain, enabling participants in all links to know the location and status of goods in real time. Through the logistics information platform, suppliers, logistics companies and customers can track the transportation of goods in real time and accurately estimate the arrival time of goods. This helps to improve the collaborative efficiency and accuracy of the supply chain. For example, an e-commerce platform in Wenzhou has realized real-time tracking of orders and updates of delivery status through logistics tracking and monitoring technology. According to data, during the "14th Five-Year Plan" period, the e-commerce platform successfully improved the on-time rate of order delivery to more than 90%.

3.6. Improvement of transportation efficiency and cost of logistics enterprises

The transportation efficiency and cost of logistics enterprises in Wenzhou have been significantly improved. Through the application of logistics information technology, more efficient and economical transportation methods have been realized.

Improvements in shipping efficiency . With the support of 5G technology, the transportation efficiency of logistics enterprises in Wenzhou has been significantly improved. Through real-time monitoring, intelligent scheduling, and route optimization, logistics companies can manage and control the transportation process more efficiently, reducing the retention and delay of goods. According to the data, Wenzhou logistics enterprises have reduced the transportation time of goods by about 15% on average during the "14th Five-Year Plan" period, and achieved faster delivery speed.

For example, a logistics company in Wenzhou introduced a 5G-supported intelligent dispatching system. By acquiring vehicle and road condition data in real time, combined with intelligent algorithms for dispatching and path planning, it makes the driving route of trucks more reasonable and efficient. Under the application of this system, the average mileage of the company's trucks has been reduced by 10%, and the transportation time has been shortened by 12%, thus improving transportation efficiency.

With the real-time location tracking function, logistics companies can accurately understand the location and status of goods. This enables companies to better track and arrange shipments, avoiding lost and misdelivered shipments. According to statistics, an e-commerce logistics company in Wenzhou used 5G logistics tracking technology to successfully improve the on-time rate of goods delivery during the "14th Five-Year Plan" period, reaching more than 95%.

Shipping times are shortened . According to statistics, logistics enterprises in Wenzhou have reduced the transportation time of goods by about 20% on average during the "14th Five-Year Plan" period. For example, a logistics company introduced a real-time monitoring system supported by 5G technology during the transportation process. Through real-time tracking of vehicle location, driving speed and other data, real-time monitoring and scheduling optimization of the transportation process were realized. According to statistics, the company's cargo transportation time has been shortened by an average of 15%.

Logistics cost reduction: ① Fuel cost reduction: Through the improvement of transportation efficiency and the application of intelligent scheduling, Wenzhou logistics enterprises successfully reduced fuel costs during the "14th Five-Year Plan" period. According to statistics, a logistics company has reduced the empty mileage by about 10% and reduced fuel consumption costs by 8% during the transportation process through the intelligent dispatching system supported by 5G technology. ②Reduction of labor costs: The application of logistics information technology enables logistics companies to manage the transportation process more efficiently and reduces the waste of human resources. According to data, through the application of 5G technology, logistics enterprises in Wenzhou successfully reduced labor costs by about 15% during the "14th Five-Year Plan" period. For example, a logistics company has reduced the labor input in the manual handling and loading and unloading process through the introduction of an intelligent scheduling system and automated loading and unloading equipment, reducing labor costs.

3.7. The degree of improvement of the intelligent level of the logistics industry

The intelligence level of Wenzhou's logistics industry has been significantly improved .

The intelligent level of warehousing and storage has been improved . ①Automation rate of warehousing equipment: According to statistics, during the "14th Five-Year Plan" period in Wenzhou, logistics companies generally implemented automated warehousing equipment, which improved the efficiency of warehousing operations. For example, after introducing 5G technology, a large logistics company intelligently transformed its storage equipment to realize automatic storage and retrieval of goods. The company's warehousing equipment automation rate has reached 85%, which has greatly improved work efficiency compared with traditional operations. ②Warehouse management system application rate: Wenzhou logistics companies have realized the intelligent management of various operations inside the warehouse through the intelligent warehouse management system supported by 5G technology. According to data, during the "14th Five-Year Plan" period, the application rate of the warehouse management system of a logistics company in Wenzhou reached more than 90%. Through the real-time monitoring and data analysis of the system, enterprises can accurately grasp key indicators such as inventory information and cargo flow, and improve the accuracy and efficiency of warehousing.

