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2023

Environmental, Social and Governance Report

China TransInfo Technology Co., Ltd.

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About the Report

This report is the first environmental, social and governance (ESG) report published by China TransInfo Technology Co., Ltd. (hereinafter referred to as the “ESG report”). It discloses the Company’s ESG management initiatives, highlight practices, and results in 2023 in detail.

Period

This report is an annual report that covers the period from January 1 to December 31, 2023. Some content may go beyond this period to maintain the consistency and integrity of information.

Scope

This report focuses on China TransInfo Technology Co., Ltd., including its branches, subsidiaries, and affiliates. For the convenience of presenting and reading, China TransInfo Technology Co., Ltd. is referred to as “China TransInfo,” “the Company,” and “we/us” in this report.

Basis

- *Guidelines of the Shenzhen Stock Exchange for Standardized Operation of Listed Companies*
- *Global Reporting Initiative (GRI) Standards* released by the Global Sustainability Standards Board (GSSB)
- *Guidance on Social Responsibility Reporting (GB/T36001-2015)*

Sources of Information

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. Amounts in this report are denominated in RMB unless otherwise stated.

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Chairman's Statement

In the field of Smart transportation, we witness a groundbreaking fusion of advanced information technologies like artificial intelligence, IoT, and big data with traditional transportation systems. This integration serves as a catalyst for elevating quality standards, enhancing operational efficiency, and instigating profound shifts within the transportation industry. Currently, amidst the ongoing global technological revolution and industrial metamorphosis, the emergence of an information-driven era, propelled by innovations such as artificial intelligence, big data analytics, and cloud computing, is reshaping the landscape of transportation modernization on a global scale. Data assumes a paramount role in this context, emerging as a fundamental cornerstone, while the digital economy emerges as a formidable force propelling economic growth and development.

In the digital age, China Transinfo, a comprehensive enterprise specializing in smart transportation, logistics, and IoT solutions, harnesses over two decades of expertise to innovate continuously and explore the integration of data within the transportation industry. Collaborating with numerous partners, we strive to build a robust ecosystem that fosters data interconnectivity and sharing across the transportation sector. Our goal is to facilitate seamless traffic flow for both individuals and goods, thereby enhancing people's satisfaction, well-being, and safety.

Embedded within the industry, we focus on strengthening our professional capabilities to better serve the transportation industry. In the field of smart transportation, we have established a comprehensive business framework encompassing urban, highway, rail, and civil aviation transportation. Our continual efforts are directed towards enhancing transportation systems' efficiency and ensuring operational safety to enhance the public's travel experience. In the field of intelligent IoT, we assist government clients in driving digital governance reforms and support enterprises in their digital transformation and efficiency upgrades. In 2023, we introduced the "Kunchao Smart Intersection Cloud Control Platform" and "Kunchao Safety Guardian," dedicated to bolstering the safety of urban and rural intersections. Our ground-breaking smart parking solution, the industry's first urban-level smart parking solution integrating dynamic and static elements, has been implemented in Tianjin, facilitating systematic governance of urban parking. Additionally, we have developed China's

first event-oriented route navigation system, leveraging the power of "data intelligence" to ensure seamless traffic flow during the Chengdu Universiade, with the goal of achieving "zero complaints" and maintaining safety standards

We practice the "Dual Carbon" development strategy, capitalizing on our inherent strengths to propel green development and facilitate the transition to a low-carbon transformation. Exploring innovative avenues for the convergence of transportation and energy, we introduce the "Optimized Scenarios for Three Networks Integration and Collaboration." Through the enhancement of rail, bus, and slow-motion transportation services' quality and efficiency, our objective is to foster energy conservation and emissions reduction within the transportation sector. In our pursuit of sustainability, we have launched a smart fuel-saving solution for civil aviation, aiding airlines in curbing fuel costs and establishing a new benchmark for intelligent aviation practices. From January to September 2023, our efforts contributed to Juneyao Air's fuel savings of 5,393 tonnes, equivalent to a reduction of 16,900 tonnes of carbon dioxide emissions. We actively protect ecosystems by using advanced technology to monitor and evaluate the ecological environment of wildlife. In 2023, Uniview's AI technologies for swift observation and conservation were included in the "World Internet Conference AI For Social Good Action Plan".

China TransInfo, born from humble beginnings and firmly grounded in a robust foundation, has remained unwavering in its commitment to driving technological innovation. We continuously improve the construction of technology innovation platforms, increase R&D investment, and drive innovative momentum. In 2023, the Company's R&D investment amounted to RMB 1.1 billion. We harness the synergistic potential of industry-academia-research collaborations to explore pioneering scientific research endeavors. Our collaborative research project, *Key Technologies for Bottleneck Identification and Integrated Control for Transportation Networks in Large Cities*, conducted in partnership with Beijing Jiaotong University, Beijing Smart Transportation Development Center, and other esteemed entities and experts, won first prize in the Science and Technology Advancement Award of the Ministry of Education. With a focus on pivotal areas such as AI algorithms and big data, we've achieved significant breakthroughs in product research and application. The Kunchao·Dual-Smart Intersection, a New Generation of

Urban Transportation Computing Infrastructure, included in the list of Typical Application Cases of Advanced Computing in 2023 (urban brain) by the Ministry of Industry and Information Technology. Our Highway Network Operation Monitoring and Service Platform was selected as part of the "Beijing Digital Innovation Solutions," along with our city-level smart parking solution. In 2023, we maintained a total of 5,061 intellectual property rights, with 2,836 granted patents.

We consider talent as the key driving force in the Company's development, accompanying employees in their growth and success. We uphold a culture of openness, equality, respect, and inclusivity, valuing each employee. We foster a fair and diverse workplace environment and continually refine our employee training programs, providing ample opportunities for career advancement to unlock the full potential and creativity of our staff. Together with our employees, we aim to cultivate a collaborative and supportive environment, fostering mutual success. In 2023, our total employee count reached 6,633, including 1,161 new hires. The average training duration per employee was 46.84 hours.

We adhere to the principles of mutual benefit and cooperation, partnering with stakeholders from various sectors to generate social value. Remaining true to our corporate mission, we actively participate in social welfare initiatives, encourage employee involvement in volunteer activities, and foster a sense of warmth and responsibility within our communities. In 2023, our charitable contributions totaled RMB 1.18 million. We promote a green and low-carbon culture, urging employees to embrace eco-friendly commuting practices and office habits, while championing resource conservation and environmental protection. We have built an office area that is green, energy-saving, and low-carbon in every aspect with a park system that "manages itself," a green park that "breaths," "paperless" conference devices, as well as energy conservation and cost reduction "wherever and whenever possible." We are committed to building a responsible supply chain, strengthening supplier management, and collectively contributing to the development of the industry.

We uphold the values of integrity in our operations and actively practice ESG (Environmental, Social, and Governance) principles to achieve sustainable

development. Our robust corporate governance framework ensures enhanced governance through improved risk management mechanisms, adherence to business ethics, and the safeguarding of information and data security. This ensures the Company's legal, compliant, and stable operation. We integrate ESG principles into our development and business operations, continually refining our ESG management mechanisms and enhancing our ESG management capabilities to achieve comprehensive and sustainable corporate development.

With roads crossing, railways extending across vast expanses, high-speed trains leading the way, massive ships navigating distant waters, airplanes soaring through the skies, and formerly impassable mountains now traversable paths—China's 9.6 million square kilometers of land, spanning from villages to cities, presents the world's most extensive digital transportation ecosystem, epitomizing industrial evolution with distinct Chinese characteristics. In the future, China TransInfo will continue to leverage its industry expertise, working with partners to promote high-quality development in the transportation industry, accelerating the building of a strong transportation nation and a digital China.



Chairman of the Board Xia Shudong



About Us

Company Overview

China TransInfo is a leading digital products and solutions provider in China. We serve as a champion and implementer of new transportation infrastructure, pioneering technology for vehicle-road coordination, and ranking as the world's fourth-largest provider of AIoT (Artificial Intelligence of Things) products, solutions, and full-stack capabilities. Embracing a technology-driven approach, we have established a strategic ecosystem that spans the entire industry chain, from key artificial intelligence algorithms to intelligent sensors, and from smart manufacturing to cloud-edge connections. We actively promote the convergence, integration, and application of multi-source heterogeneous data in transportation, traffic management, urban governance, and services. Our goal is to propel digital transformation in transportation and city infrastructure construction through the application of digital technologies.

With a workforce of over 6,500 employees, we operate across more than 200 countries and regions spanning Asia, Europe, Africa, and America, with a presence in over 3,000 cities. We serve over 2,000 top clients in various industries and maintain a dominant position in both technology and market share in several subfields, including smart transportation and smart IoT.

Driven by our vision to "make the world safer, more convenient, and smarter," China TransInfo is committed to continuous innovation. We are recognized as a National Enterprise Technology Center and a National Technology Innovation Demonstration Enterprise. Our affiliated research platforms have been recognized as the Intelligent Transportation Technology and Equipment Industry R&D Center by the Ministry of Transport of the People's Republic of China and a National CNAS Accredited Laboratory, among others. With a portfolio of 5,061 filed patent applications, we have played a leading role in shaping nearly 90 international, national, and industry standards. Notably, we have taken the lead in setting evaluation team standards for autonomous driving in Beijing and have been selected as one of the "Hundred Group Standards Application Demonstration Projects" by the Ministry of Industry and Information Technology. Additionally, we are recognized as a "Zhongguancun Standard" for nationwide promotion and application. Over the past Five-Year Plan, we have actively participated in multiple national science and technology support projects, earning esteemed awards such as the National Technical Invention Award (Second Prize), National Scientific and Technological Progress Award (Second Prize), and the China Patent Gold Award.

Operating Performance in 2023



Business footprints in
200+
countries and regions

Served
2,000+
industry leading customers

Operating revenue
7.794 billion

Tax Payment
371 million

China TransInfo—A Digital Governance Expert in Omni Transportation



To make the world safer, more convenient and smarter



Support the transportation industry in digital and intelligent transformation



A leading product and industry solution provider in smart transportation in China
A global AIoT product and solution and full-stack capability provider

Business Scenarios

As an active participant in the digital governance of omni-transportation, China TransInfo makes ongoing efforts in smart transportation, Intelligent Connectivity and AIoT, actively providing customers with smart solutions and digital products.

Smart Transportation

The Company's operations encompass all major transportation sectors, including road, rail, air, and water transportation. Through a data-driven approach, we drive the digital transformation of the transportation industry, targeting over 1,000 typical business scenarios. Our innovative utilization of data serves as a cornerstone for traffic industry management decisions, public services, transportation safety assurance, operational efficiency enhancement, and the improvement of the public travel experience. With a track record of successfully implementing over 6,500 industry-level programs across various domains such as highway transportation, urban road traffic, civil aviation transport, rail transportation, and city parking, we facilitate convenient travel for over 300 million individuals daily. Furthermore, we consistently provide services for major national events and sports activities, ensuring seamless transportation operations.

