

千方科技
CHINA TRANSINFO



2022

Corporate Social Responsibility Report

China TransInfo Technology Co., Ltd.



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About the Report

This report is the third corporate social responsibility (CSR) report of China TransInfo. Under the principles of objectivity, standardization, transparency, and comprehensiveness, it discloses China TransInfo's CSR work and results in 2022 in detail, as a response to the expectations of stakeholders and a reminder for China TransInfo to better perform its social responsibilities.



Period

This report covers the period from January 1 to December 31, 2022. Some content and data in it may go beyond this period.

Scope

This report focuses on China TransInfo Technology Co., Ltd., including its branches, subsidiaries, and affiliates.

Basis

This report is prepared according to the Guidelines of the Shenzhen Stock Exchange for Standardized Operation of Listed Companies, the Guidance on Social Responsibility Reporting (GB/T36001-2015), and the GRI Standards released by the Global Reporting Initiative (GRI).

References

For the convenience of presenting and reading, China TransInfo Technology Co., Ltd. is referred to as “China TransInfo,” “the Company,” and “us” in this report.

Data

All information and data cited in this report come from the Company's official documents, statistical reports, and financial statements. China TransInfo guarantees that this report contains no false records, misleading statements, or material omissions.

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Chairman's Message

The bustling roads, airports and ports are a symbol of the tremendous resilience, potential and vitality of China's economy. During the "14th Five-Year-Plan" period, smart transportation has grown into a key driver for the country to continue to invest in new infrastructure and speed up the upgrade and development of the digital economy. It is also a pioneering field for the digital economy to take the lead in forming scale effect, injecting constant momentum for high-quality social and economic development.

In the face of the complex and challenging external circumstances in 2022, China TransInfo sought opportunities from crisis and adopted timely policies. Upholding the vision "To make the world safer, more convenient and smarter", we remained steadfast to the path of independent innovation, kept national traffic arteries smooth, and supported the coordinated development of intelligent connectivity and smart cities, fostering an industrial ecosystem of smart transportation and smart IoT, and accelerating the building of the new digitalization landscape of the transportation industry.

As an active player who is extensively and deeply engaged in new transportation infrastructure, China TransInfo leverages full-factor big data governance capabilities, full-stack cloud-edge-device technologies and products, industry-finance integration and innovative practices to construct a strategic ecosystem from smart transportation to smart IoT, from key AI algorithms to intelligent sensors, and from intelligent manufacturing to smart hubs and cloud-edge-device products. Taking urban renewal as an opportunity, we deploy smart transportation system to build a unified, coordinated and interconnected smart urban traffic management system, so as to substantially improve traffic efficiency, and ensure safe and orderly travels, thereby making communities more livable and people happier. In 2022, China TransInfo officially launched

the new generation of urban transportation infrastructure "Kunchao-Dual- Smart Interaction". Acting on the philosophy of cutting cost and improving efficiency, it contributed to the coordinated development of intelligent connectivity and smart city, and delivered intelligent intersections, fully meeting the existing needs for traffic management and urban construction as well as the interactive needs for the future era of autonomous driving.

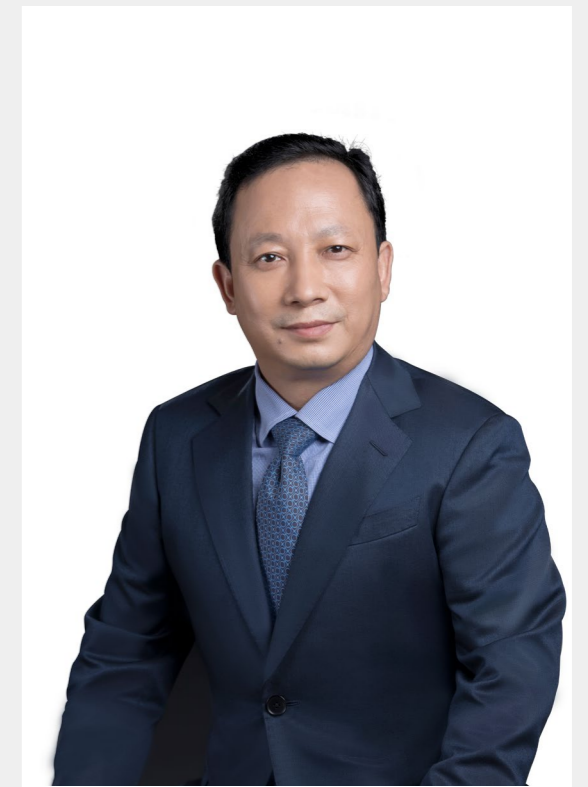
Echoing the goals of "carbon peaking and carbon neutrality", we always stay committed to lowering carbon emission in the transportation industry with digital technology, and enabling improved traffic efficiency and reduced carbon emission through integrated big data congestion management. We have innovatively introduced the "Tanhui Transport" scenario, in which we build a green commuting credit reward platform as well as a green and low-carbon transportation system based on collaboration, participation, and shared interests. By combining the strengths of our products, we have developed a digital and intelligent rural management solution and a Smart Environmental Protection Smoke Management System, effectively preventing the burning of straw and thereby lowering air pollution. We have proposed nature-based solutions to explore the journey toward biodiversity conservation with our own distinct characteristics. As parts of our efforts to practice the green and environmental philosophy, we promote green office measures and encourage green commuting among employees.

We firmly believe that technological innovation is the source of corporate development. That is why we support the robust development of our core businesses with intensive R&D investment, and drive the innovative development of the smart transportation industry with forward-looking philosophy and continued breakthroughs in innovative technologies. We make ongoing efforts to optimize our

innovation mechanism, stimulate innovation momentums, actively promote the commercialization of technological achievements, and attach great significance to cultivate high-value patents. In 2022, China TransInfo invested RMB1.111 billion in R&D and possessed 4,571 IPRs. In total, we have undertaken 59 national and provincial key projects, participated in formulating 1 international standard, 1 national standard, and led the preparation of over 60 industry standards and multiple group standards, providing robust support and driving force for the technological development of the industry and the country.

Seeing talents as the main force of the Company's development, we foster an inclusive, respectful, equal, diverse and caring workplace for our people. We respect their legitimate rights and interests, attach great importance to talent retention and cultivation, thereby growing hand in hand with them. We pay close attention to the physical and mental health of our people, and actively respond to their expectations and demands, thereby enhancing their sense of happiness on an ongoing basis. In an effort to continuously give back to the community, we leverage our strengths to create value for society, and extensively engage in social welfare and charity. In 2022, China TransInfo had a total of 7,100 employees and committed RMB7.7175 million to public welfare.

In the years to come, we will further drive the innovative development of smart transportation and smart IoT, facilitate the industrial chain of smart transportation in an all-round manner, advance innovative development of smart IoT in concrete steps, and apply our products and solutions to more smart city scenarios, thereby enabling greater room for the Company's sustainability and offering new ideas for the high-quality development of the industry.



About Us

Company Overview

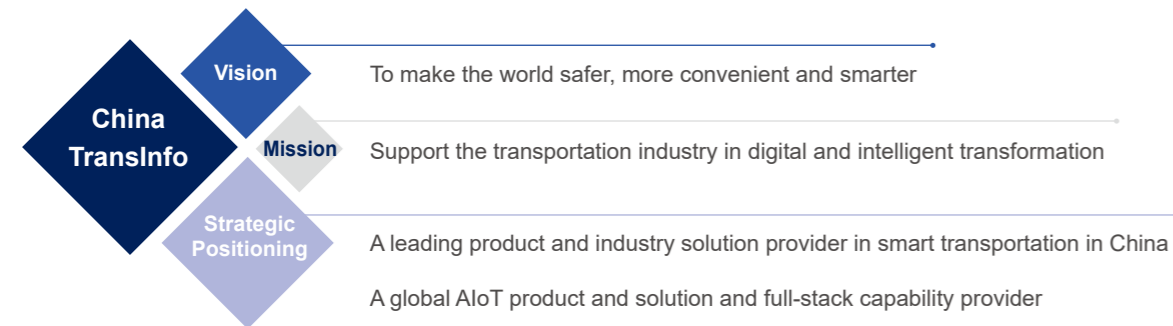
China TransInfo is a leading provider of digital solutions for the transportation industry in China, committed to bringing customers in the transportation industry into the digital world. The Company's continuous efforts to innovate are driven by the vision "to make the world safer, more convenient, and smarter." The Company's mission is to enable the transportation industry's digital intelligence and transformation. The Company provides digital solutions for omni-transportation and creates value for customers in the industry by leveraging its core advantages in the entire value chain of the transportation business, full-stack cloud-edge-device technology, total-factor data, and full-lifecycle services.

With current businesses spanning core areas such as smart transportation, smart traffic management, smart highway, smart road net, smart civil aviation, smart rail transit, smart parking, and intelligent connectivity, the Company provides a full range of services ranging from products to solutions, hardware infrastructure to software intelligent hub, and cloud data to travel ecosystem. By the end of 2022, the Company had completed over 6,000 medium and large intelligent transportation projects and over 1,400 artificial intelligence projects.

The Company is the fourth-largest global provider of AIoT (Artificial Intelligence Internet of Things) products, solutions, and full-stack capabilities, with a focus on the AIoT sector. With panoramic, digital, intelligent IoT products and technologies at its core, it continues to invest in the development of innovative technologies like AI, expands the scope of its AIoT product line, and strengthens its strategic global presence. It enhances the digital transformation of corporate customers, the digital governance of government customers, and the intelligent lifestyle of individual customers.

To maintain its commitment to technology-driven development, the Company has established R&D bases in cities such as Beijing, Tianjin, Shenzhen, Wuhan, Hangzhou, and Xi'an, forming an R&D landscape that includes "three academies, five institutes, and eight centers." It has been certified as a National High-Tech Enterprise, a National Model Enterprise for Technological Innovation, a National Enterprise Technology Center, a National CNAS Laboratory, a transportation industry research and development (R&D) center for intelligent transportation technologies and equipment by the Ministry of Transport, and a key laboratory of IoT application technology by the Ministry of Public Security.

China TransInfo—A Digital Governance Expert in Omni Transportation



Operating Performance in 2022

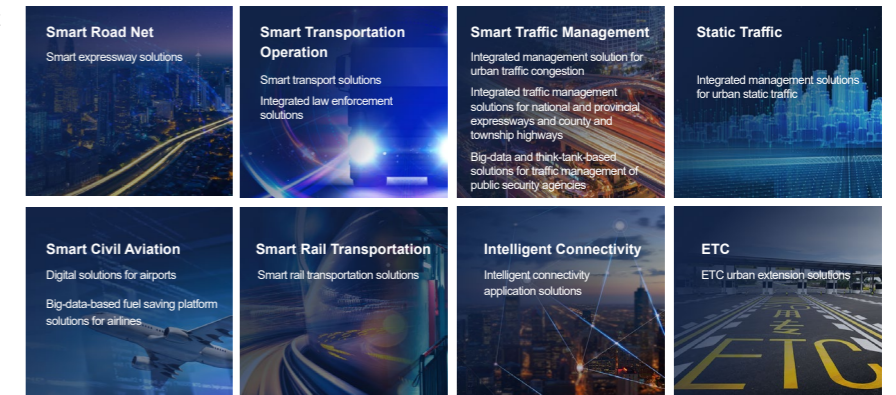
Business footprints in 200+ countries and regions	Served 2,000+ industry leading customers	Operating revenue RMB 7 billion	Tax Payment RMB 474 million
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Business Scenarios

As an active participant in the digital governance of omni-transportation, China TransInfo makes ongoing efforts in the two fields of smart transportation and AIoT, actively exploring what is possible with the application of digital technology in highway, railway, aviation, waterway, and vehicle-road coordination, and ensuring approximately 300 million trips daily.

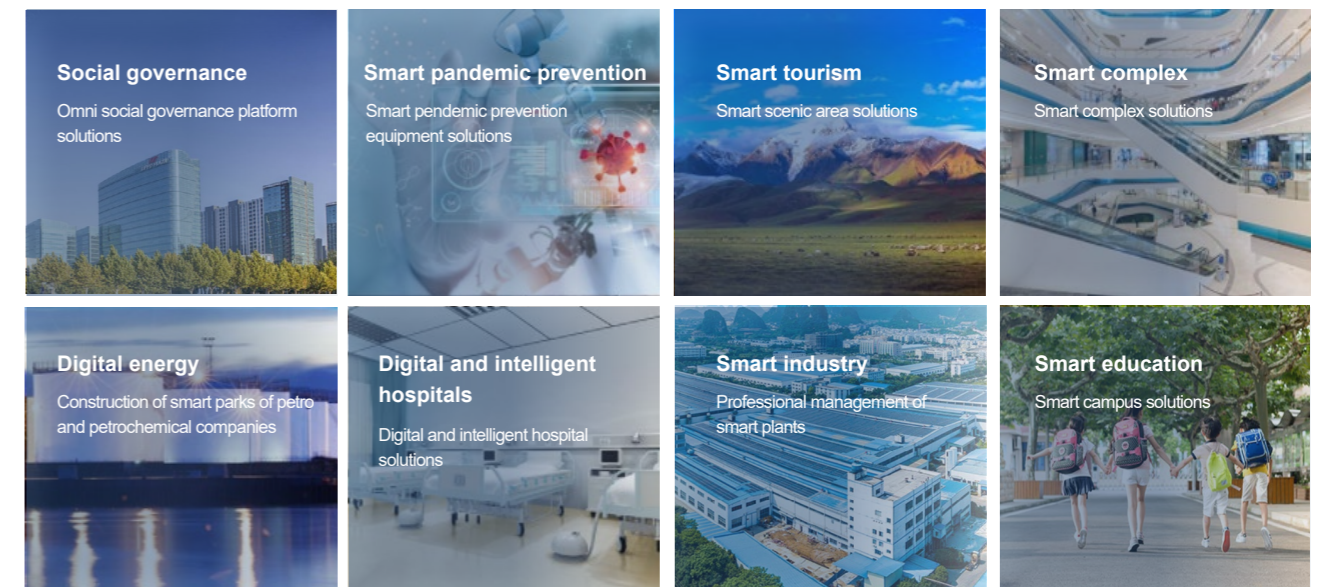
Smart Transportation

We have formed a comprehensive smart transportation business layout, including urban, highway, rail, and civil aviation. Based on the Industrial Internet, we provide industry customers with products, solutions, and innovative services. We offer strong support in the transportation industry's management, decision-making, and public social services. We are also proactive in improving the transportation systems operating efficiency, optimizing traffic management systems, ensuring the safety of transportation operations, and improving the efficiency and experience of public transit.