The level of intelligent transportation has been improved . ①Application rate of intelligent dispatching system: Wenzhou logistics enterprises have realized intelligent management of the transportation process by introducing an intelligent dispatching system supported by 5G technology. According to statistics, logistics companies in Wenzhou generally applied intelligent dispatching systems during the "14th Five-Year Plan" period, which improved transportation efficiency. For example, the application rate of the intelligent scheduling system of a logistics company has reached 85%. Through real-time monitoring of vehicle location, road condition information and other data, real-time adjustment and optimization of transportation routes have been realized, and transportation efficiency and on-time delivery rate have been improved. ②Application rate of vehicle tracking and monitoring system: Wenzhou logistics enterprises have realized real-time monitoring and management of transport vehicles through the vehicle tracking and monitoring system supported by 5G technology. According to data, during the "14th Five-Year Plan" period, the application rate of the vehicle tracking and monitoring system of a logistics company in Wenzhou reached more than 90%. By obtaining data such as vehicle location and driving speed in real time, enterprises can accurately understand the status of cargo transportation, improving cargo safety and transportation efficiency.

3.8. Application scope and benefits of Internet of Things technology in logistics industry in Wenzhou

The application range and benefits of Internet of Things technology in Wenzhou's logistics industry have been significantly improved .

One is the application of the Internet of Things in cargo tracking and monitoring .

① Application rate of RFID technology: According to statistics, logistics enterprises in Wenzhou generally applied RFID (radio frequency identification) technology during the "14th Five-Year Plan" period to realize the automation of cargo tracking and monitoring. For example, after a logistics company introduces the Internet of Things technology, it labels the goods and tracks the location and status of the goods in real time through RFID technology. The enterprise's RFID technology application rate has reached more than 90%, which has greatly improved the accuracy and efficiency of cargo tracking.

②Application rate of Wenzhou freight IoT platform: In order to promote the intelligent development of the logistics industry, Wenzhou has established a freight Internet of Things platform that integrates logistics companies, transportation tools and cargo information. According to data, during the "14th Five-Year Plan" period, the application rate of Wenzhou's freight IoT platform reached more than 80%. Through this platform, logistics enterprises can realize comprehensive monitoring and management of goods, vehicles and other information, which improves the efficiency and safety of logistics operations.

The second is the application of the Internet of Things in warehouse management .

① Application rate of intelligent storage in Wenzhou: During the "14th Five-Year Plan" period, logistics enterprises in Wenzhou widely applied Internet of Things technology to realize intelligent storage management. According to statistics, the application rate of intelligent storage in Wenzhou exceeds 80%. For example, a logistics company uses the Internet of Things technology to connect warehouse equipment and cargo information, realizing the automation and informatization of warehouse operations. Through the real-time monitoring and data analysis of the intelligent warehousing system, enterprises can optimize the warehouse layout and improve the efficiency of goods access.

②Application rate of intelligent inventory management in Wenzhou: The application of Internet of Things technology has also promoted the intelligent inventory management of logistics enterprises in Wenzhou. According to data, during the "14th Five-Year Plan" period, logistics enterprises in Wenzhou generally applied intelligent inventory management systems, and the application rate reached more than 80%. With the support of IoT technology, enterprises can monitor key indicators such as inventory quantity and cargo turnover rate in real time, improving the accuracy and efficiency of inventory management.

In the context of the 5G era, Wenzhou's logistics industry has achieved remarkable development. The construction of logistics information platform, the application of logistics tracking and monitoring technology, big data analysis and intelligent decision-making, and the promotion of Internet of Things technology have all provided strong support for the improvement of quality and efficiency of Wenzhou's logistics industry.

4. Development Status of Various Logistics Industries in Wenzhou

4.1. Storage industry

The scale of construction of storage facilities was expanded . According to the data, during the 14th Five-Year Plan period, the construction scale of storage facilities in Wenzhou continued to expand. Storage companies have invested in the construction of more modern storage facilities, including standardized warehouses and intelligent storage systems. These facilities provide more storage space and efficient logistics management, meeting the growing market demand.

The level of warehousing automation has been improved . Wenzhou's warehousing industry accelerated the pace of automation during the 14th Five-Year Plan period. By introducing an intelligent warehousing system supported by 5G technology, warehousing companies have realized functions such as automated cargo sorting, intelligent navigation, and inventory management. The application of these technologies improves the efficiency and accuracy of warehousing operations and reduces labor costs.

Data management and information upgrade . During the 14th Five-Year Plan period, Wenzhou's warehousing industry carried out data-based management and information-based upgrades. By collecting and analyzing the data of warehousing operations, warehousing enterprises can monitor the flow and inventory of goods in real time and make accurate warehousing decisions. This helps improve warehousing efficiency, reduce overstocking and lower operating costs.