Smart Road Net

Smart expressway solutions

Smart Transportation Operation

Smart transport solutions

Integrated law enforcement solutions

Smart Traffic Management

Integrated management solution for urban traffic congestion

Integrated traffic management solutions for national and provincial expressways and county and township highways

Big-data and think-tank-based solutions for traffic management of public security agencies

Static Traffic

Integrated management solutions for urban static traffic

Smart Transportation

Smart Rail Transportation

Smart rail transportation solutions

ETC

ETC urban extension solutions

Smart Civil Aviation

Digital solutions for airports

Big-data-based fuel saving platform solutions for airlines

Intelligent Connectivity

Intelligent connectivity application solutions

Intelligent Connectivity

Based on technologies such as IoT perception, big data, and artificial intelligence, China TransInfo is at the forefront of pioneering comprehensive solutions in the field of vehicle-road coordination. We have achieved remarkable success in developing integrated solutions spanning from the vehicle end to the roadside, and from the product level to system-level cloud-edge integration. Our endeavors extend from autonomous driving demonstration areas and test sites to the establishment of smart intercity transportation systems, reflecting our commitment to comprehensive exploration and practical implementation. As one of the leading innovators in China's vehicle-road coordination and autonomous driving technology, our solutions and products have made significant impacts in various locations including Beijing, Xiong'an, Dali, Changsha, Hebei, and Jilin.

Smart IoT

With "ABCI" (AI Artificial Intelligence, Big Data, Cloud Computing, IoT Internet of Things) technologies at its core, the Company has established a complete business system encompassing design, R&D, manufacturing, sales, and after-sales service. We have a global smart manufacturing base in Tongxiang, Zhejiang Province, providing AIoT products, solutions, and full-stack capabilities to assist various industries in building a digital foundation. Through our services, we empower government clients in digital governance, assist customers in digital transformation endeavors, and enhance the lives of consumers through smart living solutions.

Social governance

Omni social governance platform solutions

Smart pandemic prevention

Smart pandemic prevention equipment solutions

Smart tourism

Smart scenic area solutions

Smart complex

Smart complex solutions

Smart IoT

Digital energy

Construction of smart parks of petrol and petrochemical companies

Digital and intelligent hospitals

Digital and intelligent hospital solutions

Smart industry

Professional management of smart plants

Smart education

Smart campus solutions

History

2000

- On October 30, 2000, Beijing PKU ChinaFront High Technology Co., Ltd. was officially established.

2008

- The company served several Olympic events and was honored with the Special Award for Traffic Information Service and Assurance in Beijing Olympics.

2013

- China TransInfo led the construction of China's first national Internet of Vehicles (IoV) industrial center in Beijing.
- It was acknowledged as the transportation industry research and development (R&D) center for intelligent transportation technologies and equipment by the Ministry of Transport.
- It undertook the first IoV research project under the national 863 Program of the Ministry of Science and Technology.

2016

- In its deployment of the autonomous driving sector, the Company took the lead in the model application of intelligent vehicle and smart transportation launched by the Ministry of Industry and Information Technology, initiating innovative R&D of vehicle-road coordination and autonomous driving.

2019

- China TransInfo collaborated with the Road Net Center of the Ministry of Transport to speed up smart road net construction.
- It set up a branch office in Xiong'an as a representative of hi-tech enterprises in Zhongguancun, Beijing, to support the coordinated development of Beijing, Tianjin, and Hebei.
- It developed a whole series of intelligent and connected vehicle-infrastructure cooperation products independently, and it was the first in China to pass the V2X connectivity test.

2021

- China TransInfo strategically invested in Unicom Continental Intelligent Transportation Technology (UCIT), allowing it to expand its business deployment beyond roads to key areas of intelligent connectivity, such as roads plus vehicles.
- The IT Benchmarking Improvement and Management Project of Jilin Provincial Expressway Group Co., Ltd., which engaged China TransInfo in its construction, was chosen as a benchmark project by the State-owned Assets Supervision and Administration Commission of the State Council.
- It collaborated with the Dali Prefecture Government in Yunnan Province to create a smart city.

2023

- China TransInfo won the first prize in the Science and Technology Advancement Award of the Ministry of Education.
- It was ranked among the 2023 Top 100 Enterprises in Beijing and Top 100 Private Enterprises in Beijing.
- It created the Universiade Intelligent Transportation Security System, providing security for the Chengdu Universiade.
- The first phase of the Dhaka Airport Elevated Expressway project in Bangladesh, one of its overseas projects, was completed and opened to traffic; and the new Luanda International Airport was delivered and put into operation.
- It joined hands with Aliyun to build a large model (LM) of transportation to empowers China TransInfo Cloud Police to innovate and upgrade.
- It launched China TransInfo Kunchao - Intelligent Intersection Cloud Control Platform and China TransInfo Kunchao - Security Guard.

2003

- The "Embedded Geographic Information System (GIS) GeoPad" received the certificate of the Torch Program of China.
- The company developed the SARS 2009 decision-making support system for Beijing's Chaoyang District and Hefei and explored the prototype of the "urban brain."

2009

- China TransInfo was established and the group-based operation started.
- It built a whole intelligent transportation industrial chain that covered intelligent urban transportation, intelligent expressway transportation, and integrated traffic information services.
- It provided real-time traffic information service, key commercial vehicle monitoring service, and visitor flow monitoring products to the Shanghai Expo.

2014

- China TransInfo was listed on the Shenzhen Stock Exchange, coded 002373.
- It was the first to raise and implement a comprehensive transportation industry deployment that covered urban transportation, highway transportation, rail transportation, and civil aviation.
- It was named the key hi-tech enterprise under the Torch Program.

2017

- China TransInfo was been relocated to the TransInfo Building in Zhongguancun Software Park, Beijing.
- It invested in Zhejiang Uniview Technologies Co., Ltd. for future AIoT business development.
- It established an urban transportation business unit and invested in operation services.
- It received the second prize of the State Technological Innovation Award 2016.
- Breakthroughs were made in the construction of the National (Beijing- Hebei) Demonstration Zone for Intelligent Vehicles and Smart Transportation.

2020

- China TransInfo launched the Omni Transportation Solution for the AIoT era.
- It launched the industry's first edge computing unit and constructed the next-generation transportation system based on the cloud-edge-device technical framework.
- It was selected as a National Model Enterprise for Technological Innovation and one of the Top 100 Leading Enterprises for New Infrastructure.
- It was awarded with the "Case of Outstanding Contribution to Society" for enabling industry development with digitalization.

2022

- It safeguarded the Beijing Olympic Winter Games by providing technological support in a number of aspects including transportation, arrival and departure as well as safety.
- The *Passenger transportation information and data exchange of integrated transportation monitoring* that we co-formulated was officially issued by the Ministry of Transport.
- 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.
- It won the Grand Prize of Science and Technology by China Highway& Transportation Society.
- It launched self-developed AI signal controller and "Kunchao-Dual-Smart Intersection", the new generation of urban transportation infrastructure.
- It launched smart expressway solutions, digital security solution for smart airport sand the new generation of urban solution TOCC 3.0.

Recognitions and Awards



2022 ¥100-Million Club in China's Urban Intelligent Transportation Market

7ITS.com





Top 500 in the Transportation of China

Editorial Board of the *Transportation of China* Annual Report





2023 Beijing Software Core Competitiveness Enterprise (market application)

Beijing Software and Information Service Industry Association





Beijing Digital Service Provider

Beijing Software and Information Service Industry Association





2023 Beijing Top 100 Enterprises of Software and Information Technology Service Industry for Comprehensive Strength

Beijing Software and Information Service Industry Association





2023 Top 100 Private Enterprises in Beijing

Beijing Federation of Industry & Commerce





The Highway Network Operation Monitoring and Service Platform certified as a national patent-intensive product

National Intellectual Property Administration





The research project *Key Technologies for Bottleneck Identification and Integrated Control for Transportation Networks in Large Cities* winning the first prize in the Science and Technology Advancement Award

Ministry of Education





China TransInfo's Highway Network Operation Monitoring and Management Service Platform recognized as an Innovative Digital Solution of Beijing

Beijing Software and Information Service Industry Association





China TransInfo City-Level Smart Parking Solution recognized as an Innovative Digital Solution of Beijing

Beijing Software and Information Service Industry Association





The Kunchao-Dual-Smart Intersection, a New Generation of Urban Transportation Computing Infrastructure, included in the list of Typical Application Cases of Advanced Computing in 2023 (urban brain)

Ministry of Industry and Information Technology





Uniview's AI technologies for swift observation and conservation included in *World Internet Conference AI for Social Good Action Plan (2023-2025)*