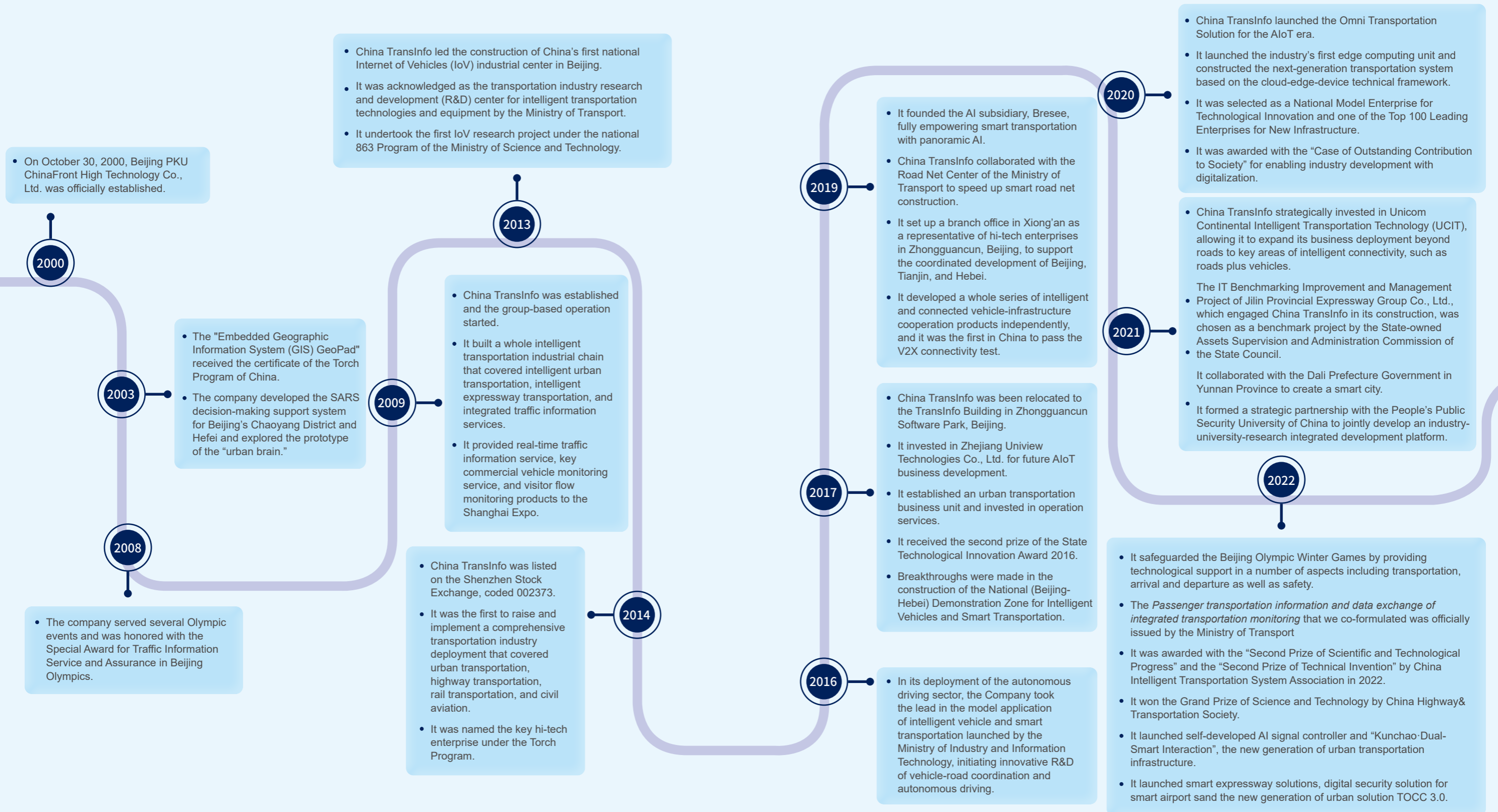


Artificial Intelligence Internet of Things (AIoT)

We offer AIoT products and cloud-edge-device integrated video perception and application solutions. We help governments achieve digital governance reform, empower corporate customers with digital transformation and efficiency improvements, and provide consumers with smart products and services. As a result, we create a safer and better life for everyone, from society to industries to individuals.



History



Awards and Recognitions



2022 National Intellectual Property Advantageous Enterprises

China National Intellectual Property Administration

"TransInfo Intelligent Intersection 2.0: Dual-Intelligent Intersection Solution" was awarded with "Innovated Solution"

ITS China

Model Unit of IPR in Beijing

Beijing Municipal Intellectual Property Office

Shortlisted in the "2022 Top 100 Private Enterprise in CSR in Beijing"

Beijing Federation of Industry & Commerce

Ranked 9th in 2022 Top 100 Cutting-Edge Enterprises in Beijing

Beijing Enterprise Confederation Beijing Entrepreneurs Association

Shortlisted in the Top 100 New Entity Enterprises of 2022

China Enterprise Evaluation Association

The "Intelligent Expressway Demonstration Project of Jilin Province" was awarded with the "2022 Smart Expressway"

China Highway & Transportation Society

Shortlisted in the "2022 Top 100 Private Enterprises in Beijing"

Beijing Federation of Industry & Commerce

Ranked 68th in 2022 Top 100 Enterprise in Beijing

Beijing Enterprise Confederation Beijing Entrepreneurs Association

Ranked 11th in the "2022 Beijing Top 100 Enterprises of Software and Information Technology Service Industry for Comprehensive Strength"

Beijing Software and Information Service Industry Association

Group Member of China Road Safety Association

China Road Safety Association

The Chengdu TOCC system project (phase one) was awarded as the "Outstanding Case of the First National Communication Enterprises Smart Construction and Innovative Practice"

Green and Smart Communication Sub-Association of China Association of Communication Enterprise Management

Shortlisted in the "Top 100 List of Private Technological Innovation Enterprises" in Beijing

Beijing Federation of Industry & Commerce

Ranked 13th in 2022 Top 100 Digital Economy Enterprises in Beijing

Beijing Enterprise Confederation Beijing Entrepreneurs Association

"2022 Beijing Software Core Competitiveness Enterprise (designated size)"

Beijing Software and Information Service Industry Association

Shortlisted in 2022 Enterprise List of "Invisible Champion" List in Beijing

("Invisible Champion" refers to an enterprise that is dedicated to its niche, occupies a major share in the markets at home and abroad, has core competitiveness and a clear strategy, and has advantages that are unlikely to be copied or surpassed.)

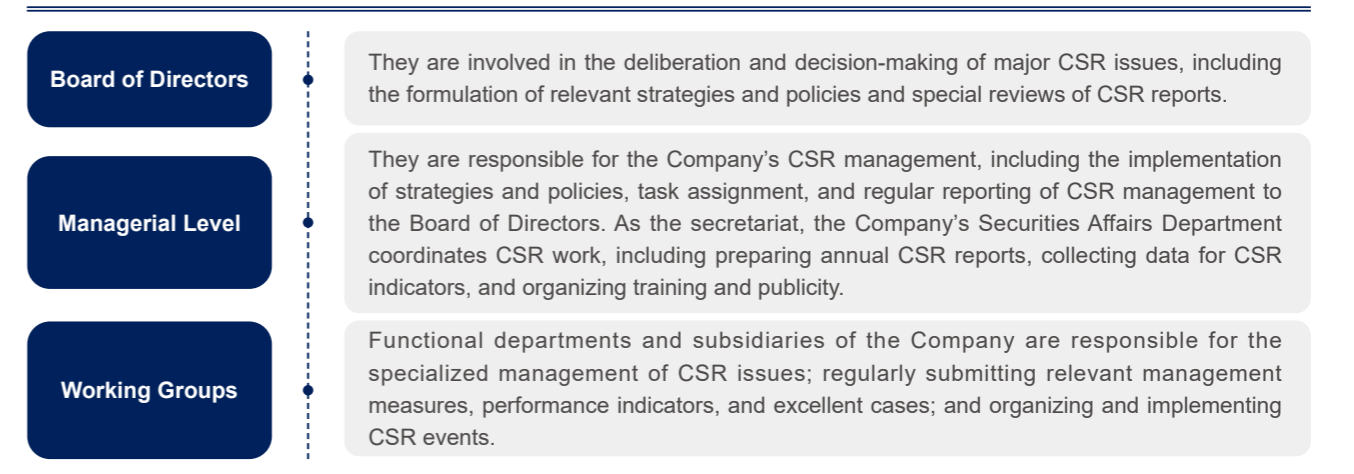
Beijing Municipal Bureau of Economy and Information Technology
Beijing Federation of Industry & Commerce

Responsibility Management

Sustainability is a critical pillar for China TransInfo's future success. We continue to optimize our social responsibility management system, improve CSR information disclosure, and focus on stakeholder communication and cooperation by integrating social responsibilities into the Company's business development strategy and daily operations, fulfilling our responsibilities and commitments with concrete actions, creating values in collaboration with stakeholders, and thus contributing to the United Nations Sustainable Development Goals (SDGs).

Social Responsibility Management Structure

We have established a CSR organization system led by the Board of Directors, organized by the Securities Affairs Department, and implemented by relevant functional departments, specifying the duties of positions at all levels and forming an interconnected CSR network.



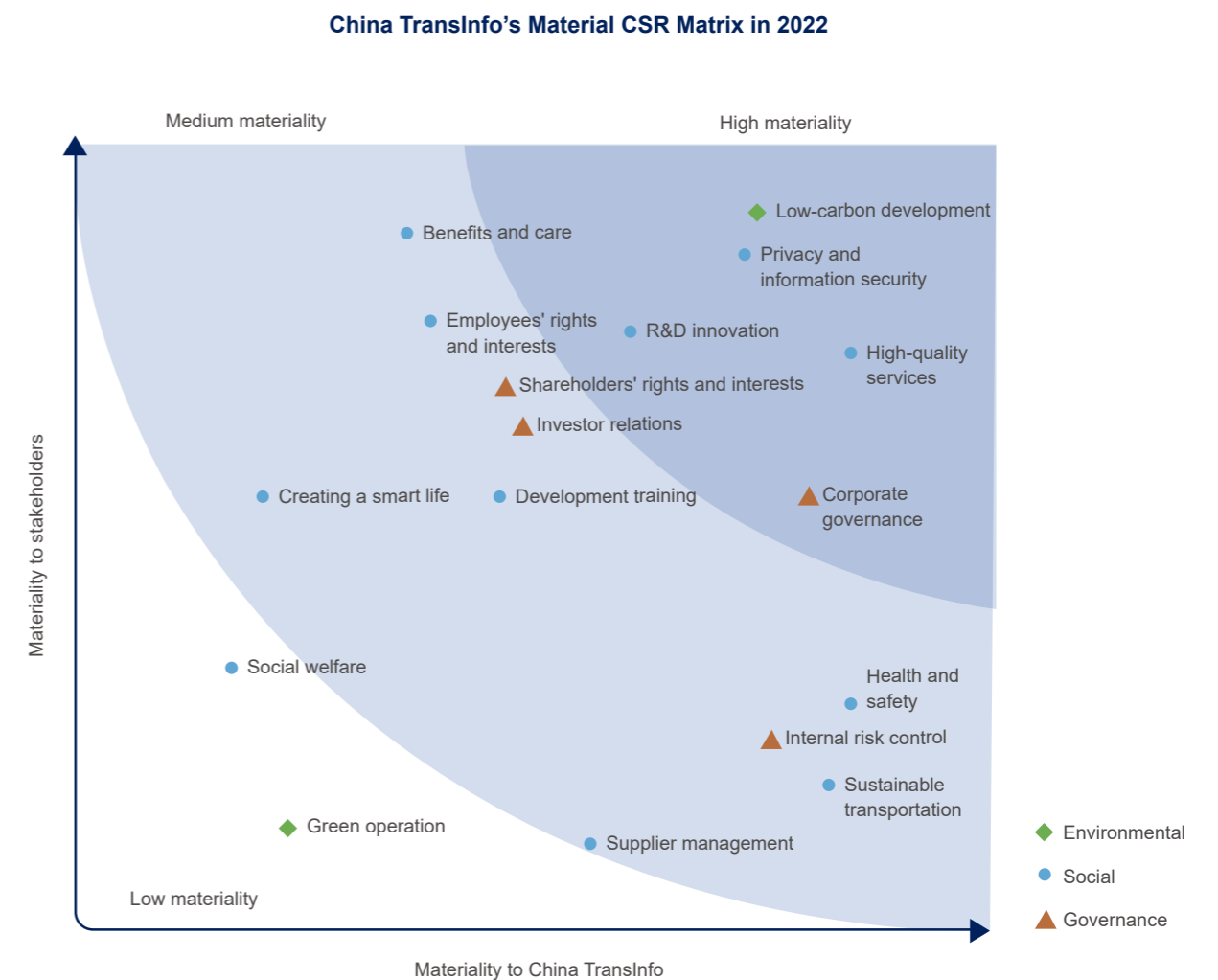
Stakeholder Communication

We pay close attention to stakeholders' expectations and demands, actively listen to their voices, continue to enrich the channels and methods of stakeholder communication and broaden the depth and breadth of communication, aiming for recognition and support from all sides.

Stakeholder	Expectations and Demands	Communication Methods and Response
 Government	<ul style="list-style-type: none"> • Compliance operation • Paying taxes according to law • Technological innovation • Supporting the sustainable development of society 	<ul style="list-style-type: none"> • Compliance management • Paying tax as required • Regular disclosure of business information • Routine communication and reporting • Field inspection and supervision
 Shareholders/Investors	<ul style="list-style-type: none"> • Compliance operation • Return and growth • Risk management • Corporate governance 	<ul style="list-style-type: none"> • General meeting of shareholders • Periodic reports and announcements • Diversified channels for investor communication
 Employees	<ul style="list-style-type: none"> • Salary and welfare guarantee • Health and safety • unimpeded communication • Fair promotion and development opportunities 	<ul style="list-style-type: none"> • Paying salary and funding social insurance in full on time • The management system for occupational health and safety • Career promotion channels • Employee training • Employee representatives' meetings • Daily communication exchanges
 Customers	<ul style="list-style-type: none"> • Product quality guarantee • Providing high-quality services 	<ul style="list-style-type: none"> • The quality monitoring system • Supervision and inspection • Customer satisfaction surveys
 Partners	<ul style="list-style-type: none"> • Keeping promises • Open, impartial, and fair sourcing 	<ul style="list-style-type: none"> • Legal performance of contracts • Open tendering • Project cooperation
 Community and the Public	<ul style="list-style-type: none"> • Supporting social development • Caring for vulnerable groups • Energy conservation and emission reduction 	<ul style="list-style-type: none"> • Targeted poverty alleviation • Charity and public welfare • Green transportation

Determination of Material Issues

Following combined efforts of a thorough analysis of the macro environments of sustainability, such as state policies, industry development trends and focuses of the capital market, compliance with the truthfulness, completeness, and stakeholder participation principles, reference to CSR-related standards at home and aboard, and research and analysis based on industry competitors and stakeholders, we adopted the two dimensions of the “Materiality to China TrnasInfo” and “Materiality to Stakeholders” for comprehensive analysis and determination of the most concerned CSR issues among all sides.