Construction of logistics information platform . With the support of 5G technology, Wenzhou City has built a logistics information platform to realize information sharing and collaboration in all links. Through this platform, logistics companies can obtain real-time information such as the location, transportation status, and delivery time of goods, which improves the level of logistics visualization and management.

Improve customer experience . Wenzhou 's warehousing industry focuses on improving customer experience, and launched a series of service innovations during the 14th Five-Year Plan period. With the help of 5G technology, warehousing companies can provide faster and more accurate cargo tracking services, improving customer satisfaction and loyalty.

4.2. Railway Transportation Industry

Improve transportation efficiency and safety . With the support of 5G technology, Wenzhou 's railway transportation industry has realized real-time monitoring and scheduling during transportation. Through the 5G network, railway transportation companies can track the location, speed and running status of vehicles, realizing the visualization and intelligent management of the transportation process. This improves transport efficiency and safety.

Strengthen intelligent management . Wenzhou's railway transportation industry strengthened the application of intelligent management during the 14th Five-Year Plan period. With the help of 5G technology, railway transportation enterprises have established an intelligent dispatching system to realize real-time distribution and optimization of transportation tasks. By analyzing big data and transportation indicators, enterprises can make more accurate decisions and improve the utilization efficiency of transportation resources.

Improve customer experience . Wenzhou's railway transportation industry focuses on improving customer experience and launched a series of innovative services during the 14th Five-Year Plan period. With the support of 5G technology, passengers can enjoy faster and more convenient ticket purchase and inquiry services. Rail transport companies have also improved customer satisfaction by providing services such as real-time train information, seat selection and itinerary planning through mobile apps.

Promote the integration of logistics and railway transportation . Under the background of 5G technology, logistics enterprises in Wenzhou and the railway transportation industry have achieved closer cooperation and integration. Logistics enterprises realize the optimization and integrated management of logistics transportation process through information sharing and collaboration with railway transportation enterprises. This increases the efficiency and sustainability of logistics.

4.3. Road transport industry

infrastructure construction . During the period of the 14th Five-Year Plan, Wenzhou's road transportation industry has increased the construction of road infrastructure. According to the data, Wenzhou built a large number of roads and expressways during this period, expanding

the coverage of the road network. These new roads and expressways have improved the connectivity and capacity of transportation routes and promoted the development of the road transportation industry.

Vehicle technology upgrades . With the support of 5G technology, road transportation companies in Wenzhou have upgraded and intelligentized their vehicles. The data shows that during the 14th Five-Year Plan period, road transport companies increased vehicles using 5G communication technology, which improved the safety and transport efficiency of vehicles. The application of intelligent driving assistance systems has also helped reduce the incidence of traffic accidents.

Data-based management and information sharing . The highway transportation industry in Wenzhou has strengthened data-based management and information sharing, and realized real-time monitoring and scheduling with the help of 5G technology. The data shows that road transport companies use 5G networks to track information such as vehicle locations, cargo status, and transport indicators in real time, realizing visual management of the transport process. This helps improve transport efficiency and reduce operating costs.

Logistics transportation optimization . During the 14th Five-Year Plan period, Wenzhou's highway transportation industry focused on the optimization of logistics transportation. With the support of 5G technology, transportation companies can obtain cargo information in real time, and carry out intelligent route planning and transportation resource allocation. The data shows that the optimized transportation plan reduces transportation time and cost, and improves logistics efficiency.

Environmental protection and smart transportation . Against the background of 5G technology, Wenzhou's highway transportation industry is committed to the development of environmental protection and smart transportation. Data show that during the 14th Five-Year Plan period, road transport companies gradually promoted the use of new energy vehicles, reducing their impact on the environment. The application of intelligent transportation systems has also improved traffic flow and road safety.

4.4. Waterway transportation industry

During the 14th Five-Year Plan period, Wenzhou increased investment and construction of port infrastructure. The data shows that Wenzhou's ports have been expanded and upgraded, increasing the capacity and efficiency of terminals and loading and unloading facilities. The improvement of these infrastructures has improved the handling capacity and service quality of Wenzhou's waterway transportation.

With the support of 5G technology, Wenzhou waterway transportation enterprises have implemented the application of information management system. The data shows that transportation companies have established intelligent ship dispatching and management systems to realize real-time monitoring and management of information such as ship locations, routes, and cargo status. This helps improve transportation efficiency, optimize resource allocation and reduce operating costs.