World Internet Conference



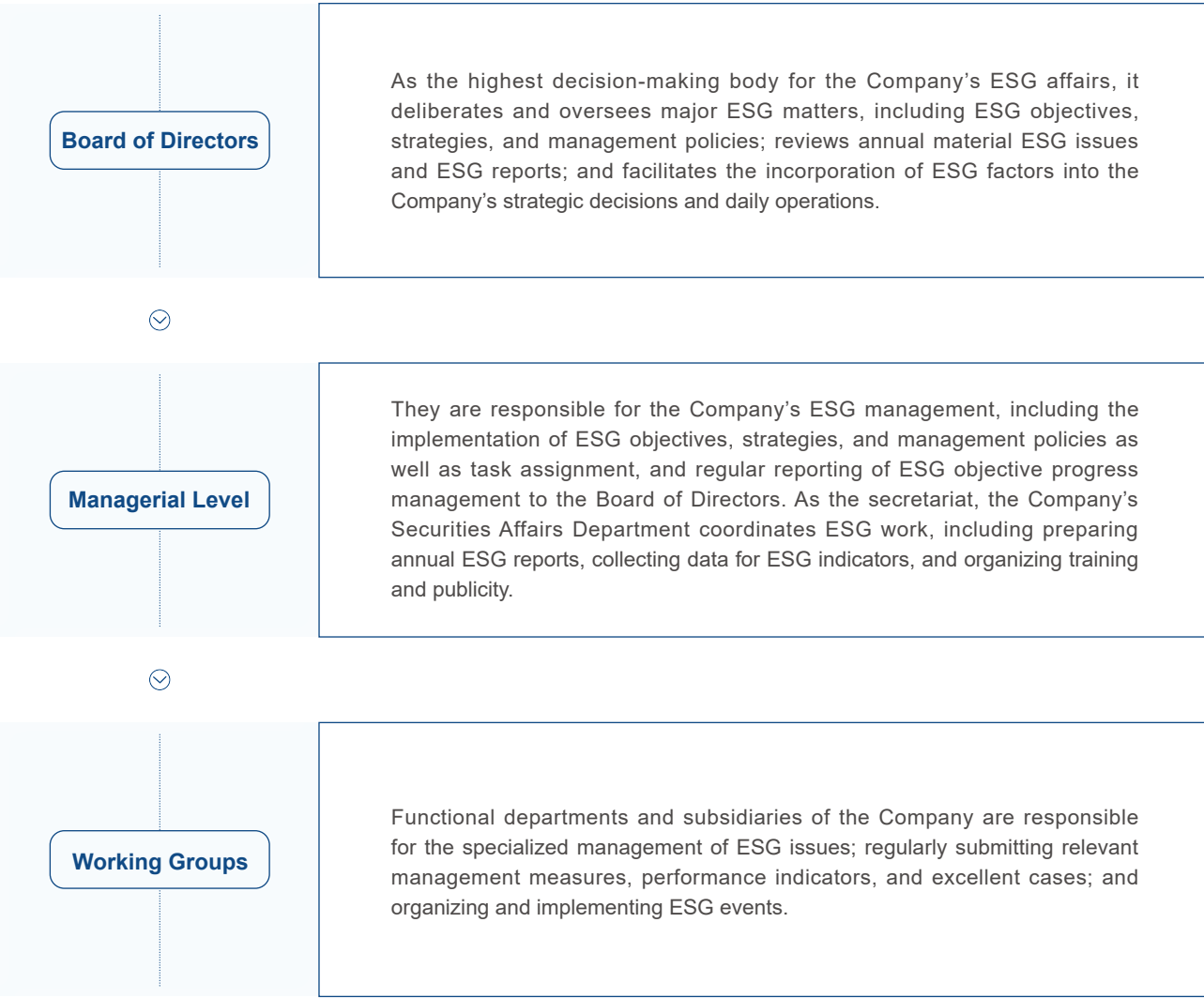
ESG Management

At China TransInfo, we are constantly improving our ESG management mechanism and catalyzing the integration of ESG concepts into the Company's business operations. We proactively respond to our stakeholders' expectations and concerns, thus living up to our commitment to corporate sustainability.



ESG Governance Structure

At China TransInfo, we have established a three-tier organizational structure consisting of the Board of Directors, the managerial level, and working groups, and have assigned ESG responsibilities to each tier to ensure tangible ESG progress.



China TransInfo's ESG governance structure

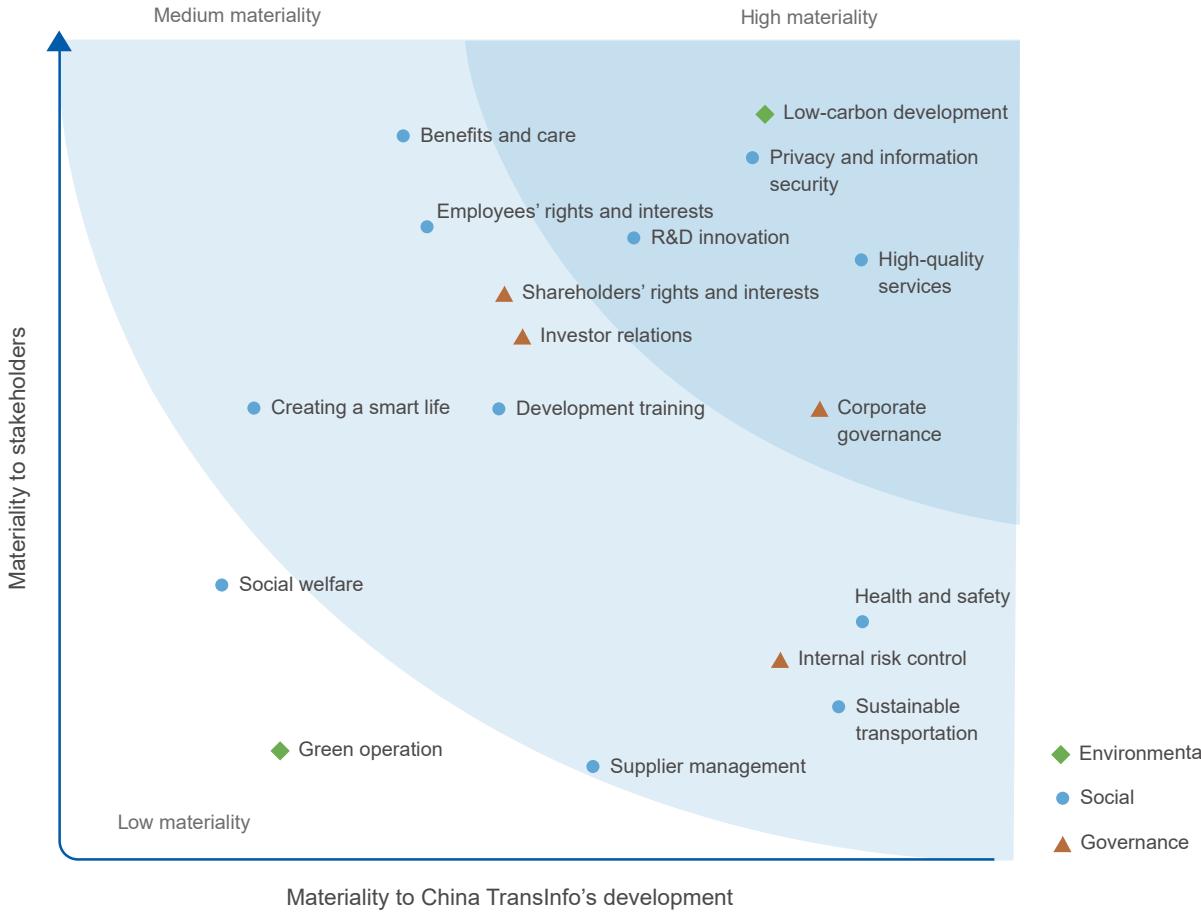
Stakeholder Communication and Engagement

At China TransInfo, we actively build stakeholder communication platforms and promptly respond to stakeholders' concerns through diversified communication channels and methods to better satisfy stakeholders' expectations and demands.

Stakeholder	Expectations and Demands	Communication and Response Methods
 Government	• Compliance operation • Paying taxes according to law • Business ethics and anti-corruption • Technological innovation • Supporting social and economic development	• Compliance management • Paying tax as required • Regular disclosure of business information • Communication and reporting • Field inspection and supervision
 Shareholders/ Investors	• Compliance operation • Sustained and steady return • Risk management • Corporate governance • Transparent information disclosure	• General meeting of shareholders • Periodic reports and announcements • Diversified channels for investor communication
 Employees	• Safeguarding employee's basic rights and interests • Occupational health and safety • Fair promotion and development • Unimpeded communication • Benefits and care	• Sound remuneration system • Fair promotion channels available • Cloud Home online comprehensive office management platform • Employee mailbox
 Customers	• Product quality guarantee • Providing high-quality services • Customer relationship management • Responsible marketing	• The quality monitoring system • Supervision and inspection • Customer satisfaction surveys
 Partners	• Keeping promises • Open, impartial, and fair sourcing • Partnerships for win-win outcomes • Protection of intellectual property	• Legal performance of contracts • Open and transparent sourcing • Technological exchanges • Protection of intellectual property
 Community and the Public	• Supporting social development • Caring for vulnerable groups • Energy conservation and emission reduction	• Contribution to rural revitalization • Charity and public welfare • Green transportation

Determination of Material Issues

We have determined material issues in accordance with state policies and systems, industry development trends, regulators' ESG mandates, and the concerns of internal and external stakeholders, and in light of our business development and strategic layout. The determination methodology involves peer benchmarking analysis and consultation with internal and external stakeholders. The material issues have been analyzed and ranked based on their "Materiality to China TransInfo's sustainability" and "Materiality to stakeholders." Based on the results, we have drawn China TransInfo's ESG Materiality Matrix for 2023.





01

Commitment to Intelligent and Connected Transportation



At China TransInfo, we are dedicated to driving technological innovation and integrating sustainability into our advancements. Through ongoing technological innovation and digital transition, we enhance traffic governance and digital urban development, aiming to cultivate a smart, eco-friendly lifestyle while empowering intelligent growth across various industries.

Our Actions

- Efficient traffic
- Safe travel
- Ecosystem
- Livable life
- Industry empowerment

Our Achievements

More than **16**% increase in Lhasa's road net capacity

0 complaints and safety accidents in transportation during the Chengdu Universiade

3.1 passengers/km bus passenger flow per km in Kunming from **2.61** passengers/km

Efficient Traffic

Transportation is a fundamental and pivotal service sector within the national economy, acting as a vital link between economic and social activities. At China TransInfo, we concentrate on specific scenarios and digital sites, bolstering and refining our professional capabilities to better serve the transportation sector. Leveraging years of expertise and substantial investment in research and development (R&D), we have established a comprehensive framework for smart transportation, encompassing urban, highway, rail, and civil aviation domains. Continuously harnessing the substantial value of data within the transportation sector, we strive to enhance operational efficiency, optimize traffic management systems, and elevate the efficiency and quality of public transit. This commitment enables us to more effectively address the demands of traffic management and urban development.

Intelligent Intersection

Intersections are key nodes in urban traffic management. Managing them entails complexity and continual effort, necessitating comprehensive, precise, and multi-dimensional measures to address diverse traffic scenarios and boost governance efficiency. Intersection intelligence offers a novel approach to intersection traffic governance. By enhancing capabilities such as precise perception, accurate judgment, and precise execution at intelligent intersections, it delves deeply into resolving traffic issues and elevates the overall management proficiency of urban traffic networks.

We are dedicated to advancing the next-generation urban transportation infrastructure. Centered around intelligent intersections, we enhance the overall efficacy of infrastructure, reshape the physical landscape of cities, and reconfigure their digital realms. Our focus has been on developing the “Kunchao - Intelligent Intersection,” the cornerstone of the next-generation urban transportation infrastructure. This system facilitates accurate detection of imbalances at intersections, fine-grained diagnosis of congestion causes, and meticulous monitoring of illegal vehicles and frequent right turns. By bolstering the efficiency of intersection management, it empowers integrated urban governance and establishes a new standard for traffic intersections in the era of new infrastructure.

Built upon the cloud-edge OS, the “Kunchao - Intelligent Intersection” integrates perception intelligence, data intelligence, and business intelligence. This integration facilitates a closed loop of perception, calculation, evaluation, and control, while also supporting the integration of various devices and applications across diverse business contexts. Furthermore, it offers fresh insights into urban traffic management through its closely interconnected three-step approach to intersection governance.