01

Empowering a Beautiful Intelligent World

Staying committed to developing and applying new technologies, China TransInfo integrates extensive industry experiences with digital technologies. In doing so, it continuously creates a beautiful and intelligent society leveraging AI technology, meeting traffic management and urban development needs, thereby fostering a people-centric living environment.

Our Actions

- More efficient traffic management
- Safer traffic assurance
- Greener ecosystem
- More organized city operation
- More intelligent industry development
- More livable smart community

Our Achievements

6%

improvement in road traffic efficiency in the northwestern area of CBD, Chaoyang District, Beijing.

12%

reduction in the number of traffic accidents in Jiangxi Province.

27%

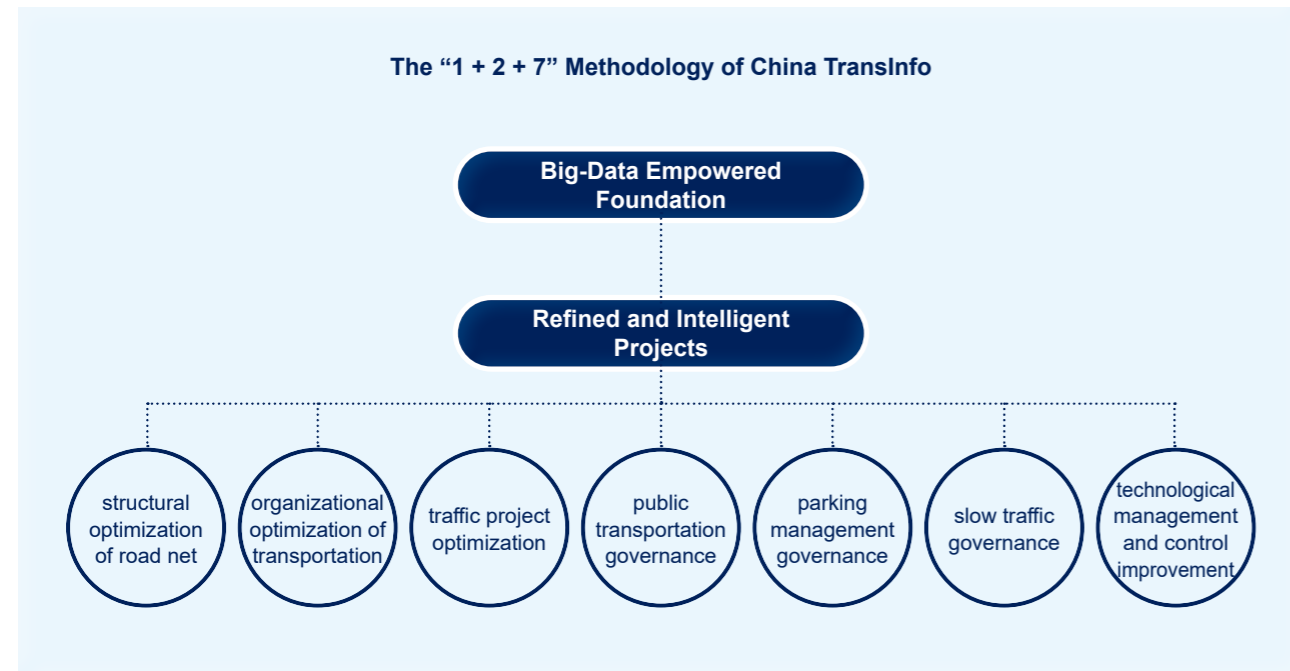
reduction in fatalities due to traffic accidents in Jiangxi Province.

Contributing to the United Nations Sustainable Development Goals (SDGs)



More Efficient Traffic Governance

China TransInfo continues to develop its omni-transportation digital solution. Based on the “1 + 2 + 7” methodology, it effectively addresses urban traffic problems such as congestion, disorder, and travel efficiency. In 2022, we successfully launched **TOCC 3.0** – an integrated Transportation Operations and Communication Center. With “scenario-driven and digital empowerment” as its core, the Center objectively reflects the performance of integrated traffic operations by constructing a unified new information infrastructure, realizing multi-field integrated analysis and decision-making, thereby improving the urban road net’s operational efficiency.



We are actively constructing the next generation of urban transportation infrastructure. We improve the overall efficiency of infrastructure by reshaping physical urban space and organizing digital urban space with intelligent intersections at the core. To create a new generation of “Kunchao Dual-Intelligent Intersection,” we leverage an open, intelligent intersection platform to connect infrastructure with industrial applications, driving the collaborative development of intelligent connectivity and smart urban transportation and fostering a new benchmark of traffic intersection in the era of new infrastructure.

Dual-Intelligence Coordination	Joint equipment building, data sharing, and arithmetic power-sharing of intelligent connectivity and smart urban intersection sensing equipment.
Opening Platform	Integrated and open cloud-edge platform for open decoupling and inclusive expansion, enabling software-defined transportation infrastructure.
Application Empowerment	Focusing on industry eco-application, we meet the emerging needs for urban transportation development.



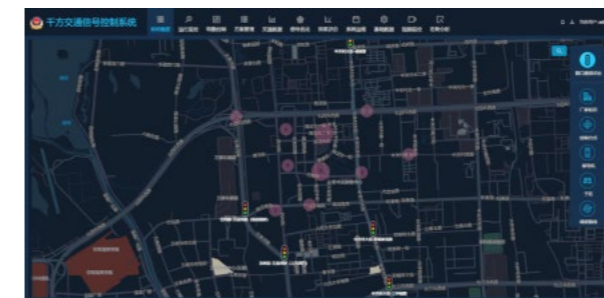
“Kunchao · Dual-Smart” Intersection System

We work non-stop to enrich the application scenario of integrated omni-transportation solutions to meet the core business needs of intelligent connectivity and urban traffic management, contributing our share in addressing urban transportation problems.



China TransInfo’s “Kunchao · Dual-Smart” Intersection Application Scenario

We developed the TransInfo AI signal controller for intelligent traffic flow and road occupancy calculation. Through better signal control, we realized optimal key nodes enabled the road net, improving traffic efficiency.



China TransInfo’s Traffic Signal Control System

Highlight Functions of TransInfo’s AI Signal Controller

- 1 Electric police camera access and shared perception for multi-source data integration
- 2 Powerful edge computing capability empowered by AI and holographic detection
- 3 More efficient signal control enabled by diverse scenarios and full time intelligence
- 4 Dynamic match of changes in traffic needs enabled by automatic feedback, visualization and sensing
- 5 Vehicle-road coordination, future-oriented software-defined infrastructure

Smart Travel

We studied the trends and analyzed the causes of urban traffic imbalances through the three dimensions of micro intersections, meso roads, and macro road nets, and fully considered slow-traveling systems and public transportation systems, integrating our field experiences in traffic governance in large cities like Beijing and Hangzhou. This allowed us to provide targeted travel services for various travel modes, creating a people-oriented travel environment.

We used key technologies such as big traffic data and signal coordination for real-time traffic profiling at key intersections in our integrated traffic management of the northwest CBD in Chaoyang District, achieving remarkable improvements in traffic efficiency. Following that, during peak hours, traffic lights at 12 intersections in the area are intelligently regulated, automatically balancing the overall traffic pressure in the area, shortening congested peak hours by 20 minutes, mileage by 1.5 kilometers, and traffic efficiency by around 6%.

Chengdu “Three-Network Integration” Solution

As part of our continued efforts to make green and low-carbon travel more attractive and facilitate interchange for people, we at China TransInfo leveraged TOCC-enabled data on rail, bus, shared bicycle, taxi and online car-hailing to sort out the overall condition and interrelationships of the three-network integration, and propose targeted measures.

Leveraging decades of experiences in TOCC construction, we collected static and dynamic data of “rail, bus and slow traffic” in Chengdu, and conducted real-time monitoring on the operation of the three networks, which includes network connection, station connection and passenger flow. With these efforts, we sorted out the problems in three-network connection from the macro perspective of networks and micro perspective of stations, progressively optimized the layout of bus lines and stations, and dynamically adjusted operational organizations, improving network integration and interchange efficiency, as well as fostering a business closed-loop of “operation monitoring—problem spotting—coordinative optimization—organization and implementation—integrated evaluation”. In doing so, we keep enhancing the service quality of three-network transportation, attracting more people to travel in a green and low-carbon manner.



China TransInfo’s “Three-Network Integration” Solution for Chengdu

Wangjing Intelligent Intersection Solution

Aspiring to improve the technological traffic governance in Wangjing area and deliver refined traffic and travel management, China TransInfo deployed intelligent solutions at 40 intersections in the area, forming a point-to-area road net coverage.

By integrating roadside sensing data, the intelligent intersections in Wangjing realized three-tier cognition consisting of entrance/exit, entrance direction and vehicle lane, keeping abreast with key traffic management data including vehicle trajectory, lane flow, lane saturation, number of delayed parking and the length of queues. At the same time, we deliver real-time processing and timely feedback of radar, video and internet data at intersections by empowering data, computing power and algorithms with roadside sensing equipment. In doing so, we equip each intersection with holographic sensing and intelligent control capabilities, and enabled a variety of capabilities such as traffic hazard management, traffic signal control optimization, traffic organization optimization, accident handling and command service optimization. In doing so, we integrate distributed and centralized urban intelligent traffic management systems, substantially enhancing the control efficiency of urban traffic management.

Smart Highway

In terms of managing the operations of provincial-level road nets, we have developed a full-factor operation monitoring and early-warning system for road nets by integrating data from various sources such as mobile location, freight vehicle networking, video, and weather, allowing us to effectively manage congested toll stations across the country and ensure smooth freight transportation.

We adhered to the omni-governance mindset and approach while constructing the Yanchong smart highway system project, resulting in an intelligent expressway management and decision-making platform combining “construction—management—maintenance—transportation—service,” which is based on advanced applicable technologies such as big data, BeiDou high-precision positioning, artificial intelligence, and vehicle-road coordination, effectively keeping expressways in mountainous regions safe.

Ensuring the Competitions of the Winter Olympics

Yanchong Expressway, the main passage connecting the Yanqing competition zone and the Zhangjiakou competition zone of the Beijing Winter Olympics, is vulnerable to the effects of low temperatures and rainy and snowy weather and is responsible for ensuring the efficient and safe travel of athletes during the Games. China TransInfo used integrated digital management and service to ensure the safety and convenience of expressways in mountainous areas, providing convenient and efficient service for the Winter Olympics.

We gathered information on people, vehicles, traffic flow, and traffic incidents for the needs of the Winter Olympics and combined big traffic data with public security communities, hotels, and parking with building a traffic security brain, providing technological support for the security of the Games. We did this on the basis of the successes we achieved through participation in the Yanqing World Horticultural Expo’s safety assurance project. We utilized the Special Platform of Chaoyang Winter Olympics Traffic Command and Distribution built by the Company to effectively maintain an orderly and safe traffic in the Beijing competition zone during the opening ceremony and competitions of the Winter Olympics, ensuring regular and hassle-free transportation in Beijing throughout the Spring Festival and the Games.



China TransInfo Managing Traffic During the Winter Olympics

Safer Traffic Assurance

China TransInfo remained committed to the traffic safety endeavor in 2022, amassing R&D accomplishments in urban and rural traffic safety governance.

Urban Traffic Safety Governance

To solve urban traffic safety problems, China TransInfo focuses on traffic safety pain points such as intersections, heavy trucks, and electric bicycles.

As an integral part of the road traffic system, intersection bears heavy traffic flows and is seen as the bottleneck of road traffic safety for their “throat-like” characteristics. According to the sampling statistics of China’s urban traffic accidents, as high as 30% of accidents took place at intersections, making it imperative to optimize signal controllers and other intersection traffic infrastructures.

After thoroughly examining historical intersection traffic patterns, we identified the traffic issues at intersections regarding organization, signals, and conflicts. We then developed an evaluation report for intersection operations, enabling refined intersection management and governance, allowing for the rational utilization of intersection resources and space for pedestrians, non-motorized vehicles, and motor vehicles, and reducing conflicts by keeping them in their own lanes.

We pioneered the heavy truck safety control platform for large vehicles. We established a core system consisting of comprehensive safety hazard analysis, hidden hazard monitoring, and prevention, and coordinated hidden hazard governance for responsible subjects such as road, vehicle, and enterprises, fully leveraging our strength in heavy truck big data. Meanwhile, in light of the unique safety issues associated with large vehicles, we have specially designed highlighted innovative functions such as freight transit passage analysis, illegal freight passage analysis, high-frequency right-turn intersection analysis, and automatic evidence collection of vehicles with hidden dangers, with a focus on the governance of prominent traffic safety hazards and practical tools for the governance of road traffic safety accidents.

Freight Vehicle Safety Monitoring Project by Traffic Administration Bureau of Jiangxi province

During Jiangxi Province's “One-Hundred-Day Campaign” of public security crackdown and rectification during the summer months, China TransInfo assisted in the targeted rectification of vehicles, enterprises, and roads with hidden safety hazards, as well as the development of a big data safety supervision platform for heavy freight vehicles.

The platform effectively monitors heavy freight vehicles running in its jurisdiction through big data mining and analysis, realizing targeted positioning, prevention, governance, and publicity for heavy freight vehicles with safety hazards by making full use of the data resources in the national heavy freight vehicle safety platform and in light of the supervision needs on traffic security of provincial-level freight vehicles. China TransInfo's five systematic functions, namely road analysis, vehicle analysis, hazard governance, information release, statistical query, and analysis reporting, provided technical assistance to the traffic police team in freight vehicle traffic safety governance. As a result of this program, the number of general road traffic accidents and related fatalities in the province decreased by 12% and 27% year on year, respectively.



China TransInfo's Freight Vehicle Big Data Security Monitoring Platform in Jiangxi Province

Rural Traffic Safety Management

We use intelligent and information technologies to effectively address safety issues faced by peri-urban roads, important national and provincial highways, and expressways as part of our ongoing efforts to optimize safety management solutions for national and provincial highways.

We adopted a “refined plus intelligent” governance method to examine the causes of traffic accidents from the perspectives of people, vehicles, roads, and the environment in line with our philosophy of “consolidating foundation, understanding road situation, and improving technology.” Additionally, we tested a comprehensive approach to managing national and provincial expressway traffic safety that consists of three major projects: an upgrade to the transportation infrastructure, an upgrade to the technology management and control, and a platform for big data-based early warning safety management and control.