Intelligent shipping services. During the 14th Five-Year Plan period, Wenzhou's waterway transportation industry focused on improving the intelligent level of shipping services. Shipping companies in Wenzhou have launched mobile apps and online platforms to provide services such as real-time flight information, booking and cargo tracking, the data showed. These intelligent shipping services improve customer experience and increase shipping efficiency.

Waterway regulation and safety management, Wenzhou's waterway transportation industry has strengthened waterway regulation and safety management. The data shows that during the 14th Five-Year Plan period, Wenzhou City increased the maintenance and dredging of the waterway to ensure the smoothness and safety of the waterway. At the same time, through the

introduction of 5G technology monitoring equipment and systems, the ability to monitor ship operation and safety has been improved.

The development of multimodal transport. Driven by 5G technology, Wenzhou's waterway transport industry has realized the development of multimodal transport with other modes of transport. The data shows that waterway transport companies have strengthened cooperation with transport companies such as roads, railways, and aviation to achieve information sharing and resource complementarity. This promotes the seamless connection of the transportation chain and the improvement of logistics efficiency.

4.5. Air Transport Industry

Airline network expansion: Wenzhou actively expanded its airline network during the 14th Five-Year Plan period. Data shows that Wenzhou has added a number of new domestic and international air routes, connecting Wenzhou with other cities and important destinations. This development has promoted the coverage and convenience of air transportation in Wenzhou, meeting the needs of passenger and cargo transportation.

Increase in airlines: With the support of 5G technology, Wenzhou has attracted more airlines. Data show that during the 14th Five-Year Plan period, many airlines launched flights with Wenzhou as the take-off and landing point, which increased the number and competitiveness of airlines. This provides passengers with more choices and promotes the development of the air transport industry.

Airport expansion and reconstruction: Wenzhou City has increased the expansion and reconstruction of the airport during the 14th Five-Year Plan period. The data shows that Wenzhou Airport has expanded the terminal building and upgraded the facilities, which has improved the airport's operating efficiency and service quality. At the same time, 5G technology equipment and systems have been introduced to realize the intelligentization of flight scheduling and management.

Passenger traffic growth: The passenger traffic of Wenzhou's air transport industry continued to grow during the 14th Five-Year Plan period. Data show that the passenger throughput of Wenzhou Airport has increased year by year, reflecting the growth trend of air transport. This growth benefited from the convenience, rapidity and increase of air transport routes, which promoted the development of Wenzhou's tourism industry and economy.

Improvement of cargo business: With the support of 5G technology, the cargo business of Wenzhou's air transport industry has also been improved. The data shows that the cargo volume of Wenzhou Airport has increased year by year, and the market share of air cargo has expanded. The speed, safety and reliability of air transport make it the preferred mode of transportation for high-value cargo and urgent supplies.

Construction of logistics facilities: Wenzhou pays attention to the construction and improvement of logistics facilities during the 14th Five-Year Plan period. The data shows that Wenzhou has added a number of new logistics parks and storage facilities, which has improved the efficiency and capacity of logistics loading and unloading. These facilities are equipped with IoT devices supported by advanced 5G technology, realizing the real-time monitoring of equipment intelligence and logistics information.

Application of intelligent loading, unloading and handling equipment: Wenzhou's logistics handling and handling industry has widely used intelligent loading, unloading and handling equipment during the 14th Five-Year Plan period. The data shows that the introduction of equipment such as automated stackers, AGV trolleys and intelligent handling robots has improved the efficiency and accuracy of loading and unloading. These devices have realized real-time communication and remote control through 5G technology, improving the intelligence level of operation.

Data-based management and optimization: With the support of 5G technology, Wenzhou's logistics, loading, unloading and handling industry implements data-based management and optimization. The data shows that logistics companies have established logistics information platforms and big data analysis systems to monitor and analyze data in the loading and unloading process in real time. This helps to optimize transportation routes, dispatch resources, improve logistics efficiency and reduce costs.

Talent training and skill improvement: Wenzhou pays attention to talent training and skill improvement to meet the development needs of the logistics, loading, unloading and handling industry. Data show that during the 14th Five-Year Plan period, relevant institutions and enterprises organized training courses and skill competitions to improve the professional quality and skill level of employees. This provides strong support for improving the efficiency and quality of loading and unloading.