“AFT” Core Capabilities of the “Kunchao - Intelligent Intersection” Solution

Accurate perception

It builds an intersection basic data base using data from multiple sources such as intersection video surveillance, radars, and signals, and provides holographic presentation by means of digital twin. It enables warning of lane-level abnormalities within seconds and the timely and accurate detection of problems.

Fine-grained diagnosis

When detecting a problem, it can conduct an all-round evaluation of the operation of the intersection, diagnose and analyze the problem in multiple dimensions and in detail, thereby serving all scenarios of traffic governance at the intersection.

Targeted governance

Based on the diagnostic analysis report, it adopts holistic approaches based on its expert-level governance experience and means to continuously optimize and resolve the intersection problem.



Case Intelligent intersection empowers Lhasa’s integrated traffic governance

At China TransInfo, we utilize business intelligence and explore the depths of Transportation 3.0 practices. We have applied the edge computing unit technology for the intelligent intersection to Lhasa’s traffic police information technology (IT) project, which plays a vital role in alleviating urban traffic congestion.

Based on the actual traffic problems and needs of Lhasa and in conjunction with the government’s traffic planning, we have built an intelligent integrated traffic application platform that features digitization, precision, visualization, and intelligence, and completed the fine-grained scheduling of intersections and the coordination and optimization of the green wave on main roads. Through integrated traffic governance, Lhasa has seen significant improvement in traffic efficiency, with the road net capacity increasing by more than 16%, the average vehicle travel time decreasing by 26.9%, and the number of stops decreasing by 67.2%.



Smart Travel

At China TransInfo, we embrace the fundamental principle of “scenario-driven and digital empowerment,” actively exploring the vast potential of digital technology across various transportation sectors including highways, railways, aviation, waterways, and vehicle-road coordination. We have made significant strides in innovating and enhancing integrated transportation data brains, provincial integrated transport information platforms, and taxi services (including online car-hailing). Additionally, we are diligently developing products such as district and county integrated transport information platforms. A pivotal focus for us is establishing a digital base across the entire transportation value chain. Drawing from the transportation infrastructure environment and the transportation IoT sensing environment, we have established a comprehensive data middle platform comprising a “big data platform + data think tank + data visualization.” Leveraging the TOCC (Transportation Operations and Communication Center) 3.0 system, we have established a transportation scenario center spanning all business domains. This initiative effectively consolidates our achievements across integrated scenarios including transport logistics for major sporting events, critical transport periods, comprehensive supervision of hazardous goods transportation, urban eco-friendly freight and delivery, and the integration of urban transportation networks. Moreover, we have launched innovative applications in numerous urban smart transportation initiatives.

China TransInfo Supporting Glorious Moments with the Power of Digital Intelligence

- Beijing 2008 Summer Olympics**
China TransInfo provided transport assurance services for several Olympic events and was honored with the **Special Award for Traffic Information Service and Assurance in Beijing Olympics**.
- Shandong 2009 National Games**
China TransInfo provided a decision-making basis for the organization of the Shandong 2009 National Games by **deploying a large-scale video management solution**.
- Guangzhou 2010 Asian Games**
China TransInfo provided a **video management system and HD video conferencing solution** to support the Guangzhou 2010 Asian Games.
- Shenzhen 2011 Universiade**
China TransInfo assisted Shenzhen in building an **integrated urban transportation operation command center** and setting up four platforms (**intelligent transportation, intelligent facilities, intelligent logistics, and intelligent administrative affairs**) for “Universiade transport” to provide assurance services.
- Beijing 2022 Winter Olympics**
China TransInfo created a **traffic security brain** based on **AIoT product solutions** and built a traffic security dynamics cockpit for the Winter Olympics.
- Chengdu 2023 Universiade**
China TransInfo created the Universiade Smart Transport Assurance System to provide accurate, flexible, green, low-carbon, safe, and efficient transport assurance services for guests from all over the world.
- Hangzhou 2023 Asian Games**
China TransInfo demonstrated its commitment in the Asian Games venues with **intelligent guards** and event solutions featuring **“big data + omni transportation integrated governance.”**

Case Safeguarding the Chengdu Universiade

To ensure efficient and organized urban road traffic and transportation systems during the Chengdu Universiade, we actively contributed to the establishment of the smart transport assurance system for the event, furnishing robust technical assistance for Chengdu's traffic management and services. In the Smart Transport Assurance Construction Project for the Chengdu Universiade, we propelled the sustainable evolution of urban transportation leveraging the foundational construction of Chengdu TOCC, ensuring transport logistics for the games.

We harnessed cutting-edge technologies including 5G, big data, and AI, assuming full responsibility for developing both software and hardware systems, constructing supportive frameworks, expanding data centers, and upgrading communication security. Through these endeavors, we erected an efficient smart transport assurance system tailored for the Universiade. This system coordinated and managed IT and intelligent tasks encompassing transport, distribution, decision-making, and public services throughout the games. It facilitated smooth and unhindered traffic operations during the games, delivering a quality traffic experience for participants and spectators.

System construction

To meet the transport assurance demands of major events such as specialized vehicle distribution, venue monitoring, and public transport coordination, we developed an efficient smart transport assurance system tailored for the Universiade. This system coordinated and managed transport distribution, decision-making, and public services throughout the games;

Data engineering

We extensively analyzed the transport assurance requirements of the Universiade and successfully established a comprehensive three-dimensional data model. This included integrating Universiade data resources, constructing databases and data interfaces, and managing the fusion of relevant commercially acquired data;

Support systems

Based on the application requirements of the project, we collaborated to upgrade and expand both software and hardware equipment, including computing and storage resources, at the TOCC Integrated Traffic Data Center. We also established a robust network environment and completed the setup of the Universiade Traffic Command and Distribution Center, along with temporary traffic distribution points on-site. Additionally, we developed a big traffic data support platform, a unified authority platform, a three-dimensional visualization platform, and a mobile collaborative work platform to cater to the application and operational needs of multi-level users participating in the Universiade.

By deploying transport capacity resources based on scientific principles, we enhanced coordination between event transport and public transit, ensuring that urban public transportation operated in a coordinated, orderly, green, and low-carbon manner while enhancing vehicle operational efficiency. Achieving our goal of “zero complaints and zero accidents,” we successfully fulfilled the transport assurance mission for the Chengdu 2023 Universiade. We provided safe, punctual, efficient, and orderly special vehicle transport services for over 11,000 domestic and foreign guests, referees, technical officials, athletes, and journalists.



Transport assurance for the Chengdu Universiade

Case China TransInfo contributes to Kunming's digital transportation

We have assisted Kunming in constructing the TOCC project and established the Kunming TOCC system architecture that consists of “one platform, one center, and five applications.” By promoting the convergence of various modes of transportation into integrated transportation, we have enhanced fine-grained supervision in the industry and improved the science-based decision-making ability for transportation matters. This move has also boosted the integrated development of transportation and tourism in Kunming.

Integrated monitoring of the city's transportation operation dynamics

Transportation data from categories such as city buses, metro, taxis, bicycles, parking lots, expressways, transportation administration, civil aviation, airport shuttles, and water transportation are integrated and accessed to achieve integrated and converged monitoring of the city's transportation.

Centralized management of operational abnormalities in the industry

The city's operating vehicles, slow traffic, on- and off-road parking lots, and other subdivided transportation areas are under digital supervision, and vehicles receiving warnings of violations are remotely verified and promptly handled.

Data application empowering communication enterprises in operational decision-making

Based on the TOCC's analysis results that integrate big data on passenger flow from rail, bus, bicycle, and taxi, the operation of bus routes has been optimized and adjusted, resulting in a significant increase in the number of bus passengers per km.

Data sharing application contributing to the integrated development of transportation and tourism

The TOCC works closely with the Yunnan Provincial Department of Transportation, Changshui International Airport, the municipal detachment of road enforcement, and other agencies, as well as platforms such as Go Yunnan and iKunming. Three-dimensional modeling, intelligent visual algorithms, and other technologies are applied to contribute to the integrated development of transportation and tourism in Kunming through data sharing and application.



Bus stop connectivity analysis



Integrated transportation road net operation analysis

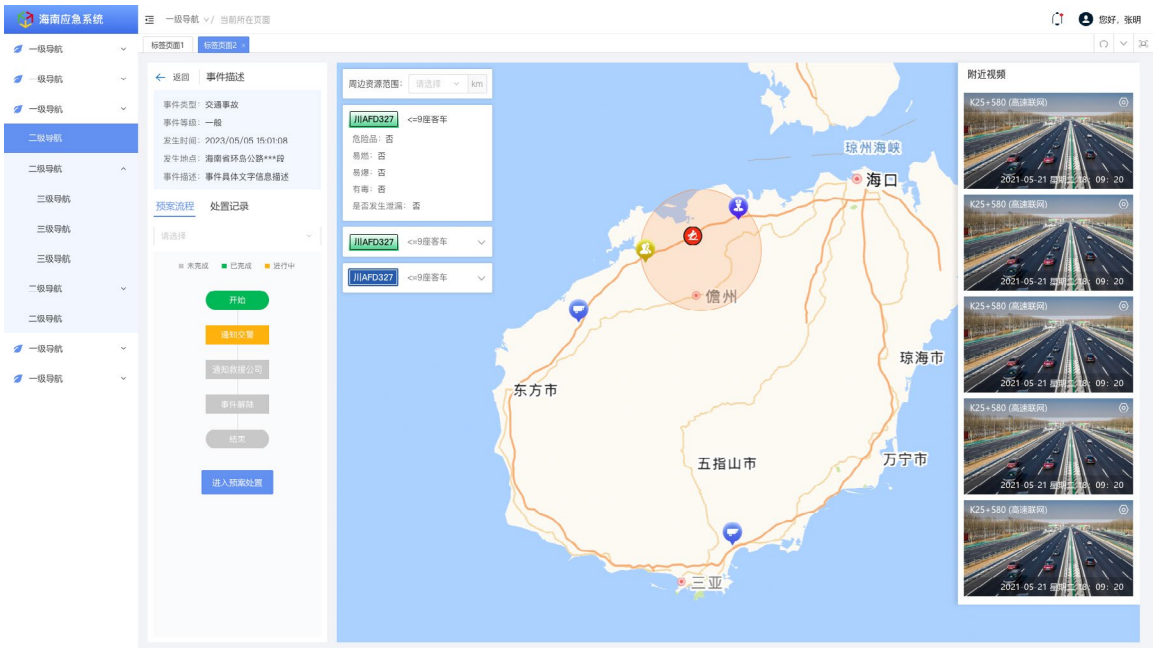
Smart Highway

At China TransInfo, we are committed to constantly refining our express road net product portfolio and enhancing service efficiency to drive the evolution of highway asset management toward intelligent and sustainable development. Adhering to the latest management standards and highway technology monitoring requisites, we devise practical solutions tailored to specific scenarios. These include initiatives such as intelligent upgrades for service areas, enhanced management and control of tunnel operations, and the modernization of toll stations to meet standardized requirements.