Physical Prevention

To avoid accidents and secondary disasters, we minimize unreasonable intersection designs through sight optimization measures and optimize isolation and anti-collision facilities.

Early Warning

We prevent accidents by providing warning guidance and signage at high-risk roads and intersections.

Violation Containment

We use electronic police, signal monitoring, and other technological equipment to reduce traffic violations by pedestrians and drivers, allowing travelers to travel in a safe and orderly environment.

Road Optimization in Guali Town, Hangzhou

To upskill road traffic management and law enforcement as well as address frequent rural traffic accidents, China TransInfo carried out rectifications to roads and intersections with hidden hazards. Focusing on the four elements of people, vehicle, road and the environment, we enhanced traffic safety of Guali Town in an all-round manner in accordance with the “1 + 2” model of rural road traffic integrated management method, i.e., the “Big-Data Based Traffic Safety Early Warning Management and Control Platform”, the “Basic Traffic Safety Improvement Project” and the “Technology and Information Improvement Project”. As a result, road accident fatalities dropped by over 60%, making a remarkable difference.



China TransInfo's Road Perception System—Low Point and High Point Traffic Accident Detection System

We perform real-time and accurate detection of incidents such as spills and snow on roads, illegal retrograde, illegal parking, and pedestrian intrusion, and we notify road administrative personnel in a timely manner for disposal, with an emphasis on R&D of expressway security detection algorithms. With the increasing popularity of smart, intelligent expressway construction, expressway traffic in all Chinese provinces will be safer and more reliable, keeping people safe during their travels.

Highway Modernization Project in Wuxi City

The all-encompassing decision-making system for road modernization has been actively promoted in Wuxi. The system gathers data on traffic dynamics, flows, and accidents using information and AI techniques in order to support the smart brain's decision-making and analysis system and make road nets safer.

In order to achieve this, China TransInfo created and improved algorithms and merged algorithm models to improve the supervision of traffic dynamics, accidents, and roadside construction. This helped highway traffic departments analyze flows and accidents in real-time, which enabled a 30%–50% improvement in police response.



Highway Modernization Project in Wuxi

Greener Ecosystem

According to the Report to the 20th CPC National Congress, a green and low-carbon economy and society are crucial to high-quality development. China TransInfo, as a responsible corporate citizen, uses its strengths to continuously innovate green development. We actively address humanity's shared challenges, protect biodiversity, and ensure a nature-positive future with more efficient traffic congestion solutions and more intelligent technologies.

Green and Low Carbon

We remain committed to improving traffic efficiency and reducing traffic emissions through low-carbon solutions and green technologies. We developed “three-network integration, coordination, and optimization scenarios” to integrate static and dynamic data of railway, highway, and shared path (“three networks”), analyze network linkage data, transit stations, and passenger personas, and identify transport linkage problems from the macro perspective of networks and the micro perspective of stations. Meanwhile, in collaboration with transit companies, we optimized the layout of bus lines and stations, dynamically adjusted the operation, and continuously improved the service quality as well as transfer efficiency of the “three networks,” with the goal of improving the efficiency and experience of green travel for the public, as well as effectively delivering green development and carbon reduction in cities.

In light of big city green transportation development plans, we introduced the “Tanhui Transport” scenario, a carbon credit reward platform for green commuting where users can set up their own carbon accounts. By quantifying and assigning values to users' green commuting, we encourage residents to make low-carbon choices, fostering a green and low-carbon transportation system based on collaboration, participation, and shared interests.

At China TransInfo, we also work hard to provide every village with prevention and control of air pollution. By combining the strengths of our products, we were able to develop a digital and intelligent rural management solution and a Smart Environmental Protection Smoke Management System that are equipped with video identification, sound, and early light warnings, effectively preventing the burning of straw and thereby lowering air pollution.



Green Commuting Credit Reward Platform in Chengdu City

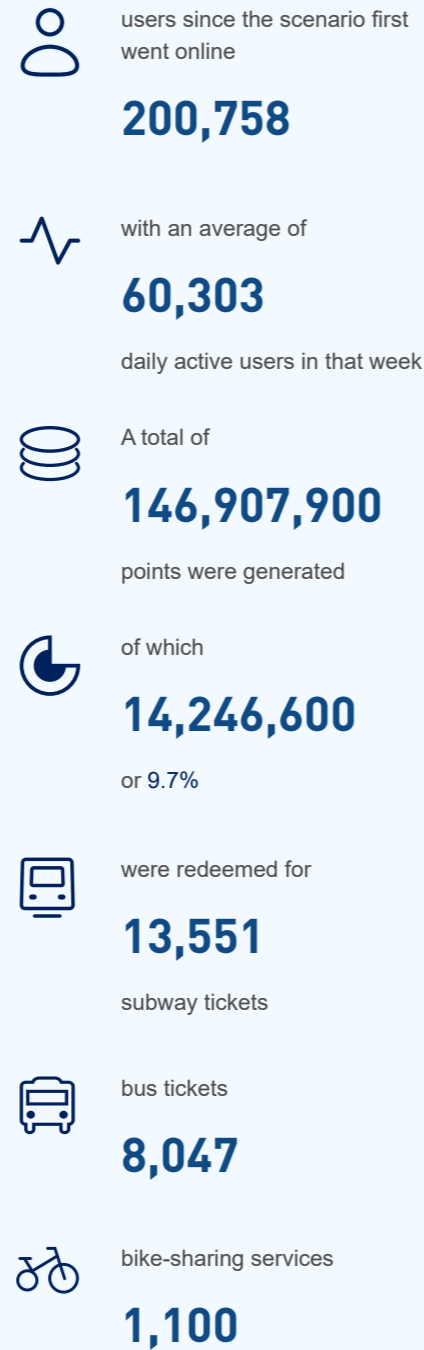
To tackle the problems of insufficient modal share of public transport and effective measures to promote green commuting in Chengdu, we have created the “Tanhui Transport” scenario, which is also known as the “Green Commuting Credit Reward Platform in Chengdu.” By quantifying and assigning values to users’ low-carbon commuting, the platform motivates residents to go green and low-carbon.

Through this platform, residents can easily sign up to be “Tanhui Transport” users and receive credits for taking mass transit, deregistering internal combustion Engine (ICE) vehicles, or participating in relevant activities. A closed-loop green commuting scenario is realized when these points are redeemed for one-way bus, subway, or bike-sharing tickets.

As of January 15, 2023, there had been 200,758 users since the scenario first went online on November 21, 2022, with an average of 60,303 daily active users in that week. A total of 146,907,900 points were generated, of which 14,246,600, or 9.7%, were redeemed for 13,551 subway tickets, 8,047 bus tickets, and 1,100 bike-sharing services. Moving forward, we anticipate using this scenario to hasten Chengdu’s transport structural adjustment and make green commuting the most favorable and dependable choice for locals.



Green Commuting Credit Reward Platform in Chengdu



Nature Positive

At China TransInfo, we have proposed several nature-based solutions to empower nature conservation with technology, and we are embarking on a journey toward biodiversity conservation with our own distinct characteristics.

High-Altitude Facilities Supporting Forest Fire Prevention in Luniao Town, Yuhang District, Hangzhou

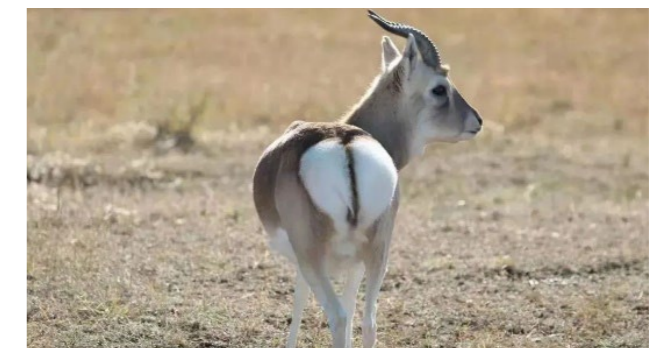
In the forest of Luniao Town, China TransInfo has developed the Digital Intelligent Luniao Platform, which includes five panoramic observation cameras for 24-hour fire monitoring. When a fire is detected, the platform immediately sends out notifications with images of the location and uses intelligence to generate a rescue path and an optimal rescue solution. The platform reduces the workload of forest firefighters and improves patrols and protection, effectively protecting the town’s valuable natural resources.



Facilities in Luniao Town

Digital and Intelligent Solution for Przewalski’s Gazelle Protection

A rare species of wild animal only found in China is Przewalski’s gazelle. It was once acknowledged as the most endangered antelope in the world and classified as endangered by the International Union for Conservation of Nature at the turn of the 20th century (IUCN). China TransInfo aspires to stay abreast of the smallest changes deep in nature and develop more practical and effective protection measures. To this end, it facilitates wildlife protection and observation in Gangcha County and Haiyan County with digital and intelligent products as well as AIoT solutions, growing hand in hand with these “fairies of plateaus” and securing their growth and reproduction.



Przewalski’s Gazelle Protection Project

Supporting the Tangjiahe Nature Reserve - A Paradise for Giant Pandas

Tangjiahe Nature Reserve was one of China's first national demonstration nature reserves. It is primarily a forest ecosystem and wildlife nature reserve for giant pandas, golden snub-nosed monkeys, takins, and their habitats. Experts both at home and abroad regard it as a "paradise for giant pandas", a "homeland of life", and a "natural gene pool."

Over the years, the Tangjiahe Nature Reserve has focused on species protection and nature education, with the goal of developing a nature education mode that is appropriate for the Reserve. Inspired by the popularity of cloud tourism, China TransInfo collaborated with the China Mobile Chengdu Institute of Research and Development to provide products and solutions to the Tangjiahe Nature Reserve. We protect and record the original appearance of the forest and its inhabitants by using an animal monitoring network and a slow live broadcast channel. The institute analyzes the videos with an intelligent algorithm, enabling automatic recognition of rare wildlife with real-time knowledge-sharing, allowing viewers to learn more about wildlife.



Facilities in the Tangjiahe Nature Reserve Protection Projects

Supporting the Wild Birds Protection in Baiyangdian

230 species of wild birds live in the Baiyangdian Lake Basin, among which 10 species are under first class state protection, including Great Bustard, White-naped Crane and Baer's Pochard, and 41 under second class state protection, including Common Crane, Pheasant-tailed Jacana and Black-winged Kite. China TransInfo has deployed intelligent solutions for water management in the Baiyangdian Lake Basin in Hebei province, monitoring the environment of the upstream river basin with the help of intelligent cameras, fully analyzing invasive behavior, and thereby delivering control and management of daily environmental protection across the basin.



Birds Protection in Baiyangdian

More Livable Smart Communities

At China TransInfo, we use technology to empower urban development and contribute to the creation of harmonious cities and smart communities. We have launched numerous product and solution series that are applicable to a wide range of scenarios, including buildings, parks, scenic spots, supermarkets, and urban governance.

Maintaining Social Order

China TransInfo continued to optimize the smart urban governance system in 2022. It aided competent departments in improving urban management and emergency response capabilities, thereby maintaining public social order by upgrading the algorithm and system platforms.

"Xueliang Project" in Ulanqab

In 2022, in an effort to advance the building of the new type of smart city, China TransInfo implemented the "Xueliang Project" in Ulanqab, in which it made full use of the city's big data industry for the construction of Smart Public Security, laying a solid foundation for building Ulanqab into a smart city.

The "Xueliang Project" enables a public safety prevention and control video system featuring "omni coverage, full-network sharing, all-time availability, and end-to-end control". Through data sharing, analyzing, mining, researching and judging, the system integrates surveillance videos resources from society and all sectors, so as to serve the city's comprehensive governance, enable digital and intelligent businesses, and enhance competent organs in their capabilities of "crackdown, prevention, regulation and control and social service", thereby realizing the transformation of urban security from "control after the incident" to "prevention prior to the incident". With all surveillance video and image information collected, shared and used across all districts and departments, the system plays a bigger role in public service, social governance innovation, national security and social security maintenance, and thereby providing the public a safer and more comfortable urban life.



The "Xueliang Project" System in Ulanqab



Driving Rural Revitalization

To provide rural residents a better life and facilitate rural development, we empower rural construction with smart and digital technology, leveraging technology for a more beautiful homeland.

Supporting the Smart Visualization Management System in Qianhuang Village

China TransInfo has developed a smart visualization management system in Qianhuang Village, Yongkang City, Zhejiang Province, empowering rural revitalization for a better life through technology. This solution's subsystem includes video collection and early warning, information release and one-click reporting, parking lot/charging-pile management, and central management. This solution provides all-around and multidimensional information supervision and intelligent management of traffic security, fire prevention and control, water safety, farmland regulation, personal and property safety, and waste sorting, resulting in efficient distribution and digital and intelligent resource management in the village.



Project Facilities in Qianhuang Village

Developing the “Holographic Digital Management Platform” in Xiaojiao Village in the Western Suburb of Sanming City, Fujian Province

In order to effectively upskill smart operation and management in rural communities, China TransInfo teamed up with partners to develop the “Holographic Digital Management Platform”, turning this “thousand-year-old village” a more for livable for the residents and more pleasant to the tourists.



Project Facilities in Xiaojiaocun

More Intelligent Industry Development

At China TransInfo, we actively facilitate intelligent transformation in traditional industries. We empower modern enterprise management for industrial innovation and safe production by providing digital and intelligent solutions.

Smart Agriculture

Through digital innovation, we drive agricultural development. China TransInfo remained committed to developing a digital innovation platform with a “chain chief system” in the agricultural and industrial chain in 2022. The platform monitors the agricultural and industrial chain in real time and enables the connectivity, sharing, and exchange of big data in agriculture, effectively enhancing agricultural modernization.

Intelligent Charging Stations

The number of e-vehicles and accompanying charging stations in China receives a sustained boost from the developing new energy sector, but this is followed by increasingly obvious management problems. China TransInfo actively participated in a regional project to renovate charging stations, improving their general operational effectiveness.

Based on field research and data collection, we suggested using edge computing as the best approach to handle the high bandwidth demand. In the interim, we finished algorithm migration using our in-house development platform and modified the AI visual algorithm for special needs. With our NEV plate identification algorithm, we successfully prevented actions like parking gasoline-powered vehicles in charging stations or preventing vehicles from staying at the station after charging, increasing operational efficiency overall by 60 %.



Intelligent Charging Stations

Smart Gas Stations

China TransInfo remains committed to expanding its smart and safe production practices and has completed projects in a number of provinces, including Shandong, Henan, Shanxi, Sichuan, and Zhejiang. In 2022, the Company took the initiative to equip gas stations with information upgrades and intelligent AI video development.