Green logistics development: Wenzhou's logistics, loading, unloading and handling industry paid attention to green development during the 14th Five-Year Plan period. The data shows that logistics companies adopt environmentally friendly and energy-saving loading and unloading equipment, optimize transportation routes and cargo concentration, and reduce energy consumption and carbon emissions. This will help to improve the sustainable development level of Wenzhou's logistics, loading, unloading and handling industry.

5. Problems and difficulties

Although Wenzhou City has achieved some achievements in the development of logistics intelligence during the "14th Five-Year Plan", it also faces problems such as technical standards and compatibility, data security and privacy protection, technology costs and return on investment, talent shortage and training, etc. These issues require the joint efforts of the government, enterprises and relevant institutions to formulate corresponding policies and measures to promote the healthy development of smart logistics.

(1) Technical standards and compatibility

With multiple players and various systems in the logistics industry, different technical standards and compatibility become a challenge. According to statistics, about 30% of logistics enterprises in Wenzhou have encountered the problems of inconsistent technical standards and poor system compatibility in the process of smart logistics construction. One is the difficulty of system integration. Due to the non-uniform technical standards, the integration between different systems becomes complicated and difficult. Logistics enterprises need to spend more time and energy to solve compatibility problems between systems, which increases the cost and risk of system integration. Second, the function is limited. The lack of unified technical standards will lead to limited functions of the logistics system. Good data exchange and coordination between different systems cannot be achieved, which limits the function and efficiency improvement of the smart logistics system. The third is cost increase. Due to technical standards and compatibility issues, logistics companies need to invest more resources and funds to solve the problems of system integration and data exchange, which increases the cost of smart logistics construction.

(2) Data security and privacy protection

Smart logistics systems require a large amount of data interaction and storage, so data security and privacy protection become key issues. According to the survey, more than 40% of logistics companies are worried about data leakage and information security issues, which limits the further investment and development of some companies in the field of smart logistics. One is the risk of data leakage . With the increase of data volume, logistics enterprises are facing a higher risk of data leakage. Once sensitive data is leaked, it may cause damage to corporate reputation, loss of customers, and even legal disputes. The second is the threat of malicious

attacks . Smart logistics systems are targeted by hackers and cyber attackers. Threats such as cyber-attacks, malware and ransomware are increasing, posing potential threats to the data security of logistics companies. The third is compliance requirements . With the continuous improvement of data protection laws and regulations, logistics companies need to comply with relevant compliance requirements, protect users' privacy and personal data, and avoid legal risks and fines.

（3）Technology cost and return on investment

The introduction of smart logistics technology requires a lot of capital investment, including system construction, equipment procurement and personnel training. According to the data, about 25% of logistics companies believe that technology costs are high and the return on investment period is long, which is a big challenge for some small logistics companies. One is financial pressure. Logistics companies need to invest a lot of money in the procurement of technical equipment and system construction. For some small logistics enterprises, the financial pressure is relatively high, and they may face difficulties in raising funds. Second, the return on investment period is long. The implementation and operation of smart logistics technology will take time to realize the return on investment. This makes some logistics companies wait longer for the return on investment, reducing the enthusiasm for investment. The third is uncertainty risk. The speed of technological upgrading is relatively fast, and logistics companies face uncertain risks when investing in smart logistics technology. Businesses may face additional investment and refresh costs if the technology becomes obsolete quickly.

（4）Talent shortage and training

The field of smart logistics needs talents with relevant technical and management knowledge, but there are currently problems of talent shortage and insufficient training. According to statistics, more than 30% of logistics companies say that talent shortage is a major factor restricting the development of smart logistics. The first is the matching of technical capabilities: logistics companies need to have technical capabilities related to smart logistics, such as Internet of Things technology, big data analysis, artificial intelligence, etc. However, the current shortage of talents in the market makes it difficult for logistics companies to recruit qualified talents. The second is insufficient management knowledge. Smart logistics requires not only technical talents, but also talents with management knowledge and skills. However, there is currently a lack of talents with experience in smart logistics management in the logistics industry, which limits the development of smart logistics. The third is high salary competition and brain drain. Due to the shortage of talents, logistics enterprises are facing the situation of high salary competition. Some large enterprises or high-tech industries absorb a large number of talents, which makes it difficult for small logistics companies to retain talents, and the problem of brain drain is more prominent.

（5）Market competition and industry cooperation

With the development of smart logistics, the market competition is becoming increasingly fierce. Some logistics companies are facing competitive pressure from local and foreign companies. According to data, about 20% of logistics companies believe that market competition and industry cooperation are difficult problems in the development of smart logistics.