After the completion of large-scale highway construction, we implement digital management practices for highway assets. Guided by the latest industry standards and specifications, as well as the annual monitoring and evaluation requirements for the technical condition of the national road net, we enhance our highway maintenance management comprehensively. This approach enables us to set a benchmark for the sustainable development of the highway sector, driving improvements across all facets of highway maintenance management.

Case Construction of the Hainan Smart Island-Looping Highway

We have launched the project of the Hainan Smart Island Ring Highway, with a commitment to making the Hainan Island-Looping Tourism Highway a world-class smart tourism highway and contributing to the sustainable development of the Hainan Free Trade Port. In this project, we have integrated the new concept of “tourism + highway + culture + smart technologies.” Applying big data, AI, blockchain, and other technologies, we have built a big traffic data center, transportation AI service center, intelligent monitoring and collaborative service platform, information service platform for the integrated development of transportation and tourism, and service platform for vehicle-road coordination automatic driving, thus contributing the digital transition and upgrading of Hainan's highway management. We completed the detailed design of the project in 2023, and we are about to launch the system for trial operation in October 2024. Our aim is to build a national smart tourism highway that is “safe and smooth, featuring high-quality services, green and low-carbon, and presenting distinctive characteristics.”



Construction of the Hainan Smart Highway

Safe Travel

To enhance our traffic safety management efforts, we have implemented a big-data-driven traffic safety warning platform. Furthermore, in line with the requirements of road safety accident prevention, we have aggregated various accident and violation data resources from traffic control departments, establishing a traffic safety governance business think tank dedicated to safeguarding people’s travel safety. At China TransInfo, we are continually engaged in researching and developing technologies for urban and rural road safety governance, launching innovative solutions to address emerging challenges. Additionally, we foster external collaborations, pooling resources to promote the dissemination and advancement of road safety technologies, thereby contributing to the overarching goal of ensuring traffic safety.

Urban Traffic Safety Governance

At China TransInfo, our focus lies in tackling the pain points and obstacles encountered in urban transportation, such as “parking difficulties, traffic congestion, and disorder.” Leveraging the power of big data, we have devised a comprehensive approach dubbed “one plane and multiple points,” which encompasses all urban scenarios to effectively address common issues in urban transportation operations. We are dedicated to optimizing the road net structure, organizing traffic flow, managing parking spaces, enhancing public transportation systems, facilitating slow traffic, upgrading infrastructure, implementing technological solutions, and harnessing the potential of data empowerment. Through these concerted efforts, we strive to enhance our overall urban traffic governance capabilities

Case An integrated traffic governance solution for hospitals

Targeting the problems of “difficulties in parking, traffic congestion, and disorder” in the traffic around hospitals, we adopt a “1 + X” governance method. It means that we focus on “1” principal contradiction in solving the difficulties of hospital visitors in parking and adopt “X” measures, including parking governance, road governance, public transport governance, traffic organization optimization, as well as co-management and governance. We also conduct big-data-based evaluations and diagnoses and adopt holistic approaches to create an orderly, smooth, and comfortable environment for medical consultations.

We expand parking resources by connecting with neighboring parking lots, swapping parking spaces within the hospital, adding on-road parking spaces, and changing parking lot layouts. We have also designed a reservation parking service and established a parking space-specific sensing system and a parking guidance system to improve parking utilization.

In terms of congestion, we have optimized traffic organization, adjusted road sections, optimized pedestrian and bus routes, and set up shuttle lines in parking lots. These initiatives have addressed congestion in a targeted way. Meanwhile, to address slow traffic, we have set up dedicated parking areas for public electric vehicles (EVs) and parcel and food delivery vehicles, set up electronic fences for shared bicycles, and delineated offline no-parking zones to safeguard the road rights of slow traffic.

China TransInfo’s integrated traffic governance solution for hospitals has been implemented in hospitals such as Zhejiang University School of Medicine Children’s Hospital Binjiang Division. It has basically eliminated parking queues and reduced the peak congestion index from 1.9 to 1.41.



Trucks, as the “red blood cells” of the transportation “artery,” deliver loads of “nutrients” for national production and daily living. In 2023, our focus was on enhancing the safety of heavy-duty trucks. We developed and launched a cloud platform specifically designed for monitoring the safety of heavy-duty trucks. This platform has been instrumental in assisting traffic police departments across various regions in China in effectively monitoring heavy-duty truck operations. In this way, we actively contribute to the Reduction and Control action plan for traffic safety (to reduce the total number of traffic accidents and mitigate the occurrence of extremely serious accidents). Through efforts in this regard, we have contributed China TransInfo’s insights for advancing highway traffic safety management.

China TransInfo’s cloud platform for heavy-duty truck safety monitoring is tailored to meet the management needs of traffic police departments at three distinct levels. At the macro level, it provides analysis and guidance on hidden danger dynamics. At the intermediate level, the platform facilitates early warning, command, and dispatch. At the micro level, it supports first-line on-site management and law enforcement. By promptly detecting hidden safety problems among key vehicles, operators, and road sections, the platform enables precise safety management, contributing to overall safety enhancement in heavy-duty truck operations.

Case Heavy-duty truck information service for Suzhou Traffic Police

We support Suzhou in 24/7 real-time monitoring of heavy-duty truck dynamics across the territory. We use big data technology to study the traffic safety hazards of heavy-duty trucks and perform heavy-duty truck safety management through multiple types of warning models. By setting up more than 300 virtual checkpoints in the city, we push the violation information to the police mobile terminal in real time, with a daily average of more than 800 pieces of interception and disposal information. In this way, we have established a closed-loop mechanism featuring automatic early warning, source recording and notification, and penalty for violations that targets speeding, fatigue driving, and other illegal behaviors of trucks crossing Suzhou’s borders on expressways and national and provincial highways.

Rural Traffic Safety Management

At China TransInfo, we are dedicated to continuously enhancing our integrated rural traffic safety management programs. Our efforts are aimed at addressing various challenges such as deficiencies in rural road design, inadequate traffic management, insufficient infrastructure, disorganized traffic flow, and limited awareness of traffic safety issues. We adhere to the philosophy of “consolidating infrastructure, understanding road situations, improving technology, and promoting safety awareness.” Through the application of “refined management plus intelligent technology,” we systematically analyze the impact of key elements—people, vehicles, roads, and the environment—on traffic accidents. Based on these findings, we have devised a governance approach that consists of two projects (traffic infrastructure and technology facilities) + two platforms (heavy-duty truck management and big data-based safety warning). We have implemented targeted governance initiatives for different sections of highways, with the aim of achieving our goal of “enhancing visibility, segment isolation, service improvements, speed reduction, and accident reduction.” By transitioning from the traditional reactive management approach of “remediation after accidents” to a proactive service and management model focused on “prevention before accidents,” we have made significant strides in improving highway traffic safety and effectively reducing the incidence of traffic accidents.



Case China TransInfo's Kunchao - Security Guard on guard 24 a day

We have developed the innovative China TransInfo Kunchao - Security Guard, which boasts the features of flashing light warning and sound reminder as well as the advantages of split assembly and environmentally friendly power supply. It plays a vital role in integrated rural traffic safety management.

Intersections of country lanes and national and provincial highways, where the traffic flow is low but the driving speed is high: The Security Guard can be set up only on the branch road or on both the branch road and the main road to enable timely warnings;

Intersections of schools, hospitals, communities, parking lots, and other important places immediately adjacent to the main road, where pedestrians and vehicles are dense: The Security Guard can be set up to warn of slow traffic, detect pedestrians and vehicles at the exit, and warn vehicles on the main road when pedestrians pass;

Sharp curves in mountainous areas, mostly with two lanes in both directions and without guardrails, where the driver's visual distance is short, and fixed license plates are difficult to attract the attention of drivers: The Security Guard can be set up on both sides of the curve to the right shoulder of the road to provide timely reminders when there are vehicles from the other direction in the blind spot of the curve;

Expressways and tunnels of main roads in mountainous areas, where there may be insufficient time for slowing down: The Security Guard can be set up in the tunnel in both directions at the entrance to the right shoulder of the road, and sensing equipment can be set up in the tunnel for communication to provide reminders through the Security Guard in the case of occupation or congestion in the tunnel.

By now, the China TransInfo Kunchao - Security Guard has been deployed and applied in many places in Hebei, guarding every intersection and road section without traffic police, signal lights, and markings.



China TransInfo Kunchao - Security Guard

Ecosystem

Promoting green development and low-carbon transition of the economy and society is the core to achieving high-quality development. At China TransInfo, we recognize the importance of responsible corporate citizenship and are dedicated to leveraging our technological expertise to drive innovation in green development strategies. We strive to offer advanced technological solutions for traffic congestion management and deliver refined intelligent services aimed at conserving biodiversity and enhancing the sustained improvement and restoration of the natural environment.

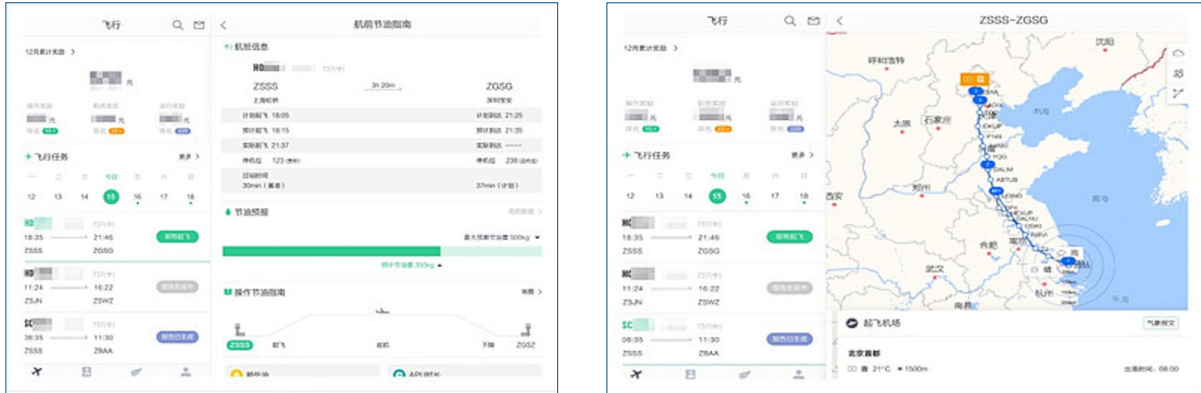
Green and Low-Carbon

At China TransInfo, we are committed to implementing a development strategy focused on achieving “carbon peak and carbon neutrality.” Guided by the principle of “four-network integration,” which encompasses the traffic, energy, information, and transportation networks, we actively cultivate innovative application scenarios and explore pathways for integrating transportation and energy systems. We have launched the “three-network integration, coordination, and optimization scenarios” integrating both static and dynamic data from the rail, bus, and slow traffic networks (the “three networks”). Through collaborative efforts with relevant enterprises, we adjust the operation and organization of these networks to enhance service quality and efficiency. Consequently, we facilitate smoother shuttle and transfer services between the “three networks,” thereby promoting green travel and contributing to carbon reduction initiatives within urban areas.