We extended and enhanced breach detection targeting smoking and phone calls and monitoring and early-warning of abnormalities such as smoke and open fire beyond the front-end surveillance equipment installed in old gas stations. We also extended the process evaluation of the “eight-step method of unloading,” ensuring the safe operation of gas stations around the clock.



The Gas Stations

Smart Parks

Echoing the 14th Five-Year Plan for the Production Safety Plannings of Hazardous Chemicals, we make ongoing efforts to advance safe, intelligent production.

We protect chemical engineering production by analyzing and responding to safety supervision policies, deploying edge and central Visual AI safety supervision equipment, and providing various safety detection algorithms regarding safety helmet, smoking, duty shifts, and falling.

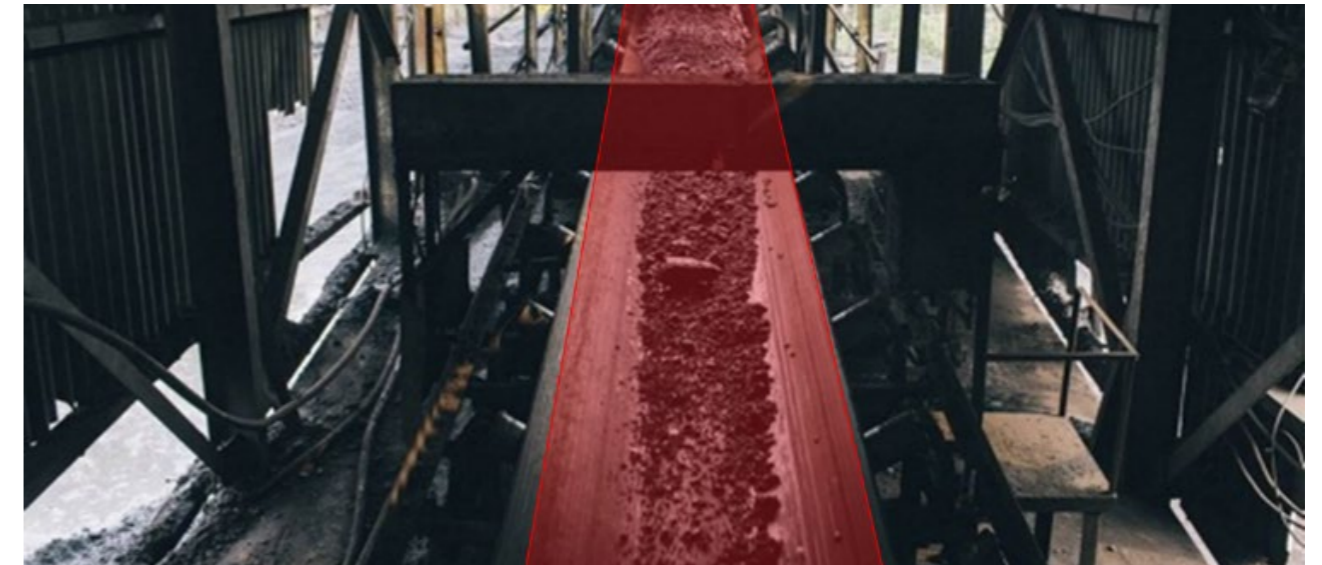


The Backstage Management System of a Smart Park

Smart Mines

China TransInfo will also support the state requirement for “electronic seals” on mines, thereby facilitating mine construction.

We made available algorithms for empty-loaded belt, manned belt, start-stop, foreign objects, and detection on vehicle entrance/exit after studying the inside of mines, allowing factories to control belt conveyor operation according to the load of coal, reducing empty-loaded vehicles and thus significantly improving mine operational efficiency.

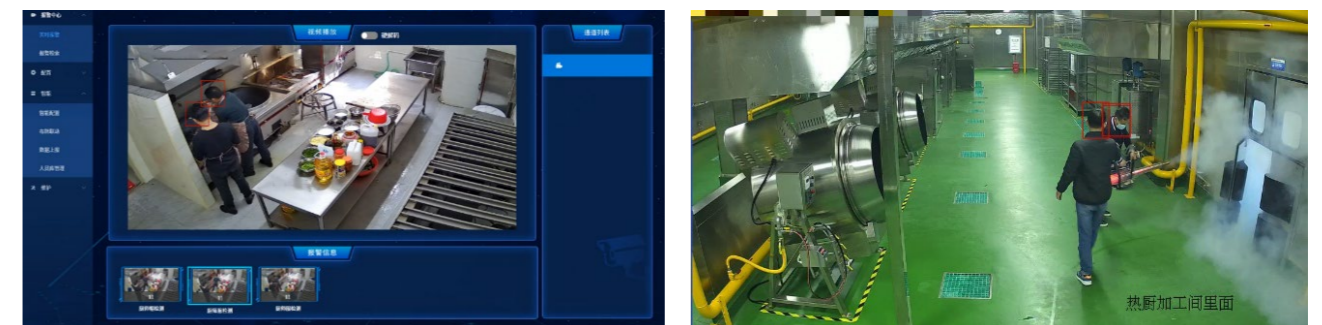


A Site at Intelligent Mines

See-Through Kitchen

Food safety has always been a priority in society and in people’s lives. China TransInfo innovatively introduced products with optimized algorithms on the basis of its see-through kitchen products to intelligently identify and analyze food safety issues such as rats in the kitchen, strangers entering the kitchen, and food-producing and processing employees not wearing hats and masks.

After conducting numerous experiments and market research, we developed new algorithm models to create complete see-through kitchen products. We have installed see-through kitchen intelligent boxes in over one hundred canteens and catering suppliers of primary schools, secondary schools, and kindergartens in Hubei province, and met the regulatory requirements from various sides, including regulatory authorities, schools, and student parents, with real-time video monitoring and catering environment analysis. With these combined efforts, we can prevent catering safety incidents and give students peace of mind when dining.



Surveillance of the See-Through Kitchen Project

02

Building a Highland for Industrial Innovation

Technological advancement is the primary driving force behind social progress and productivity growth. For more than 20 years, China TransInfo has been dedicated to the transportation industry, providing fresh ideas for the industry's development through continuous breakthroughs in technological innovation capabilities and forward-thinking concepts. With significant R&D investment, we support the steady development of our two core businesses, smart transportation, and smart IoT. We are committed to being a promoter of smart transportation industry innovation and development, as well as a contributor to the development of a "country strong in transportation" through digitization.

Our Actions

- Consolidating the foundation of scientific research
- Driving the development of the industry



Our Achievements

R&D investment	Technical personnel	Intellectual properties
RMB 1.111 billion	2,731	4,571

Contributing to the United Nations Sustainable Development Goals (SDGs)

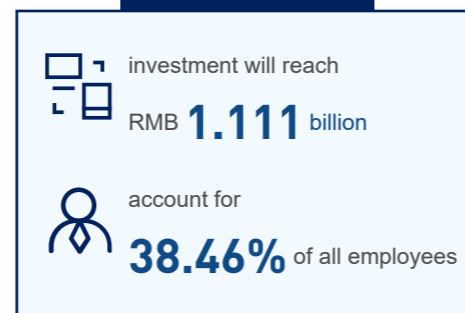


Consolidating the Foundation of Scientific Research

China TransInfo adheres to technology-driven and innovation-powered development, establishes a solid R&D innovation management system, and increases R&D investment continuously. We explore and develop talent in cutting-edge fields, improve scientific research infrastructure, and strengthen scientific and technological R&D capabilities.

Enhancing R&D Capabilities

We will continue to increase R&D investment, build technology innovation platforms, and establish R&D bases in key cities throughout the country, including Beijing, Tianjin, Shenzhen, Wuhan, Hangzhou, and Xi'an, forming an R&D network of "three academies, five institutions, and eight centers." We have national enterprise technology centers, an industry R&D center for "Intelligent Transportation Technology and Equipment" run by the Ministry of Transport, national CNAS-accredited laboratories, a key laboratory for "Police Internet of Things Application Technology" run by the Ministry of Public Security, and other national and ministerial R&D centers and laboratories. This significantly improves our capacity for scientific and technological innovation. Our R&D investment will reach RMB 1.111 billion in 2022, and technical personnel will account for 38.46% of all employees.



Innovation and development in science and technology are inseparable from talent. We place a high value on introducing and developing scientific and technological talent, and we actively promote industry-university-research collaboration. Through university-enterprise collaboration and the integration of production and education, we promote cutting-edge scientific research, gather wisdom from all parties, and jointly accelerate industry progress. In 2022, China TransInfo worked closely with Tsinghua University, Beihang University, and other universities to explore new models of university-enterprise collaboration.

Stimulating Innovative Drive

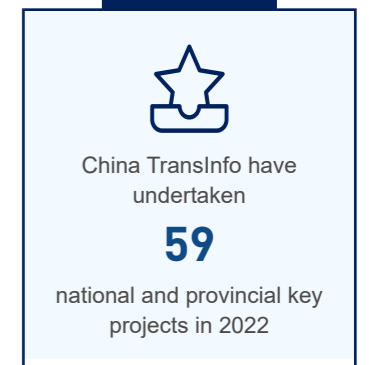
We continuously improve our innovation mechanism, stimulate innovation vitality, and formulate and publish management systems such as the *Scientific Research Project Management Measures*, the *Qualification Management Measures*, and the *Employee Professional Qualification and Title Incentive Measures* to encourage technical personnel to actively participate in project research and development, enhance their professional skills, and activate their innovative drive.

Honors and Awards

- Awarded the title of "National Advantageous Demonstration Enterprise in Intellectual Property"
- Awarded the title of "Model Unit of IPR in Beijing"
- Shortlisted in 2022 Enterprise List of "Invisible Champion" List in Beijing
- Shortlisted in the "Top 100 List of Private Technological Innovation Enterprises" in Beijing
- It was awarded with the "Second Prize of Scientific and Technological Progress" and the "Second Prize of Technical Invention" by China Intelligent Transportation System Association in 2022.
- The "Kunchao·Dual-Smart Interaction" project won the "Innovative Solution" award

Scientific Research and Innovation Achievements

China TransInfo encourages the transformation of technological and scientific advances. We have made significant advancements in important technologies by concentrating on researching, developing, and applying key areas like AI algorithms, big transportation data, and cloud-edge-terminal integration. We took part in the study and creation of the "Beijing BeiDou Integrated Innovation Application Demonstration Project" and the "Leading Application Environment Construction and Scenario Testing and Verification Platform for Connected Vehicles." We created a new kind of intelligent onboard terminal for the following generation of operating vehicle supervision and services through scientific research and application demonstrations. To explore and enable the joint application of road and vehicle at the section, intersection, and lane levels based on BeiDou high-precision positioning technology, we adopted the promotion strategy of "product research and development + system construction + standard development + application demonstration." To provide strong support and stimulation for the development of national science and technology in the industry, we actively engage in key national and provincial projects. China TransInfo have undertaken 59 national and provincial key projects in 2022.



Undertaking the national key R&D program, helping to create new scenarios of intelligent travel

The Company conducts national key R&D on "Urban Smart Travel Service Technology Integration and Comprehensive Platform Development and Application." China TransInfo develops a multi-factor model for multi-industry research and decision-making by efficiently integrating and applying travel data resources from the government, businesses, and individuals. This allows for intelligent mobility research, decision-making, early warning, technology integration, and a comprehensive platform for smart travel services. In the demonstration city of Suzhou, we deploy the overall software platform based on actual operation data and application scenarios. We can provide multi-channel, multi-modal, bookable, and customized high-quality travel services to travelers while also effectively improving transportation efficiency in large cities.

Protection of Intellectual Property

China TransInfo has always prioritized the protection of intellectual property and safeguards the legitimate rights and interests of intellectual property rights holders. We developed the *Measures for the Management of Intellectual Property Rights*, *Measures for the Management of Patents for Service Inventions*, *Measures for the Management of Trademarks*, *Measures for the Management of Copyright Registration*, *Measures for the Reward of Patents for Service Inventions*, and other systems to improve intellectual property management measures, embed intellectual property protection and risk monitoring into the entire process of company operation, such as R&D, production, and marketing, and build an IP risk monitoring mechanism for the whole process of enterprise operation. In terms of collaborative intellectual property protection, we use products as carriers, leverage industry know-how, and coordinate software copyright registration, patent layout, and trademark layout to construct an intellectual property "moat" with multiple stakeholders. We have established a graded trademark management mechanism and built a dynamic trademark monitoring mechanism for core trademarks, ensuring stable core trademark rights related to the main brand through rolling registration and risk mark exclusion.

We focus on developing high-value patents and deploying key core technologies such as traffic data, machine vision, artificial intelligence algorithms, cloud-edge-terminal collaboration, and other application scenarios such as intelligent linkage and smart highway, among others, as part of the "Omni-T2.0 Total Area Transportation Solution," resulting in several patent portfolios. Relevant patent technologies have been transformed and implemented in scenarios such as intelligent linkage, smart highway, and road network operation management, propelling the smart transformation of all intelligent transportation business segments. China TransInfo's core technology patent layout was approved and supported for the first time in 2022 by the "Patent Layout Project for Small and Medium-sized Science and Technology Enterprises."

We concentrate on transforming and applying high-value patents and actively promote vehicle-road collaboration technology in all areas, including smart highways, smart transportation, smart traffic management, smart parking, etc. We validate key technologies to meet the needs of multi-scenario commercial applications through small-scale, multi-scenario, and differentiated deployment of roadside intelligence facilities and V2X communication networks, and relevant patented technologies have been applied and implemented.

Through internal and external training and exchanges, we continued to improve our IP management. To raise the level of our internal team, we invited external lawyers, patent navigation experts, and experts from IPR service associations to conduct communication and exchanges on topics such as corporate IPR management and risk prevention and control, IPR information utilization and technical intelligence analysis, patent layout, and operation trends. In-house training on patent mining and IP protection is organized in accordance with business practices to increase staff awareness and skills in IP protection.



Uniview, a subsidiary of China TransInfo, won the Gold Prize of China Patent Award

The invention patent *A Method and Device for Reliable Transmission and Reception of Media Streams* won the Gold Prize of China Patent Award, making it the first company in the industry to receive this award. The patent helps solve the technical problems of real-time media streams with multiple receiver scenarios, with higher packet loss resistance, lower real-time stream delivery latency, better forwarding path, lower traffic bandwidth consumption, and can effectively reduce the risk of local network congestion. Since its industrialization, this award-winning invention has been applied to various smart city solutions.



Driving the Development of the Industry

China TransInfo actively contributes to the development of the industry innovation ecosystem, strengthens industry communication and exchange, aids industry standardization, and contributes its wisdom to industry innovation and development.