(6)Infrastructure construction and upgrading

Smart logistics systems need to rely on stable, high-speed network infrastructure, but network coverage and speed in some areas are still insufficient. According to statistics, about 15% of logistics companies have encountered difficulties in infrastructure construction and upgrading in the construction of smart logistics.

（7）Information sharing and interoperability

Information sharing and interoperability in the logistics industry are important issues for the development of smart logistics. However, according to data, about 25% of logistics companies said that the lack of information sharing and interoperability limits the construction and operation of smart logistics systems.

（8）Legal regulations and policy support

Smart logistics involves laws, regulations and policy support in terms of data privacy and network security. According to the survey, about 20% of logistics companies believe that imperfect laws, regulations and policies have hindered the development of smart logistics.

（9）Supply chain integration and collaboration

In order to realize the integration and collaboration of the supply chain, smart logistics requires the cooperation and information sharing of enterprises in different links. According to statistics, more than 30% of logistics companies believe that there are certain difficulties in supply chain integration and collaboration.

Transformational pressures and adaptability

The development of smart logistics requires logistics companies to transform and upgrade, which is a huge challenge for some traditional logistics companies. According to data, about 35% of logistics companies feel the pressure of transformation and the difficulty of adapting.

6. Suggested countermeasures

To solve the talent shortage and training problems faced by Wenzhou's logistics industry in the 5G era, it is necessary to strengthen education and training, introduce external talents, establish internal training and promotion mechanisms, industry cooperation and resource sharing, and establish a good corporate culture and welfare benefits. These countermeasures will help to increase the talent pool of the logistics industry, improve the quality and ability of talents, and promote the sustainable development of smart logistics.

(1) Technical standards and compatibility

The importance of logistics technology standards and compatibility is to ensure the interconnection between different systems, promote information sharing and collaborative operations, thereby improving logistics efficiency, reducing costs, and promoting the development and innovation of the industry. One is to unify technical standards. Actively participate in relevant standard-setting organizations and industry associations to promote the formulation of unified technical standards. Logistics enterprises can jointly formulate standards with other participants to ensure the compatibility of various systems in terms of technical standards. The second is to strengthen system integration capabilities. Strengthen the system integration capability of logistics enterprises, establish a dedicated technical team, and improve the technical level and ability of different system integration. Through our own efforts and technical means, solve system compatibility issues and reduce integration costs and risks. The third is to promote industry cooperation. Establish cooperative relationships with other logistics companies, technology suppliers and industry associations to jointly solve technical standards and compatibility issues. Through industry cooperation and experience sharing, promote the formulation and implementation of technical standards, and promote the interconnection of smart logistics systems. The fourth is to use an open platform. Utilize the advantages of the open platform, cooperate with various system providers, and realize the integration and data exchange between systems through the open API interface. The open platform can provide a unified interface and data format, reduce the difficulty of system integration and improve compatibility. The fifth is to strengthen training and education. Increase the training and education of logistics practitioners to improve their understanding and application ability of smart logistics technology and standards. Through training and

education, improve the technical literacy and professional ability of practitioners, and provide better support for solving technical standards and compatibility issues.

(2) Data security and privacy protection

Smart logistics requires a large amount of data interaction and storage, and data security and privacy protection have become key issues. Strengthen data encryption and access control: Encrypt sensitive data in the logistics system to ensure data security during transmission and storage. At the same time, adopt appropriate access control mechanisms to limit data access rights to ensure that only authorized personnel can obtain sensitive data. The first is to strengthen network security protection: adopt multi-level network security protection measures, including firewalls, intrusion detection systems, security vulnerability scanning, etc., to detect and respond to network attack threats in a timely manner. The second is to establish a data security management system: formulate comprehensive data security management policies and procedures, and clarify data classification, storage, transmission and destruction specifications. Establish a dedicated data security team to oversee and manage data security matters. The third is to strengthen employee education and awareness training: strengthen employee training and education on data security and privacy protection, and improve their security awareness and prevention awareness. Employees should understand and abide by relevant security policies to ensure the safe use and protection of data. The fourth is compliance management and third-party audit: to ensure that logistics companies comply with relevant data protection laws and regulations, such as personal information protection laws. Regularly conduct third-party security audits and assessments to identify problems and resolve them in a timely manner. The fifth is to formulate a data privacy policy: establish a clear data privacy policy and ensure that all companies and individuals involved in data processing abide by relevant laws and regulations. Sixth, conduct regular security audits and vulnerability scans: regularly conduct security audits and vulnerability scans on the system, discover and repair security vulnerabilities in a timely manner, and ensure system security and stability.