Case China TransInfo's smart fuel saving solution for civil aviation taps into fuel saving potential

Fuel costs are an integral part of an airline's operating costs. Therefore, reducing fuel costs while ensuring operational safety is the core concern of every airline. China TransInfo's smart fuel saving solution for civil aviation applies big data technology to tap into fuel saving potential while ensuring operational safety. We have designed a data integration governance engine, a digital portrait (indicator) development engine, and a digital application (monitoring) engine to enable refined data management and model prediction. The solution assists airlines in reaching fuel saving targets in a “one-stop” manner, thus reducing fuel costs, promoting green, low-carbon, and high-quality development, and setting a new benchmark for smart airlines.

By now, China TransInfo's smart fuel saving solution for civil aviation has been promoted in Juneyao Airlines, China Postal Airlines, Hong Kong Airlines, and other airlines, bringing customers diversified benefits in fuel saving, safety, management, and R&D. In the case of Juneyao Airlines, it saved cumulatively 5,393 tonnes of fuel from January to September 2023, equivalent to reducing 16,900 tonnes of carbon dioxide emissions, representing a direct saving of nearly RMB 38 million in fuel costs.



The digital portrait (indicator) development engine

Case

“Qilian” Blended View Tape Cloud for carbon reduction in storage

To meet the rapidly growing and unpredictable demand for video data storage, we have developed the “Qilian” Blended View Tape Cloud. It guarantees the security and availability of long-term data storage and fits for long-term video storage of large and medium-sized video surveillance systems in many sectors, such as finance, transportation, power, and energy.

The “Qilian” View adopts a hierarchical data storage strategy, with a 6:4 data storage allocation ratio in typical application scenarios. If applied to data storage globally, it will reduce about 72 million tonnes of carbon dioxide emissions, making a significant contribution to global climate governance.

Nature Positive

At China TransInfo, we dedicate ourselves to launching ecological conservation solutions empowered by technology. Leveraging advanced technological equipment, we continuously monitor and assess the ecological environment and wildlife in real time, exerting every effort to uphold ecological care.

Case

Uniview’s intelligent positioning camera performs intelligent monitoring of forest and grassland fires in Chongqing

Chongqing is a key city for forest fire prevention, and it upholds the highest standard for forest fire prevention in the country. Uniview has installed dual-spectrum high-precision positioning cameras in Chongqing’s Dianjiang County, Yubei District, and Nanan District to improve local monitoring coverage. Combined with an intelligent smoke and fire recognition algorithm utilizing both front-end and back-end mixed analysis, the system efficiently identifies smoke, fire, and heat sources in the area. Integrated with the back-end forest fire prevention platform, this solution facilitates early prevention, timely detection, and swift response to fires across the entire region. Uniview’s forest fire prevention solution extends its impact to numerous mountainous and forested areas nationwide, enabling comprehensive, multi-faceted management characterized by “early warning, command and response, archiving and retrospective analysis.”



Uniview's intelligent positioning camera

Case

Uniview’s “AI Swift Observation in Beijing” included in the World Internet Conference AI for Social Good Action Plan (2023-2025)

Through years of efforts, Uniview has overcome engineering technical problems such as the internal construction of ancient wooden buildings by using technical AI machine vision and intelligent analysis equipment. Through 24-hour uninterrupted observation and sound picking on the nests of swifts, Uniview has acquired a large number of precious videos of swifts in Beijing about their nesting, egg-laying, hatching, and growth of the newborn swifts, providing rich research materials in the return of swifts every year, their living habits, and other aspects. In June 2023, Uniview’s “AI Swift Observation in Beijing” was included in the *World Internet Conference AI for Social Good Action Plan (2023-2025)*.

Case

Observation Project with the Beijing Raptor Rescue Center

Uniview and the Beijing Raptor Rescue Center continued their intensive cooperation by launching the second phase of the Raptor Observation Project. In the project, they took high-definition photos and provided livestreaming of raptors, and presented their results to the world on the China Global Television Network (CGTN) and other platforms. Empowered by specialized technical devices, they strived to enhance the influence and recognition of the raptor conservation project. This approach of using technology to support biodiversity conservation inspires more bird lovers to learn and engage in biodiversity conservation actions.



A photo taken by Uniview’s device

Case

Conservation of red pandas at the Nanjing Hongshan Forest Zoo

Red panda populations have been seriously restricted by the fragmentation of habitats due to climate change and human interference. Uniview has donated video surveillance devices and built an internal and external video network for red pandas at the Nanjing Hongshan Forest Zoo to help keepers better observe the daily behaviors of the red pandas. The deployment of the 360-degree panoramic monitoring system enables keepers to learn the behavioral patterns of the red pandas in an all-round way and perform prompt scientific feeding and health management. This move is of great significance in improving the quality of life and reproductive success of red pandas.

At the same time, alert bullet cameras have been installed, which protect the habitat of the red pandas from the interference of tourists while ensuring the safety of tourists and preventing possible accidental contact. Such technological inputs not only reflect Uniview’s social responsibility but also demonstrate the value of technological innovation in wildlife conservation.



Livable Life

At China TransInfo, we are guided by the tenet of “technological innovation for society” and committed to advancing the high-quality development of cities through cutting-edge technology. We have cultivated a diverse range of product lines, spanning building management, park development, scenic spot services, commercial complexes, and urban governance. Our focus remains on delivering customized solutions to cater to the unique needs of our customers. These products and solutions are designed to address the comprehensive requirements across multiple sectors, emphasizing intelligence, efficiency, as well as environmental sustainability. By doing so, we contribute to fostering a more harmonious, convenient, and intelligent urban living environment.

Optimizing Urban Governance

We continuously enhance the effectiveness of our smart city construction and governance system, assisting relevant departments in bolstering urban management and emergency response capabilities through the deployment of advanced algorithmic technologies and modernized system platforms.

Capitalizing on our expertise and strengths in dynamic traffic and integrated urban governance, we have introduced the industry’s pioneering dynamic-static-integrated city-level smart parking solution, taking into consideration the holistic perspective of the city. This solution addresses the needs of city administrators, parking operators, and commuters alike, effectively mitigating challenges such as parking difficulties, traffic congestion, disorder, and management complexities experienced by many cities.

We comprehensively coordinate the requirements of policies, urban planning and construction, operational law enforcement, and governmental oversight, with a specific focus on smart parking implementation. By doing so, we achieve digital and intellectual empowerment simultaneously, catering to both supply and demand sides. This approach refines urban management practices and contributes significantly to the advancement of smart cities while effectively tackling urban parking challenges.



Case Smart parking in Nankai District, Tianjin, improves citizens’ parking experience

In the smart parking governance in Nankai District, Tianjin, we uphold a “four-in-one” parking industry development methodology, in which we take “the legal system as a guarantee, advanced technology as the core, science-based management as a support, and digital empowerment as development momentum.” We assist urban management departments in top-level design and create a static traffic governance system that features “one center, two platforms, three projects, four supporting facilities, and N + empowerment” following a “1+2+3+4+N” structure for the city, thus achieving systematic urban parking governance.

Through integrated governance, we have systematically solved urban parking issues and promoted the digital and intelligent transition of the urban parking industry. At the same time, we have realized parking across the city using just an APP, which has improved car owners’ parking experience through unmanned, standardized, and refined services.



The smart parking solution

Case Supporting dog-keeping in a civilized manner and protecting citizens

Uniview utilized the Wutong LM to develop an intelligent detection algorithm for unleashed dogs in less than 10 days. The algorithm is integrated into the AI BOX intelligent analysis box. Relying on this technology, Uniview has launched an innovative “solution for dog-keeping in a civilized manner” applicable to multiple scenarios such as gated communities, parks, squares, primary and secondary schools, and kindergartens. Its 24-hour intelligent monitoring assures residents and brings harmony to communities. The solution prevents dangerous incidents of dog attacks in venues where students and children gather, supports properly rescuing and resettling stray dogs, and effectively enhances the public’s awareness of dog-keeping in a civilized manner.

In December 2023, the “solution for dog-keeping in a civilized manner” was rolled out in Changsha, Hunan Province. The system automatically detects residents walking their dogs without a leash and triggers an alarm, sending the information to the property managers’ mobile phones, thus effectively strengthening the supervision of dog-keeping behaviors.

Empowering Rural Development

In our pursuit of enhancing the quality of life for community and rural residents and accelerating rural revitalization, we have embraced smart and digital technologies to infuse innovative energy into community and rural infrastructure as well as public services. By integrating these technologies in application, we have succeeded in cultivating a more convenient and enjoyable living environment for residents. Leveraging technological advancements, we have transformed rural dwellings into picturesque homes, thereby bringing warmth and convenience to every individual.

Case

China TransInfo supports Weiyuan, Sichuan, in setting a model for the digital transition of county transportation

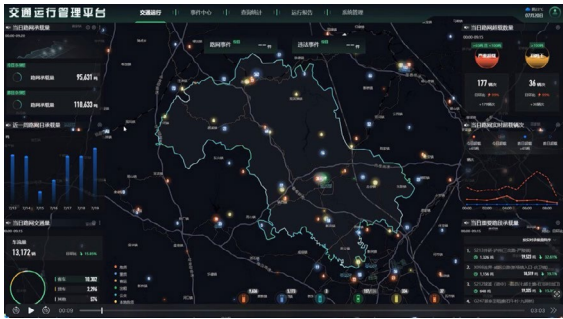
We have provided support to Weiyuan County, Neijiang, Sichuan Province, in the establishment and operation of a three-dimensional integrated traffic governance system. Within this project, we have defined digital business scenarios such as leveraging technology for controlling speeding, managing road transportation of hazardous goods, and overseeing the maintenance of “high-quality rural roads” (roads that are appropriately constructed, operated, managed, and maintained). Additionally, we have developed a preliminary monitoring and scheduling platform for integrated transport law enforcement and incident management. These initiatives serve as the foundation for traffic governance and fostering sustainable economic development in Weiyuan County.