Strengthening Industry Communication and Exchange

We actively communicate and interact with industry organizations and peer companies to boost digital and physical integrated innovation.

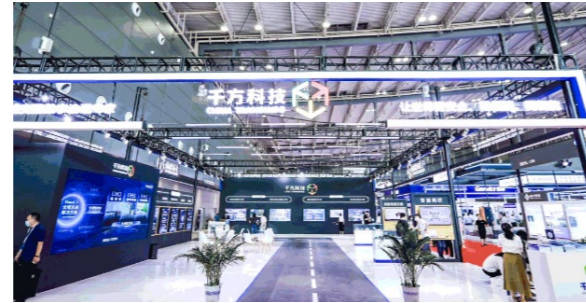
China TransInfo attended the 2022 ITS Annual Conference

In November 2022, the 17th ITC China Annual Conference and 2022 China Intelligent Transportation Conference opened in Chengdu, Sichuan. China TransInfo was invited to share its latest insights on the road to digital transformation of the industry. We showcased its innovative technology applications, product development and implementation achievements in various areas of intelligent transportation, and officially launched the City TOCC 3.0 solution. Based on different business scenarios, China TransInfo shared its practices in the transportation industry in terms of operation digitization and data in operation.

China TransInfo attended the 2022 ITS Annual Conference

China TransInfo attended the 2022 China Expressway Informatization Conference

In July 2022, China TransInfo attend the 24th China Expressway Informatization Conference with partners and members of China Highway and Transportation Society such as Bresee and UCIT. We showcased our innovative technologies and fundamental digital capabilities in the era of transportation digitization, and focused on presenting the innovative services of the whole industry chain from products to full-scenario solutions, from hardware infrastructure to intelligent software hub, from cloud data to travel service ecology in the field of smart highway. We also shared our exploration and practical achievements in building new transportation infrastructure.



China TransInfo participated in the 24th China Expressway Informatization Conference

China TransInfo participated in the research of Beijing specialized and sophisticated SMEs

The research group of Beijing specialized and sophisticated SMEs consisted of members of the Small and Medium Enterprises Bureau and its CPC Committee, the China Academy of Information and Communications Technology and the Youth Theory Study Group of the China Centre for Promotion of SME Development. At the seminar, China TransInfo reported and discussed with the research group from the aspects of enterprise technology research and development, industry-university-research cooperation, digital transformation, loans and financing, and market development. We also summarized the experience and practices of the specialized and sophisticated SMEs and the difficulties faced by the development of the enterprises, while putting forward targeted measures and suggestions to boost the high-quality development of the specialized and sophisticated SMEs.

Boosting the Standardization of the Industry

China TransInfo has contributed to the development of industry standardization and participated in the preparation of the Ministry of Transport's industry-standard JT/T 1421-2022 *Passenger Information Data Exchange Based on Comprehensive Transportation Operation and Monitoring*, which clarifies the logical structure and process requirements for passenger information data exchange based on comprehensive traffic operation and monitoring. At the same time, we took the opportunity of scientific research projects to take the lead in compiling a number of group standards such as *Communication Protocol Specification and Data Format for In-vehicle Terminal of Intelligent Transportation System for Commercial Vehicles* and *Technical Requirements for Intelligent Transportation System Platform for Commercial Vehicles*. In 2022, China TransInfo took the lead in compiling more than 60 industry standards and a number of group standards, as well as participating in the compilation of one international standard and one national standard.

as well as participating in the compilation of

1 international standard

1 national standard

China TransInfo took the lead in compiling more than

60 industry standards and a number of group standards

China TransInfo has led the preparation of several group standards that have been published in industry institutions:

- T CMAX 43001-2022 *Communication Protocol Specification and Data Format for In-vehicle Terminal of Intelligent Transportation System for Commercial Vehicles*
- T CMAX 43002-2022 *Technical Requirements for Intelligent Transportation System Platform for Commercial Vehicles*
- T CMAX 43003-2022 *Data Exchange Communication Protocol for Intelligent Transportation System Platform for Commercial Vehicles*
- T CMAX 43004-2022 *Technical Specification for Intelligent for Terminal of Intelligent Transportation System for Commercial Vehicles*
- T CMAX 21001-2022 *Technical Requirements for C-V2X Oriented Intelligent Transportation Safety Facilities*
- T CMAX 21004-2022 *Test Methods for C-V2X Oriented Urban Road Application Scenarios*

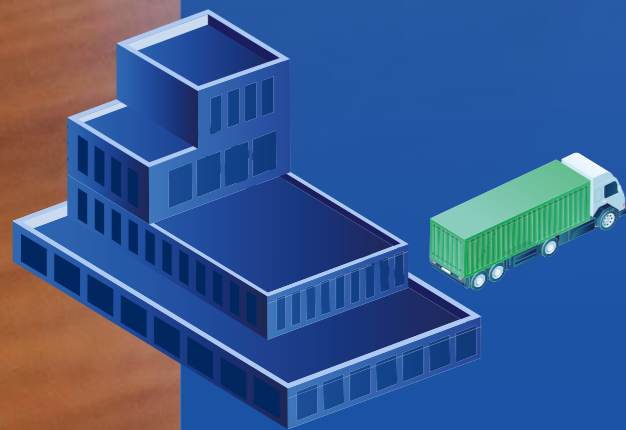
03

Helping Employees Grow and Succeed

We consider our employees to be our most valuable asset. We respect and value every employee's contribution, and we believe that a diverse workforce will better stimulate China TransInfo's creativity and help the Company grow more sustainably and steadily. We strive to provide opportunities for all employees to work and grow in an inclusive, respectful, equal, diverse, and caring environment while maintaining passion and creating value.

Our Actions

- Protecting the rights and interests of our employees
- Supporting the development of employees
- Safeguarding the health of employees
- Caring for employees



Our Achievements

Total number of employees

7,100

Number of new employees

1,476

Employee medical check-up rate

90.94%

Contributing to the United Nations Sustainable Development Goals (SDGs)



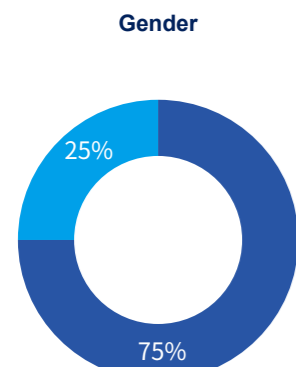
Protecting the Rights and Interests of Employees

China TransInfo respects and protects employees' legitimate rights and interests, continuously optimizes the remuneration and benefits system, enriches employee communication channels, and works with them to grow and progress together with an open, equal, respectful, and inclusive attitude to attract and gather talent.

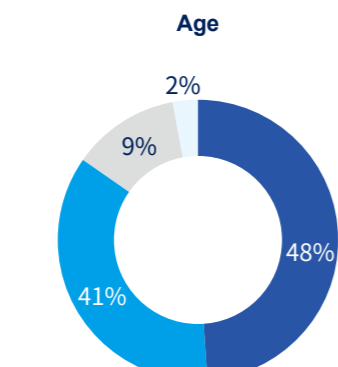
Diversity and Equality

We strictly abide by the *Labour Law of the People's Republic of China*, the *Labour Contract Law of the People's Republic of China*, and other relevant laws and regulations. We oppose any form of employment discrimination and provide inclusive and fair development and promotion opportunities for employees regardless of gender, nationality, age, race, ethnicity, or religion, and we prohibit the recruitment of child labor and forced labor practices.

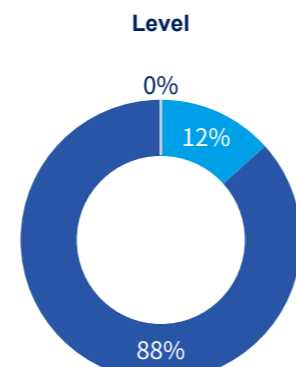
We recruit diverse talent through various recruitment channels to create a dynamic talent pool. We prioritize hiring key talents, core backbone, and outstanding graduates and introducing technical, interdisciplinary, and business-oriented middle management personnel and key backbone talents. We actively establish long-term cooperation mechanisms with universities such as Beijing Jiaotong University, Beijing University of Technology, Xi'an University of Electronic Science and Technology, Chang'an University, Southwest Jiaotong University, and University of Electronic Science and Technology of China, and continue to absorb talents in the new generation by leveraging the advantage of abundant professional resources and outstanding talents in renowned universities.



■ Male ■ Female



■ ≤ 30 ■ 31-40
■ 41-50 ■ ≥ 50



■ High ■ Middle ■ Primary

Remuneration and Benefits

We continue to improve our remuneration management system, insist on equal pay for equal work, and offer competitive remuneration to our employees. We also provide multifaceted benefits and care, such as seven social insurances and one housing provident fund, holiday benefits, birthday benefits, meal allowances, and health check-ups. We collaborate with large housing agents and real estate companies to provide rental discounts to young employees in order to meet their practical needs and enhance their sense of gain and belonging.

Employee Communication

We attach importance to our employees' ideas and needs, and we actively expand the channels and means of communication between employees and management at all levels through the Cloud Home platform, employee seminars, employee satisfaction surveys, democratic life meetings, and representative employee meetings. In order to facilitate feedback channels for employees, we have established a platform for complaints, grievances, and reporting. Employees can lodge formal complaints or reports through a special email address, and the Internal Audit Department will supervise and implement the process of receiving reports from employees to safeguard their legitimate rights and interests.



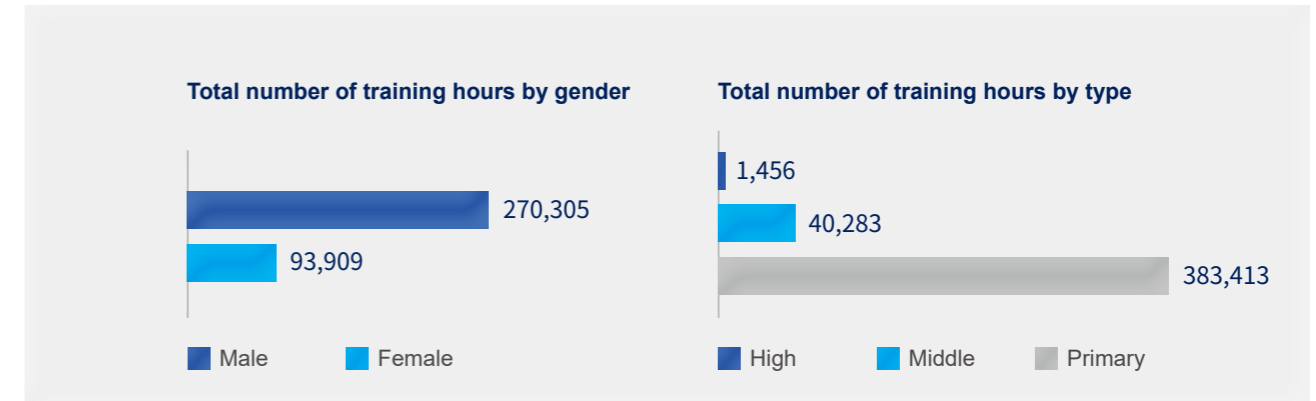
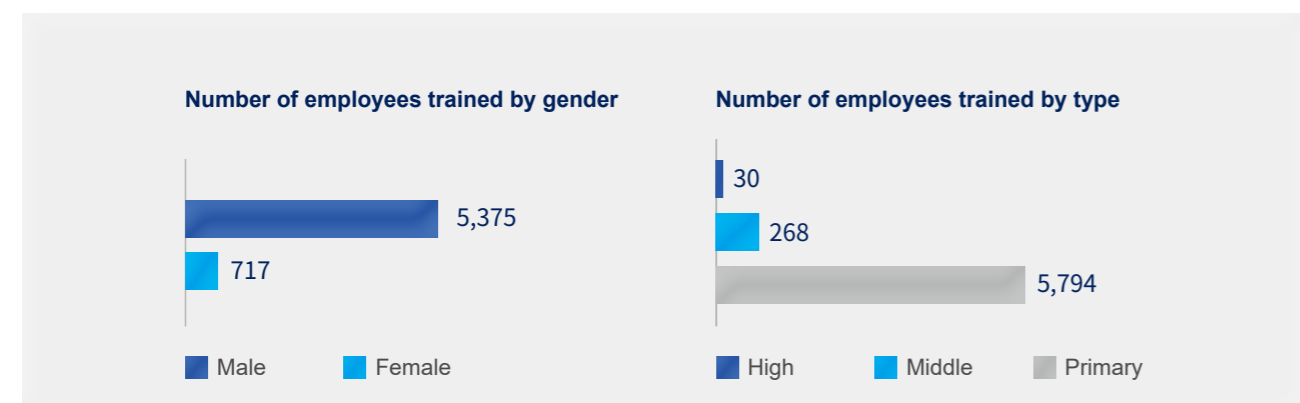
Supporting the Development of Employees

We hope that every employee will be able to utilize their talents in China TransInfo fully, receive high-quality work and development opportunities, maximize their potential, and grow, create value, and develop alongside China TransInfo.

We've created a "dual-track" career development path with two tracks: "professional/technical track" and "management track." China TransInfo provides employees with a broader career development space through a solid position and rank management system and a fair, just, and open competition mechanism. We have formulated the *China TransInfo Technology Co., Ltd. Management Measures for Performance Appraisal* to comprehensively evaluate employees twice a year and provide remuneration and incentives based on the evaluation results, thereby stimulating employees' internal motivation.

We attach great importance to talent cultivation and have established a comprehensive internal and external training system. The aim is to guide more outstanding professional talents through practice, knowledge, and experience sharing. We have formulated multiple differentiated employee development plans, such as the "Spark Program" for technical personnel rotation and practice, the "Cadre Reserve Program" for outstanding managers' development and training, and the "Navigation Program" for high-potential employees and fresh graduates, fully satisfying the development needs of different types of employees. We firmly believe that "the best people cultivate better people" and promote managers at all levels and technical experts to actively participate in training development and teaching, share industry knowledge and practical experience, and help cultivate more outstanding talents. We have created an online learning platform combining live streaming and offline training, allowing employees to learn anytime, anywhere. In 2022, China TransInfo conducted more than 50 training sessions.

To further encourage employees to elevate their professional titles and practice qualification levels, we have optimized the *Employee Practice Qualification and Title Incentive Measures*, providing employees with exam preparation counseling, policy interpretation, registration guidance, and training, encouraging employees to make improvements. In 2022, China TransInfo organized 11 practice qualification exam counseling sessions, with a cumulative number of applicants exceeding 150, and six professional title evaluation training sessions, with a cumulative number of participants exceeding 200.