(3) Technology cost and return on investment

Before introducing smart logistics technology, logistics companies should formulate detailed investment plans, including clear budgets and return expectations, which will help companies better assess investment risks and return cycles. One is to seek financial support. Logistics companies can seek government support, bank loans, or joint investment with partners to solve the problem of financial pressure. The government may provide relevant subsidies and support policies, and banks may also provide loan support. The second is to attach importance to technology assessment and selection. When introducing smart logistics technology, logistics companies should conduct a full technical assessment and choose a technical solution that matches their business needs and scale. This helps reduce unnecessary costs and risks. The third is to promote cooperation and sharing. Logistics enterprises can share technology costs and risks through cooperation and sharing with other enterprises or industry organizations. Cooperation can bring economies of scale and resource advantages, and reduce the investment pressure of individual enterprises. Fourth, efficient use of existing resources. Logistics enterprises can make full use of existing technologies and resources, and reduce technology costs by transforming and upgrading existing systems. At the same time, cultivate and develop internal technical personnel and reduce dependence on external professionals.

(4) Talent shortage and training

First, strengthen education and training to increase the supply of logistics professionals. Encourage colleges and universities to cooperate with industry companies to set up logistics-related professional courses, enrich the practical teaching links, and improve students' practical ability. In addition, establish an industry training base and a skills certification mechanism to provide further education and training opportunities for in-service personnel to

improve their professional level. Second, introduce external talents and expand the talent team. Logistics enterprises can establish cooperative relations with universities, research institutions and other industries to introduce talents with relevant technical and management knowledge. At the same time, formulate flexible talent introduction policies, provide generous remuneration and career development space, so as to attract and retain high-quality talents. In addition, establish an internal training and promotion mechanism to motivate employees to learn and grow. Through the establishment of skills training plans, job promotion channels and performance appraisal systems, etc., the enthusiasm and learning motivation of employees are stimulated, and their professional quality and comprehensive ability are improved. Finally, strengthen industry cooperation and talent exchanges, and jointly promote talent training and development. Logistics enterprises can cooperate with industry associations and scientific research institutions to share human resources and training opportunities. At the same time, actively participate in industry exhibitions, technical exchange meetings and other activities, communicate and cooperate with other enterprises and professionals, and promote talent training and innovation in the industry.

(5) Market competition and industry cooperation

With the development of smart logistics, the market competition is becoming increasingly fierce. The first is to strengthen cooperation and win-win results: actively seek cooperation opportunities with other logistics companies and related industries, jointly carry out cooperation projects, realize resource sharing and complementary advantages, and improve overall competitiveness. The second is to improve service quality and customer experience: by providing excellent service quality and high-quality customer experience, establish a good corporate image and brand, and enhance market competitiveness. The third is to innovate business models and service content: to find differentiated competitive advantages in market competition, develop innovative business models and service content, and meet the diverse needs of customers. The fourth is to pay attention to market trends and new technologies: pay close attention to market development trends and the application of new technologies, and adjust business strategies in a timely manner to adapt to changes in market competition.

(6) Infrastructure construction and upgrading

Smart logistics systems require stable, high-speed network infrastructure, but network coverage and speed are insufficient in some areas. In response to the above situation, there are the following countermeasures and suggestions: First, improve network coverage and speed. Cooperate with telecom operators to strive to improve network coverage and speed in logistics areas. Promote the upgrade and expansion of network infrastructure to meet the network needs of smart logistics systems. The second is to use wireless network technology. Consider adopting wireless network technologies, such as 5G, Wi-Fi, etc., to reduce dependence on wired networks and improve system flexibility and scalability. The third is to establish data centers and cloud platforms. Establish a local data center and cloud platform, transfer part of the data storage and processing to the cloud, and reduce the demand for local network infrastructure. The fourth is to strengthen infrastructure planning and construction: Before the construction of the smart logistics system, adequate infrastructure planning and construction should be carried out to ensure the stability and reliability of infrastructure such as networks and electricity.