The non-stop detection system for the technology-enabled control of speeding and the transportation operation and command system platform: This system and platform facilitate quantitative analysis of road net structure and cargo flow. They integrate with weighing equipment installed by freight source enterprises and monitoring systems for commercial passenger vehicles, alongside multi-party front-end sensing equipment. This integration enhances the perception of key nodes within the road net and strengthens IT-enabled transport law enforcement.

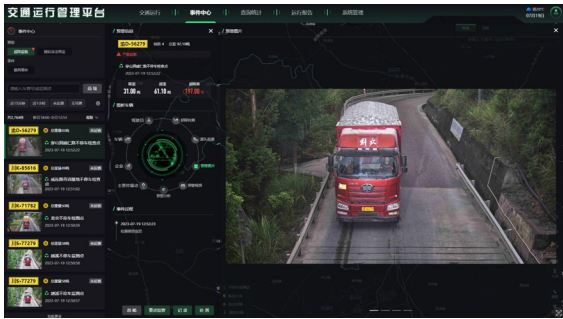
IT management platform for the road transportation of dangerous goods: Leveraging satellite positioning and electronic fencing, this platform compares and analyzes the illicit behaviors of ordinary trucks transporting dangerous goods. Developed on the foundation of the Emergency Management Bureau’s equipment installation project for source enterprises, it enables comprehensive monitoring of the entire transportation process of dangerous goods, thereby enhancing supervision over such transportation activities.

IT management platform for high-quality rural roads: Evolving from the transportation operation and command platform, this system follows a five-dimensional overall planning approach encompassing “construction, management, maintenance, operation, and disposal” in the transportation industry. Significant enhancements have been made to various modules, including the image analysis center for transportation road nets, the traffic event analysis center, illegal operation screening, and transportation operation reports. This platform comprehensively enhances management capabilities across decision-making support, safety and emergency response, command and dispatch, and technology-enabled law enforcement.

In collaboration with the Transport Bureau of Weiyuan County, we have introduced the County Integrated Transportation Information Service Platform, enhancing and reconstructing the county’s digital transportation framework guided by the overarching principles of “unified construction and shared utilization, data empowerment, and scenario-driven implementation.” We remain committed to delivering “companion-style services” to facilitate the comprehensive digital transformation of Weiyuan’s transportation sector. Through these efforts, we aim to contribute significantly to the county’s sustainable economic development.



Transportation operation and management platform of Weiyuan County



Weiyuan County's road transportation management for dangerous goods

Industry Empowerment

At China TransInfo, we are committed to assisting traditional industries in their journey towards intelligent upgrading, empowering diverse sectors to revolutionize and enhance their collaboration, interaction, and decision-making capabilities. In pursuit of this mission, we continuously innovate intelligent application scenarios, setting a new paradigm for industry development.

China TransInfo Cloud Police

Amidst the rapid advancements in AI, we are proactively exploring the application of LMs within the transportation industry. As part of this initiative, we have introduced the groundbreaking LM application called “China TransInfo Cloud Police.” This innovative solution is tailored to bolster the Reduction and Control action for preventing traffic accidents through digital and intelligent means, thereby ensuring the safety of heavy-duty trucks.



Release of the “China TransInfo Cloud Police” LM



Collaboration capability:

The LM-empowered “China TransInfo Cloud Police” boasts exceptional collaboration capabilities, enabling high-quality information responses across all processes at a single counter within seconds. For instance, in addressing the hidden hazards of fatigue driving, all tasks—from identifying high-incidence locations to duty arrangement, case reception and response, early warnings and reminders, to law enforcement actions—can be efficiently managed at a single counter. This streamlined approach reduces interactions by 75% and enhances law enforcement efficiency by 30%.



Interaction capability:

Leveraging the LM’s prowess in multi-round dialogues, copywriting, logical reasoning, and multimodal comprehension, the “China TransInfo Cloud Police” can generate multimodal responses tailored to specific needs. These responses may include text, images, charts, and driving tracks, effectively assisting in resolving real-world issues.



Decision-making assistance capability:

With access to comprehensive LM data and extensive knowledge of the transportation industry, the “China TransInfo Cloud Police” facilitates rapid understanding and mastery of the latest traffic management policies and regulations. Moreover, it provides users with a scientific foundation for law enforcement decision-making.

Creative Travel

In 2023, we capitalized on the burgeoning trend of generative AI by introducing our groundbreaking product, Uniview VLOG. This innovative generative AI product has found applications in nearly 100 scenic spots nationwide, including renowned destinations such as Mount Wudang in Hubei, Mount Luofu in Guangdong, and Gubei Water Town in Beijing. Leveraging advanced Artificial Intelligence Generated Content (AIGC) technology, our product intelligently sifts through and edits highlights from raw videos captured by tourists during their visits to scenic spots. Additionally, it automatically incorporates special effects, beautification enhancements, and background music to produce personalized short travel videos. Compared to traditional offline photo-taking services, this innovative approach to travel commemoration offers notable advantages in terms of content richness, production efficiency, and cost-effectiveness.

In the era of user-generated content, everyone possesses the potential to become a content creator and distributor. Uniview VLOG perfectly aligns with tourists’ desires for personalized travel mementos, offering them a fresh interactive travel experience. Furthermore, it aids local governments in promoting cities and tourist destinations while driving digital advancements in scenic areas and fostering innovation in cultural and tourism services.

02

Innovative Vision Driven by R&D

Corporate growth thrives on scientific and technological innovation and is bolstered by our R&D talent. At China TransInfo, we actively embrace the role of a “front-runner” in urban governance, livelihood improvement, and green innovation. We drive the strategic blueprint of digital cities through innovation, elevate people’s travel experience with innovative practices, and contribute new ideas to the industry’s high-quality development.

Contributing to the United Nations Sustainable Development Goals (SDGs)



Our Actions

- Consolidating the foundation of scientific research
- Protection of intellectual property
- Driving the development of the industry

Our Achievements

R&D investment: RMB **1.1** billion

Technical personnel: **2,573**

Intellectual properties: **5,061**

Consolidating the Foundation of Scientific Research

At China TransInfo, we are always driven by innovation. We have established a robust innovation management mechanism, and we actively cultivate industry-leading experts to continuously enhance our R&D capabilities.

Sci-Tech Innovation Management

- At China TransInfo, we adhere to innovation-empowered development. We have established a robust R&D and innovation management system, introducing measures such as the *Scientific Research Project Management Measures* and the *Qualification Management Measures*. These internal policies offer clear guidance and standards for managing research projects within the Company, ensuring that our R&D activities proceed as planned.
- We have improved our scientific and technological innovation platforms. We have established 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." In 2023, we successfully underwent reviews for the "National Enterprise Technology Center" by the National Development and Reform Commission and earned recognition as the "National Model Enterprise for Technological Innovation" by the Ministry of Industry and Information Technology (MIIT). Additionally, our capacity-building project, the Beijing Engineering Research Center for Vehicle-Road Coordination and Autonomous Driving, was approved and launched.

Stimulating Innovative Drive

- We have increased our R&D investment to ensure sufficient resources for the R&D of new products and technologies. By formulating competitive policies to attract and nurture talent, along with implementing internal management systems like the *Employee Professional Qualification and Title Incentive Measures*, we aim to inspire our team members to enhance their professional skills and actively engage in R&D projects. These initiatives spark employee enthusiasm and creativity, fostering a culture of continuous self-improvement. In 2023, we invested RMB 1.1 billion in R&D and boasted an R&D workforce of 2,573.
- We encourage our employees to share innovative ideas and suggestions. Continuously enhancing our innovation culture, we cultivate an atmosphere within the Company that embraces taking bold initiatives and rising to challenges. Maintaining close partnerships with esteemed universities, we have pioneered a new model of university-enterprise cooperation, injecting fresh momentum into scientific and technological innovation and personnel training. In 2023, our collaborations with Beihang University and Beijing Union University resulted in the development of the Fusion Control Laboratory and the Control Safety Laboratory, where we conducted research activities. Aligning with our core objectives and research tasks, we collaborated on scientific research, personnel training, standard development, and open cooperation efforts.

Scientific Research and Innovation Achievements

- At China TransInfo, we actively promote the conversion of technological and scientific breakthroughs into practical applications. Focusing R&D and implementation efforts in key areas such as AI algorithms, big traffic data, and cloud-edge-terminal integration, we have achieved significant strides in important technologies. In 2023, our "Edge Computing Unit Kunchao" was recognized as a new technology and product (service) by the Beijing Municipality. The "R&D and Application of Edge Computing Products for Connected and Collaborative Transportation" was acknowledged as a typical case of IoT-driven industry development by the MIIT. Furthermore, our project "Kunchao·Dual-Smart Intersection: The next-generation urban transportation computing infrastructure" was selected as a typical case of advanced computing application by the MIIT. The Highway Network Operation Monitoring and Service Platform, developed for the Ministry of Transport, was certified as a patent-intensive product. Throughout the year, we received one national/provincial science and technology award and undertook two significant national, provincial, and ministerial special projects.
- We actively pursue industry-university-research collaborations, leveraging the expertise of academia to drive innovation. Additionally, our R&D efforts are aligned with the Company's strategic objectives, ensuring that we remain forward-looking and responsive to market demands. By enhancing our technology leadership and developing benchmark products, we uphold our leading position in industry technology and maintain a distinct competitive edge in the market.

Case China TransInfo partners with Alibaba Cloud to create a transportation LM

In April 2023, as the only enterprise from the transportation sector among the first batch of partners of the Qianwen Partner Program, we were invited to attend the Alibaba Cloud Partners Conference. We will work with Alibaba Cloud to promote the application of LMs in the transportation sector and explore better solutions for smart transportation.

Our intensive collaboration with Alibaba Cloud started in 2019, since when we have launched joint solutions in smart highways, smart traffic control, smart transportation, and smart civil aviation. We jointly created the Chengdu Urban Integrated TOCC and several smart transportation benchmark cases, including the Hebei section of the Yanqing-Chongli Expressway, which is also the Ministry of Transport's next-generation traffic control network and smart highway.



China TransInfo partners with Alibaba Cloud to provide smart traffic governance plans

Recognitions and awards

- The research project *Key Technologies for Bottleneck Identification and Integrated Control for Transportation Networks in Large Cities* won the first prize in the Science and Technology Advancement Award.
- China TransInfo's Highway Network Operation Monitoring and Management Service Platform was recognized as an Innovative Digital Solution of Beijing.
- China TransInfo City-Level Smart Parking Solution was recognized as an Innovative Digital Solution of Beijing.
- The Kunchao-Dual-Smart Intersection, a New Generation of Urban Transportation Computing Infrastructure, was included in the list of Typical Application Cases of Advanced Computing in 2023 (urban brain).