Safeguarding the Health of Employees

China TransInfo pays attention to the physical and mental health of employees. The Company strictly abides by laws and regulations such as the *Environment Protection Law of the People's Republic of China* and the *Workplace Safety Law of the People's Republic of China*, establishes an internal implementation mechanism, improves the *Environmental and Occupational Health and Safety Management Manual*, the *EHS Laws and Regulations Management Process*, the *Occupational Health Management*, and other systems and documents. We ensure the health and safety of employees from multiple perspectives, including regular employee physical examinations, supplementary medical services, emergency event handling, special high-value insurance, and so on, and we are committed to creating a safe, healthy, and comfortable working environment for employees. China TransInfo had no workplace safety incidents, personnel injuries, or fatalities in 2022.

We regularly organize employees to participate in health examinations, provide medical health consultation services and supplemental medical insurance for employees, manage employees' daily health, and provide various intimate care and services to ensure their physical health. We also value employee psychological growth and development and offer psychological counseling services to help employees cope with stress. In 2022, the physical examination rate of China TransInfo's employees was 90.94%.

We focus on fostering a safety culture. We effectively increase employee safety awareness through training in safety, fire control, occupational health, and emergency management. We also use activities such as fire drills, occupational disease prevention and control law publicity week, safety officer publicity activities, fire control month activities, transportation safety day activities, etc., to improve employee safety and first aid abilities. China TransInfo organized 32 fire drills in 2022 with a total of 1,202 participants.



China TransInfo fire drill



Caring for Employees

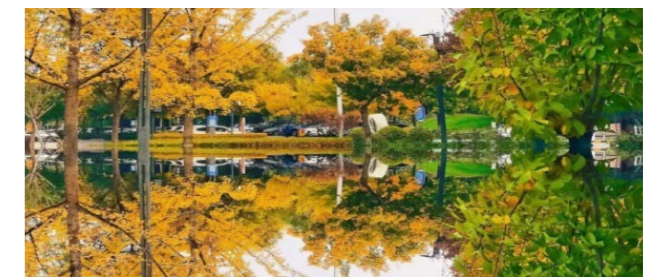
We have physiotherapy rooms, hair salons, laundries, restaurants, cafes, gyms, reading rooms, outdoor basketball courts, and other convenient leisure facilities for our employees. We encourage employees to participate in a variety of team activities in order to improve communication and interaction among employees, as well as to increase team cohesion and employee happiness.

We take into account our employees' needs and extend our concern to their families. To address the issue of inconvenient medical care for older people living in other places, we provide employees with an accompanying medical treatment card, which allows their family members to take advantage of third-party accompanying medical treatment services. At the same time, we work with childcare facilities to provide convenient childcare services for employees so they don't have to worry about their children while at work.

We value the care of female employees and provide special benefits such as workplace training and professional image photography for them. During International Women's Day, we presented roses and holiday gift cards to female employees and organized the "Goddess First" Women's Beauty and Health Seminar, allowing female employees to feel the care of the company fully.



China TransInfo organized the "Goddess First" Women's Beauty and Health Seminar on International Women's Day



China TransInfo held photo collection activity themed "Write a Poem for China TransInfo, Capture the Most Beautiful Autumn View" (Photography works)

04

Jointly Building a Harmonious Ecosystem

China TransInfo pays full attention to the community where it operates and constantly creates value for society by fully leveraging its advantages. We believe that the industry and community ecosystem is the fundamental basis for our sustainable development. While we are developing, we strive to provide help for the community and industry, maintain the sustainable vitality of the community, and inject fresh impetus into society.

Our Actions

- Promoting Public Welfare That Engages Everyone
- Practicing a Green and Low-carbon Lifestyle
- Building a Sustainable Supply Chain



Our Achievements

Investment in public welfare

RMB **7.7175** million

Total number of suppliers

7,546

Contributing to the United Nations Sustainable Development Goals (SDGs)



Promoting Public Welfare That Engages Everyone

China TransInfo strives to become a promoter of sustainable communities. We harness the power of technology, actively practice social responsibility, and extensively participate in social welfare and charitable causes to create a corporate culture and atmosphere that promotes public welfare for all.

Together with public welfare organizations, we help people experiencing poverty and people in difficulty and serve the community through cooperation, continuously bringing positive value to society. In 2022, China TransInfo's total investment in public welfare amounted to RMB 7.7175 million.



We launched the "Love Book Room on the Grassland" book donation project with the Haidian District Education Foundation by purchasing books for the library of Bayanhushu No.3 Middle School in Xing'an League, Inner Mongolia.



We made a targeted donation of RMB 48,000 to the Guizhou Province Education Development Foundation to install ceiling fans in classrooms of Xingren Elementary School in Danzhai County, Guizhou Province, providing a more comfortable learning environment for the children.



As one of the first companies joining the "Science and Technology Education Alliance" in Binjiang District, Hangzhou City, we were awarded the honorary title of "Science and Technology Education Alliance Practice Base", helping Binjiang students develop their scientific and technological skills.



We organized the "Into the Infinite New World of AIoT" study activity. We guided primary and secondary school students to experience the AIoT around them, contributing to the cultivation of future scientific talents. In 2022, China TransInfo received 213 primary and secondary school students for study, and improved their scientific knowledge reserves and scientific literacy.



China TransInfo Organized "Into the Infinite New World of AIoT" study activity



We, together with our partner SVideo, donated 300 sets of jerseys and Uniview technology equipment to the Uruguayan youth football club Baby Futbol Playa Honda, ensuring the safety of the football team's training day and night and supporting young people to achieve their football dreams.



China TransInfo Supported Uruguayan Youth Football Team

We actively organize volunteer activities to give back to society and contribute our value. During the Winter Olympics, we provided strong technical support in transportation, arrival and departure, safety, and environmental protection for the transportation, safety, and environmental protection work of the Beijing and Yanqing venues of the Beijing Winter Olympics, drawing on many years of experience in providing major event support technology and services.



Practicing a Green and Low-carbon Lifestyle

China TransInfo is actively responding to the goal of “carbon peaking and carbon neutrality.” We practice green office practices and promote green environmental protection concepts and lifestyles.

Through measures such as ISO 50001 energy management system and ISO 14001 environment management system certification, energy conservation monitoring, energy audits, internal audits, and management reviews, we optimize our energy management model and environment management system and continuously improve energy utilization efficiency. We install waste gas purification treatment devices based on activated carbon adsorption and canteen fume purification equipment to purify waste gas emissions generated by production and life.

We practice the green office concept and encourage the use of electronic mail instead of paper printing. To reduce resource waste, we encourage the use of recycled paper, replaceable core pens and toner cartridges, rechargeable batteries, and other recyclable office supplies. We promote office automation and process standardization through an ERP system and an online comprehensive office management platform called “Cloud Home,” which effectively reduces the use of paper materials.

We promote green mobility among employees and place charging stations throughout the building to facilitate charging. To reduce greenhouse gas emissions from vehicles, we developed the *Vehicle Management Measures* and standardized the processing of fuel cards with restrictions on oil products and vehicle numbers.



New energy vehicle charging piles installed around China TransInfo's building to encourage green mobility



Building a Sustainable Supply Chain

A sustainable supply chain system is critical for a company's long-term growth. China TransInfo upholds the values of fairness, impartiality, and transparency. We adhere to the requirements of the ISO 9001 and ISO 14001 quality management systems and strive to improve the Supplier Management Measures continually. To further standardize supplier management, we implement strict control mechanisms throughout the entire process, from supplier selection to access and evaluation. The Company improves supplier communication and exchange by organizing supplier quality summary and discussion conferences, improving supplier quality management, and promoting sustainable supply chain development. The total number of company suppliers in 2022 was 7,546, with 7,440 domestic suppliers, 74 Hong Kong, Macao, and Taiwan suppliers, and 32 overseas suppliers.



At the access stage, the Company comprehensively evaluates the supplier from various aspects such as business scale, technical capabilities, quality management system, hazardous substance management system, and environmental management system, and ensures that the supplier's capabilities meet the procurement requirements through on-site inspections, sample testing, and small batch testing, etc.

At the recruitment stage, the Company requires suppliers to sign a *Supplier Integrity Commitment Letter*, which specifies ethical standards for procurement and helps prevent and control disciplinary and legal violations from the source, thereby creating a clean supply chain ecosystem. Specific suppliers must sign a Construction Safety Commitment Letter and an Environment Protection Declaration to control the safety and environmental risks of suppliers strictly.

At the evaluation stage, the Company continuously improves the supplier performance evaluation process, develops evaluation plans and standards, and evaluates and assesses production suppliers on a variety of fronts, including technology, quality (including harmful substances), responsiveness, cost, delivery, environment, and occupational health and safety, ensuring an objective and truthful reflection of the supplier's comprehensive performance and assisting suppliers in continuing to improve.



05

Achieving Steady Operations

China TransInfo is a firm believer in the importance of good corporate governance in creating long-term value. We work hard to establish a solid foundation for corporate governance and to continuously improve the quality and effectiveness of corporate governance. We strengthen risk management, adhere to business ethics, and protect information and data in order to ensure the enterprise's smooth and efficient operation.

Our Actions

- Corporate Governance
- Business Ethics
- Internal Risk Control
- Information Security



Our Achievements

Held Board of Directors Meetings

8

Held Shareholders' Meetings

2

No cases of corruption lawsuits were reported

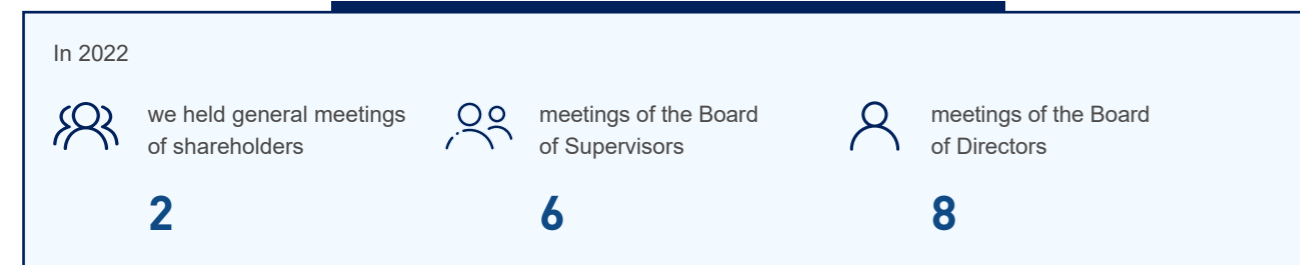
Contributing to the United Nations Sustainable Development Goals (SDGs)



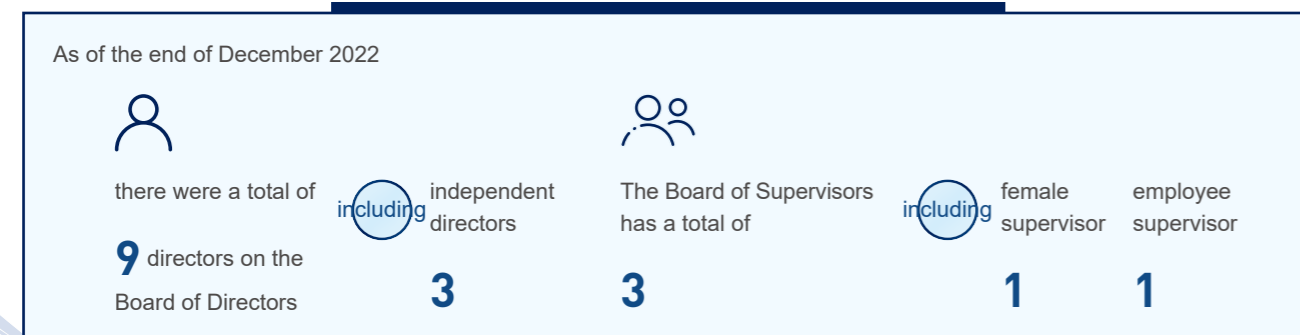
Corporate Governance

Strengthening the construction of the governance system is an important way to boost sustainable development and enhance the Company's core competitiveness. China TransInfo attaches great importance to legal compliance and strictly abides by the laws and regulations such as the *Company Law*, the *Securities Law*, *Rules for Governance of Listed Companies*, the *Shenzhen Stock Exchange Listed Company Self-discipline Supervision Guidelines No. 1 - Standardized Operations for Main Board Listed Companies*, and the *Shenzhen Stock Exchange Stock Listing Rules (Revised in 2022)*, and establishes and improves the governance system to enhance the Company's governance capability.

We have established a governance, decision-making, and management structure that includes the shareholders' general meeting, Board of directors, supervisory Board, and senior management, with clear responsibilities, close coordination, and efficient operation. The Company's Board of Directors has four specialized committees: the Strategy Committee, the Audit Committee, the Nomination Committee, and the Remuneration and Appraisal Committee, which provide support and advice to the Board to facilitate efficient, standardized, and scientific decision-making. We implement corporate governance effectively and actively protect the interests of shareholders and the Company. In strict accordance with the provisions of the Company's *Articles of Association* and the *Rules of Procedure for the General Meeting of Shareholders*, the Company convenes and holds the general meeting of shareholders to ensure that all shareholders, especially small and medium-sized shareholders, enjoy equal status.



The Company elects directors and supervisors in strict accordance with the *Articles of Association* and conducts its work based on the *Rules of Procedure for the Board of Directors*, the *Annual Reporting System of Independent Directors*, the *Work System for Independent Directors*, and the *Rules of Procedure for the Board of Supervisors*, to ensure the effectiveness of the governance of the Board of Directors and the Board of Supervisors. We pay attention to the Board of Directors diversity and constantly improve our decision-making ability.



Internal Risk Control

China TransInfo keeps enhancing its internal control system to prevent operational risks. The Company abides by the *Basic Norms for Enterprise Internal Controls*, the *Guidelines for Application of Enterprise Internal Controls*, the *Guidelines for Evaluation of Enterprise Internal Controls*, the *Guidelines for Auditing of Enterprise Internal Controls*, and the *Guidelines of Shenzhen Stock Exchange for the Internal Control of Listed Companies*, to ensure compliance in the Company's regular operations and production. The Company has developed a comprehensive internal control system that includes financial, operational, compliance, and information disclosure controls. To ensure compliance in our operations, we hire an independent third-party agency to evaluate the effectiveness of our internal controls. The Company is constantly improving its risk management and control system, and it has developed a risk prevention mechanism that consists of three components: prevention, control, and remediation. To effectively respond to various risks, we conduct regular comprehensive risk assessments across the company and prepare comprehensive risk assessment reports.

We strictly abide by compliance requirements and actively cultivate a culture of compliance throughout the Company. To address the most pressing issues for our development and employees' concerns, we invited well-known legal professionals and organized the "Spirited Away" training seminar on legal practice. We have held seven seminars, with more than 320 online and offline participants, effectively enhancing our employees' legal literacy.