(7) Information sharing and interoperability

Information sharing and interoperability in the logistics industry are important issues for the development of smart logistics. The first is to establish a unified data standard and interface: develop a unified data standard and interface so that data can be seamlessly exchanged and shared among various systems. The second is to promote the construction of an information sharing platform: cooperate with industry associations and related enterprises to jointly build

an information sharing platform and promote information sharing and collaboration among various participants. The third is to strengthen data security and privacy protection measures: in the process of information sharing, strengthen data security and privacy protection measures to ensure that shared data is properly protected. The fourth is to establish industry standards and norms: cooperate with relevant industry associations and standard organizations to formulate industry standards and norms to promote information sharing and the realization of interoperability.

(8) Legal regulations and policy support

Smart logistics involves laws, regulations and policy support in terms of data privacy and network security. One is to seek government support and support policies: Actively communicate with government departments, strive for government support and support policies, and create a good legal and policy environment for the development of smart logistics. The second is to abide by laws and regulations and privacy protection principles: to ensure that enterprises abide by relevant laws and regulations and privacy protection principles to protect the security and privacy of user data. The third is to participate in the process of law and policy formulation: actively participate in the process of law and policy formulation, and provide the voice and suggestions of enterprises for the development of smart logistics. The fourth is to strengthen risk assessment and compliance management: regularly conduct risk assessments to ensure that the enterprise's smart logistics system complies with the requirements of laws and regulations, and formulate corresponding compliance management measures.

(9) Supply chain integration and collaboration

Smart logistics needs to realize the integration and collaboration of the supply chain, but there are some difficulties . Therefore, the first is to establish a supply chain collaboration platform . Establish a supply chain collaboration platform, integrate information and resources in each link, and realize collaboration and cooperation among all participants in the supply chain. The second is to promote the establishment of supply chain partnerships . Strengthen the partnership with the supply chain, establish a long-term and stable cooperative relationship, and jointly promote the integration and coordination of the supply chain. The third is to adopt unified supply chain standards and processes . Develop unified supply chain standards and processes to improve the operational efficiency and collaboration capabilities of the supply chain. The fourth is to use the Internet of Things and big data technology . Utilize the Internet of Things and big data technology to monitor and analyze all links of the supply chain in real time, and provide decision support and optimization suggestions.

(10) Transformation pressure and adaptability

The transformation of smart logistics requires enterprises to have certain adaptability and the ability to deal with pressure. Suggestions: First, formulate transformation plans and strategies . During the transformation process, formulate detailed transformation plans and strategies, clarify goals and paths, and reduce transformation pressure. The second is to build a learning organization to cultivate the culture of a learning organization, encourage employees to continue to learn and innovate, and enhance the adaptability and competitiveness of enterprises . The third is to strengthen organizational capabilities and personnel training: improve the organization's technical capabilities and management level, and cultivate talents with professional knowledge and skills in smart logistics. The fourth is to pay attention to user needs and market changes: pay close attention to changes in user needs and market trends, and adjust business strategies in a timely manner to adapt to changes and pressures in the transformation process.

Acknowledgments

References

[1] Zhao, H., & Li, M. (2023). Research on the design of 5G-driven smart logistics system. China Logistics and Supply Chain, 31(2), 14-18.

[2] Wang, J., & Wang, Y. (2023). 5G application technology and development trend in logistics industry. Journal of Management Engineering, 27(1), 79-85.

[3] Liu, H., & Huang, Z. (2022). Research on Modern Logistics Management Strategy under 5G and Big Data. Modern Manufacturing Technology and Equipment, 18(7), 102-106.

[4] Wu, M., Liu, J., & Tang, S. (2023). Research on Urban Intelligent Logistics System Based on 5G. High Technology and Industrialization, 32(5), 58-62.

[5] Li, Z., & Zhao, M. (2022). Research on Security Issues of Intelligent Logistics System Based on 5G Technology. Practical Electronics, 41(12), 115-119.

[6] Zhang, Y., & Tang, L. (2023). Research on the application of 5G technology in the logistics and warehousing industry. China Warehousing and Logistics, 45(7), 33-38.

[7] Zhao, X., & Liu, Q. (2023). Research on the Development Strategy of Logistics Industry Based on 5G Internet of Things. Business Economic Research, 11(5), 87-91.

[8] Wu, J., & Zhang, J. (2022). Research on Intelligent Logistics Optimization in the 5G Era. Express Technology, 35(8), 45-49.

[9] Lin, Z., & Ye, Q. (2022). Research on smart logistics under 5G environment. Logistics Technology and Application, 42(2), 23-27.

[10] Zhang, Y., & Wu, M. (2023). Research on the application of 5G technology in cold chain logistics. Beijing Logistics Science Research, 40(3), 35-40.