China TransInfo organized the "Spirited Away" training seminar series on legal practice

Business Ethics

We adhere to professional ethics such as honesty and integrity. We strictly adhere to laws and regulations such as the *Anti-Corruption Business Code* and the *Management Measures for Anti-fraud Reporting*, observe professional ethics, conduct a fair competition, steadfastly prevent business ethics violations, strengthen self-discipline, and regulate operations. China TransInfo was not involved in any corruption lawsuits in 2022.

We are constantly working to improve our anti-corruption system. A three-tiered professional ethics management structure was established, and the Board's supervision system was improved to ensure the Company's clean and efficient operation. We strictly enforce the *China TransInfo Management Measures for Anti-Fraud Reporting* and the *China TransInfo Anti-Corruption Business Code*. We publicly disclose reporting channels such as email, phone, and mailbox to encourage informants to report all types of corruption information that occurs in various fields. We will provide corresponding material rewards to individuals who report information on corrupt behaviors that have been verified through an investigation based on the effectiveness and severity of the information provided. We strictly keep informants' information confidential and prohibit handlers from disclosing or spreading reported content to non-related personnel to prevent retaliatory actions.

We will continue to work to promote a clean culture. We create a clean environment within the company and improve the quality of our employees by conducting integrity education, promoting anti-corruption management systems, and organizing training related to business ethics and anti-corruption.

Information Security

We place a high value on the network and information security. We strictly adhere to the People's Republic of China's *Cybersecurity Law*, the *People's Republic of China's Personal Information Protection Law*, and other laws and regulations. We are constantly improving the information security management system and architecture, as well as the level of security operation process management and technology application. We are constructing a solid information security defense line.

We continue to improve the system and regulations, such as the System Security Specifications of *China TransInfo and the Information Security Policy of China TransInfo*, and align with international security compliance standards. We have achieved standardized, normalized, and systematic information security management by obtaining ISO 27017 cloud security management system, ISO 27018 cloud privacy management system, and ISO 27701 privacy management system certifications. Through data usage monitoring and alarm mechanisms, research and development of cloud security protection systems, Kingdee systems safeguarding privacy and data security, and network resource access control policies, we achieved security protection of boundaries, endpoints, networks, and network access. China TransInfo has also established a data leakage prevention framework to achieve centralized identity management and control, terminal security access, transparent encryption of documents, and boundary security isolation. In addition, we developed the R&D cloud network security system that can reinforce security at the exit, region, and endpoint levels and achieve visual security across the entire network, with functions such as pre-event inspection, in-event analysis, post-event detection, and joint disposal. At the same time, we have comprehensively upgraded the server rooms, security monitoring systems, etc., to ensure a stable and secure network.





Envisioning the Future

Convenient Travel

In 20xx, the intelligent transportation system can be used, and people can make reservations and choose the most suitable transportation mode every day, including shared auto-piloting vehicles, electric vehicles, and intelligent public transportation. Shared auto-piloting vehicles can provide a comfortable riding environment for passengers thanks to UWB positioning and linking technology provided by China TransInfo's UCIT to activate functions such as air conditioning and seat heating in advance. Our intelligent connected cloud control platform, also known as the "smart brain" for vehicle-road coordination, enables autonomous vehicles to accurately and quickly obtain road data, BVR road condition reminders, and real-time predictions of passenger arrival times at their destinations using big data-based transportation path planning. The structured holographic road condition data gathered and processed by China TransInfo's perception devices and edge computing units on the roadside can be transmitted to the autonomous vehicle in real time through linking with the OBU deployed in the vehicle and the RSU deployed by China TransInfo on the roadside. In the meantime, the self-developed RSU on the signal control device at China TransInfo's various intelligent intersections will also transmit 100% accurate red and green light countdown information to the car in real-time, ensuring the quick and safe delivery of passengers to their destinations. To effectively improve transportation efficiency, the whole city has adopted our comprehensive solution for urban-wide transportation governance based on intelligent transportation technology carries, which can effectively avoid the problem of road congestion.

Based on their reservation information, shared auto-piloting vehicles can automatically provide services to various travelers. Following completing all travel reservation orders, the car will park autonomously using the surrounding parking information provided by China TransInfo's urban dynamic traffic supervision platform. Our roadside high-pole video parking solution or ETC toll gate station solution will enable non-contact parking payment, with billing, statistics, and optimization handled by China TransInfo's cloud parking platform. If the unmanned vehicle runs out of fuel or electricity, it will automatically navigate to the nearest gas station equipped with non-contact fueling/charging ETC technology and will continue to provide efficient and convenient travel services for passengers after refueling/charging.

Efficient Work

In 20xx, the Company installed Uniview facial recognition speed gates in its office area, enabling precise facial recognition and immediate access without delay. The fast-access gate can identify and record body temperature data, ensuring the safety of employees' work environments during high flu season. Uniview's video conferencing system with a multi-language interaction system has been installed in various company meeting rooms, making it possible to conduct real-time multilingual dialogue meetings across countries.

Uniview's remote monitoring system allows for remote viewing of various factory situations. Within the factory, AI algorithms

from China TransInfo subsidiary Bresee can control the factory's assembly line's quality inspection and alarm system, detect unqualified products in real-time, and automatically handle them. Bresee's AI algorithms also perform real-time simulation operations for the factory's assembly efficiency and logistics planning, optimizing and improving production efficiency on a continuous basis. Uniview's remote intelligent store patrol system can automatically assess the Company's chain stores, and based on real-time scores, management can propose improvement plans or measures for corresponding stores.

Cozy Life

In 20xx, people no longer need to carry their house keys with them when they go out. People can open the door and go home with just one touch or without any contact, thanks to Uniview's intelligent door locks, which include facial recognition and fingerprint recognition. The time-synchronized dynamic password TOTP function is a feature of Uniview's intelligent door locks that helps reduce security risks from weak network connections. They provide homeowners with convenience while also providing strong security protection. The intelligent peephole viewer can recognize visitors and assist homeowners in determining whether they are expected guests. At the same time, in the smart community built by Uniview, the three lines of defense are set at the community entrance, public areas, and unit building doors for intelligent management, ensuring the daily safety of residents.

Smart Education

In 20xx, schools are equipped with Uniview swing fast-access gates, and multiple lines of defense are formed at campus entrances, main roads, and teaching and dormitory buildings via devices with multiple collection points. Big data, AI intelligence, and other technologies are used to manage people, vehicles, objects, places, affairs, and organizations in a grid-based manner, reducing the risk brought to campus by dangerous personnel or behaviors. The schools used information technology to establish a video security system and a smart IoT cloud platform with the help of Uniview. They can keep a close eye on students' changing circumstances. In real-time, parents can also learn about their children's school entry and exit dates and statistics, such as student attendance, dormitory situation, leave status, and health status.

The classrooms are outfitted with a multimedia intelligent blackboard, and students can experience a variety of teaching modes, such as experimental exercises, via the intelligent blackboard. In collaboration with Bresee, the school also provides students with artificial intelligence practice courses, which increases students' interest in artificial intelligence and reserves knowledge and skills for future artificial intelligence professionals.

Appendixes

Appendix 1 Key Performance Table

Environmental Performance

Indicator	2022	Unit
Kitchen waste	22.47	Tonnes
Sewage discharge	0	Tonnes
Waste fluorescent tube	75.26	Tonnes
Waste toner cartridge	391.29	Tonnes
Waste ink cartridge	71.1	Tonnes
Direct greenhouse gas emissions (such as those from the combustion of fossil fuels, converted from A2.1 resource usage)	469.78	Tonnes
Indirect greenhouse gas emissions (such as those from the purchased electricity and heat, converted from A2.1 resource usage)	7,729.62	Tonnes
Office paper consumption	1,046,400	Pieces
Freshwater consumption	43,911.2	Tonnes
Electricity consumption	10,397,336	Kw/h
Natural gas	60,515.6	M ³
Purchased heat	1,873.73	GJ
Diesel	3.9	Tonnes
Gasoline	108.5	Tonnes
Total energy consumption	1,587.64	TCE
Environmental accidents or administrative penalties related to the environment	0	Times

Social Performance

Indicator	2022	Unit	
Total number of employees	7,194	Persons	
Employees divided by employment type	Employer	7,100	Persons
	Contractor	64	Persons
	Others	30	Persons
Employees divided by rank	Senior	16	Persons
	Middle	889	Persons
	Primary-level	6,289	Persons
Employees divided by gender	Male	5,431	Persons
	Female	1,763	Persons
Employees divided by age	Under 30 years old	3,423	Persons
	31-40 years old	2,978	Persons
	41-50 years old	676	Persons
	Over 50 years old	117	Persons
Total number of new hires	1,476	Persons	
Employee turnover	1,487	Persons	
Employee turnover rate	16.99	%	
Number of employees with five social insurances and housing provident fund	7,091	Persons	
Number of employees newly diagnosed with occupational diseases	0	Persons	
Number of workplace safety accidents	0	Cases	
Number of fire drills	32	Times	
Number of participants in fire drills	1,202	Participants	
Employee health examination rate	90.94	%	
Number of deaths due to work-related injuries	0	Persons	
Number of hours lost due to work-related injuries	4,573	Hours	

Indicator		2022	Unit
Trainees divided by gender	Male	5,375	Persons
	Female	717	Persons
Trainees divided by rank	Senior	30	Persons
	Middle	268	Persons
	Primary-level	5,794	Persons
Total training hours divided by gender	Male	270,305	Hours
	Female	93,909	Hours
Total training hours divided by employment type	Senior	1,456	Hours
	Middle	40,283	Hours
	Primary-level	383,413	Hours
Total research and development investment		1.111	RMB billion
Number of intellectual properties		4,571	Pieces
Total number of suppliers		7,546	Businesses
Number of domestic suppliers		7,440	Businesses
Number of suppliers from Hong Kong, Macao, and Taiwan		74	Businesses
Number of overseas suppliers		32	Businesses
Number of corruption-related lawsuits		0	Cases
Total investment in public welfare		771.75	RMB 10,000

Appendix 2 GRI Indicator Index

Indicator Serial Number	Disclosure Item	Chapter of the Report
GRI 2 General Disclosures 2021		
2-1	Organizational details	About Us
2-2	Entities included in the organization's sustainability reporting	About the Report
2-3	Reporting period, frequency and contact point	About the Report
2-6	Activities, value chain and other business relationships	About Us
2-7	Employees	Helping Employees Grow and Succeed
2-9	Governance structure and composition	Achieving Steady Operations– Corporate Governance
2-19	Remuneration policies	Helping Employees Grow and Succeed– Protecting the Rights and Interests of Employees
2-29	Approach to stakeholder engagement	About Us: Responsibility management
GRI 3 Material Topics 2021		
3-1	Process to determine material topics	About Us: Responsibility management
3-2	List of material topics	About Us: Responsibility management
3-3	Management of material topics	About Us: Responsibility management
GRI 203 Indirect Economic Impacts 2016		
203-2	Significant indirect economic impacts	Jointly Building a Harmonious Ecosystem
GRI 205 Anti-corruption 2016		
205-1	Operations assessed for risks related to corruption	Achieving Steady Operations
205-2	Communication and training about anti-corruption policies and procedures	Achieving Steady Operations
205-3	Confirmed incidents of corruption and actions taken	Achieving Steady Operations
GRI 302 Energy 2016		
302-1	Energy consumption within the organization	Key Performance Table
302-4	Reduction of energy consumption	Key Performance Table
GRI 303 Water and Effluents 2018		
303-5	Water consumption	Key Performance Table

Indicator Serial Number	Disclosure Item	Chapter of the Report
GRI 305 Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	Key Performance Table
305-2	Energy indirect (Scope 2) GHG emissions	Key Performance Table
GRI 306 Effluents and Waste 2020		
306-3	Waste generated	Key Performance Table
GRI 308 Supplier Environmental Assessment 2016		
308-1	New suppliers that were screened using environmental criteria	Practicing a Green and Low-carbon Lifestyle—Building a Sustainable Supply Chain
GRI 401 Employment 2016		
401-1	New employee hires and employee turnover	Helping Employees Grow and Succeed—Protecting the Rights and Interests of Employees
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Helping Employees Grow and Succeed—Protecting the Rights and Interests of Employees
GRI 403 Occupational Health and Safety 2018		
403-1	Occupational health and safety management system	Helping Employees Grow and Succeed—Safeguarding the Health of Employees
403-5	Worker training on occupational health and safety	Helping Employees Grow and Succeed—Safeguarding the Health of Employees
403-6	Promotion of worker health	Helping Employees Grow and Succeed—Safeguarding the Health of Employees
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Helping Employees Grow and Succeed—Safeguarding the Health of Employees
403-9	Work-related injuries	Helping Employees Grow and Succeed—Safeguarding the Health of Employees
GRI 404 Training and Education 2016		
404-1	Average hours of training per year per employee	Helping Employees Grow and Succeed—Supporting the Development of Employees
404-2	Programs for upgrading employee skills and transition assistance programs	Helping Employees Grow and Succeed—Supporting the Development of Employees
GRI 406 Non-discrimination 2016		
406-1	Incidents of discrimination and corrective actions taken	Helping Employees Grow and Succeed—Protecting the Rights and Interests of Employees
GRI 413 Local Communities 2016		
413-1	Operations with local community engagement, impact assessments, and development programs	Jointly Building a Harmonious Ecosystem

Appendix 3 Reader's Comment

Dear reader,

Thank you very much for spending time in reading the *China TransInfo Technology Co., Ltd. CSR Report 2022*. We look forward to your comments and suggestions on the report and our work. You may fill out the questionnaire and send it back to us by mailing or emailing the scanning copy. Your valuable comments will be much appreciated!

Address: Tower B, TransInfo Building, No. 27 Court of Zhongguancun Software Park, No. 8 Dongbeiwang West Road, Haidian District, Beijing

Email: securities@ctfo.com

1. Which category of China TransInfo's stakeholders does your entity belong to?

- Shareholder Investor Employee Supplier Customer
 Government Community Academic institutions NPO Other (please specify)

2. Does the report cover the information of your concern?

- Yes Some No

3. What is your overall review on the *CSR Report 2021*?

Readability (The presentation is easy to understand, beautifully designed, engaging and easy to find the information you need.)

- 3 (Good) 2 (Average) 1 (Bad)

Credibility (The information in the report is true and credible.)

- 3 (Good) 2 (Average) 1 (Bad)

Information integrity (It covers both positive and negative information and satisfies your information demand.)

- 3 (Good) 2 (Average) 1 (Bad)

4. Is it easy for you to locate the information of your concern?

- Yes Sometimes No

5. Apart from the disclosed information in the report, what else information will interest you?

千方科技
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