Case China TransInfo provides new scenarios of urban smart travel

The *Urban Smart Travel Service Technology Integration and Comprehensive Platform*, a project under the National Key Research and Development Project of China led by us, passed the performance evaluation. The project innovatively applies the technology of data-driven all-element big traffic data convergence and fusion and the technology of cross-platform smart travel sectoral service empowerment. It facilitates travel data exchanges and business integration among traffic management departments, transport departments, urban management departments, map and travel service providers, and third parties such as buses, metro, online car-hailing, and bicycle sharing. The project has been applied for demonstration in Suzhou.

Case China TransInfo participates in constructing a public service platform to facilitate smart vehicle-road coordination management for expressways

The construction project we participated in, “*Leading Application Environment Construction and Scenario Testing and Verification Platform for Connected Vehicles*,” has been accepted by the expert group. In this project, we have solved several technical and application challenges in the industry in an innovative way. These challenges include application scenario design, practice, testing, and validation for vehicle-road coordination; radar-vision fusion multi-source sensing; cross-intersection target tracking and succession; engineering of the whole process of sensing deployment, calibration, fusion, and commissioning. Our efforts have contributed to the completion of China's first demonstration project of smart expressways enabled by vehicle-road coordination that is cross-provincial, the longest, and in practical use.

Case China TransInfo wins the first prize in the Science and Technology Advancement Award of the Ministry of Education

Our research project, *Key Technologies for Bottleneck Identification and Integrated Control for Transportation Networks in Large Cities*, completed in cooperation with Beijing Jiaotong University, Beijing Smart Transportation Development Center, and other entities and experts, won the first prize in the Science and Technology Advancement Award of the Ministry of Education. This project is an excellent research result of intensive cooperation and collaborative innovation between universities and enterprises in transportation. Through more than ten years of research, the researchers have tackled the technical problems of constructing an integrated transportation data lake and model library for large cities. They have created the technology for identifying bottlenecks and predicting integrated demands in transportation networks in large cities, and built a technology system for the integrated intelligent management and control of transportation networks in large cities. The project has brought R&D results such as traffic data fusion and storage, network bottleneck identification and prediction, integrated intelligent management and control, and other core technology products. The project has marked a major technical system innovation and practical application in this field.

Protection of Intellectual Property

We respect and protect intellectual property rights and comply with the *Patent Law of the People's Republic of China*, the *Trademark Law of the People's Republic of China*, and the *Copyright Law of the People's Republic of China*. We have devised the Measures for the *Management of Intellectual Property Rights*, the *Measures for the Management of Patents for Service Inventions*, the *Measures for the Management of Trademarks*, the *Measures for the Management of Copyright Registration*, and the *Measures for the Reward of Patents for Service Inventions*. These internal policies and systems are designed to regulate our intellectual property management processes, facilitate the dissemination and application of scientific and technological achievements, and mitigate legal risks associated with intellectual property.

We prioritize the protection of our intellectual property assets. Utilizing products as carriers, we integrate industry expertise, software copyright registration, patent deployment, and trademark strategies to establish a robust intellectual property “moat” involving multiple stakeholders. This approach is designed to comprehensively protect the Company's intellectual property and preempt any potential infringements on the intellectual property of others.

In terms of trademark management, we have established a graded trademark management mechanism and developed a dynamic monitoring system for our core trademarks. Through continuous registration and risk assessment, we ensure the stability of the core trademark rights associated with our primary brands, thus safeguarding the Company's trademark rights.

We are committed to protecting the legitimate rights and interests of intellectual property rights holders. To achieve this, we conduct regular training sessions on intellectual property, where we educate our employees about relevant policies and the significance of intellectual property rights protection. These efforts aim to enhance their awareness and capabilities in safeguarding intellectual property rights. In product development and market expansion, we prioritize intellectual property retrieval to prevent any infringements on the rights of others.

As of 2023



Intellectual properties	Authorized patents	Domestic invention patents
5,061	2,836	1,833
International invention patents	Software copyrights	
34	1,648	



548 new patents were applied in 2023, including 420 invention patents.

446 new patents were granted in 2023, including 282 invention patents.

Empowering Industry Development

At China TransInfo, we are dedicated to fostering an innovation ecosystem within the industry, advocating for standardization, and facilitating technology exchanges. Through these efforts, we consistently contribute China TransInfo's expertise to drive innovation and development in the industry.



- At China TransInfo, we leverage our leadership position in the smart transportation industry to actively engage in the development of national, local, and industry standards. By contributing to the formulation of these standards, we provide China TransInfo's expertise to promote innovative standardization across the industry.
- In 2023, we participated in the preparation of GB/T 43531-2023 *Test Method of Optical Performance for Multi-View Splicing Imaging Device* and another national standard; the local standard DB50/T 1380-2023 *Technical Requirements for Access to the Connected Joint Control System for Key Operating Vehicles*; and two industry standards. We also led the preparation of four group standards, including the *Data Exchange Protocol for Virtual Real Test Platform of Automated Vehicle*.

The national standard *Test Method of Optical Performance for Multi-View Splicing Imaging Device*: The standard specifies the applicable test equipment, conditions, method for the optical performance of splicing imaging devices. The test method consists of nine items, namely, horizontal field of view, frame rate, delay, synchronization, splicing misalignment, adjacent eye color difference, resolution, distortion rate, and sharpness difference.

The local standard *Technical Requirements for Access to the Connected Joint Control System for Key Operating Vehicles*: The standard specifies the system architecture of the key operating vehicle connected joint control system, general requirements, technical requirements for the access of vehicle-mounted terminals, technical requirements for the access of enterprise monitoring platforms, technical requirements for the access of government regulation platforms, and requirements for the data exchange between enterprise monitoring platforms and government regulation platforms.



- We actively participate in industry communication and exchanges, prioritizing cooperation based on mutual benefit and win-win outcomes. Our commitment is to create greater value and accomplishments alongside our partners, fostering coordinated development within the industry.

China TransInfo was elected as the first deputy director of the Working Committee for the Integrated Development of Transportation and Energy.



Case China TransInfo makes an eye-catching appearance at the 13th CTSE

In April 2023, we were invited to participate in the 13th China International Road Traffic Security Products Expo (CTSE). At that event, we comprehensively demonstrated the achievements of China TransInfo as a comprehensive and intensive practitioner and promoter of new transportation infrastructure in the era of digital intelligence. These achievements included integrated traffic governance solutions for all scenarios in urban to rural areas and a fully self-developed product portfolio encompassing "dual-smart" infrastructures and business computing units. We also shared the Company's exploration paths and practical results in the integrated innovation of digital intelligence technology and transportation scenarios and contribution to the high-quality development of the transportation industry.



China TransInfo shares its achievements in "Digital and Intelligent Empowerment."

Case China TransInfo attends the China Intelligent Transportation Market Annual Conference 2023

In May 2023, we were invited to attend the 12th (2023) China Intelligent Transportation Market Annual Conference, where we shared China TransInfo's thoughts on and practices of the digital upgrading of transportation. Focusing on traffic governance at intersections, we highlighted the "China TransInfo Kunchao - Intelligent Intersection" solution. In terms of integrated urban governance, we also elaborated on our city-level smart parking solution.

At China TransInfo, we have built up the five-in-one operation capabilities for the whole industry chain that integrate parking "investment, construction, management, operations, and services," which enhance the digitalized governance of urban parking in an all-round way. Relying on our complete smart parking product portfolio, we can provide one-stop products and technical services throughout the lifecycle to improve the efficiency and effectiveness of construction and operations. In parking operations, we optimize parking resources, upgrade technology platforms, and expand ecological resources, thus promoting the science-based and healthy development of the urban parking industry in the long term. In terms of financing innovation, we can assist cities in planning innovative financing solutions to drive the continuous improvement of urban infrastructure. In terms of industrial development, we focus on smart parking construction and operations to contribute to the digital upgrading of the urban parking industry and the transportation industry and drive the development and growth of the regional economy.



03

Employee Care and Common Progress

Contributing to the United Nations Sustainable Development Goals (SDGs)



At China TransInfo, we recognize our employees as the most valuable asset of the Company. Embracing a “people-oriented” approach, we prioritize the well-being of every employee and strive to cultivate a diverse, equitable, and inclusive workplace. Our goal is to provide a platform for every employee to showcase their talents and thrive.

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: **6,633**

New hires: **1,161**

Average training hours per employee:
46.84 hours

Protecting the Rights and Interests of Our Employees

We continuously improve our employment system to safeguard the fundamental rights and interests of our employees. With an open, equal, respectful, and inclusive approach, we attract talented individuals to join our team. Moreover, we optimize our compensation and benefits system and offer diverse communication channels to facilitate mutual growth and development with our employees.

Equal Employment

- We adhere to the principle of fair and unbiased employment and strictly abide by the *Labor Contract Law of the People's Republic of China*, the *Labor Law of the People's Republic of China*, the *Regulations on Work-Related Injury Insurance*, the *Provisions on the Prohibition of Using Child Labor*, and the *Law of the People's Republic of China on Protection of Minors*, and other pertinent laws and regulations. We have developed internal management systems such as the *Employee Handbook* and the *External Recruitment Management Measures*. We have also instituted clear prohibitions on the use of child labor and forced labor, thereby ensuring legal compliance to employment practices. We provide equal employment opportunities for all individuals, avoiding any discriminatory language or practices during the recruitment process and interviews. Moreover, we take measures to protect the legitimate rights and interests of applicants during registration and onboarding data collection. Discrimination based on gender, age, race, religion, disability, or any other factor is expressly prohibited within our organization.
- We are committed to fostering a diverse and inclusive work environment, actively seeking out employees from various backgrounds and with diverse skill sets to cultivate a well-rounded team. We offer employment opportunities for special groups, including individuals with disabilities and veterans. Furthermore, we prioritize the physical and mental well-being, as well as the career development, of employees with special needs. We provide necessary support and assistance to facilitate their smooth integration into the workplace.
- We extensively scout for talent through diverse channels, with a particular focus on key and core positions as well as exceptional graduates. Our emphasis is on recruiting technical, versatile, and business-oriented middle managers and key experts. We actively seek out fresh graduates for critical roles such as R&D and technical support. Moreover, we maintain long-term partnerships with several universities, including Beijing Jiaotong University, North China Electric Power University, Hebei University, and Yanshan University, to continuously attract emerging talent to our organization. In 2023, China TransInfo employed a total of 6,553 individuals, with 1,150 new hires joining our workforce, and achieving a 100% labor contract signing rate.

In 2023

China TransInfo employed a total of

6,633 individuals

New hires joining our workforce

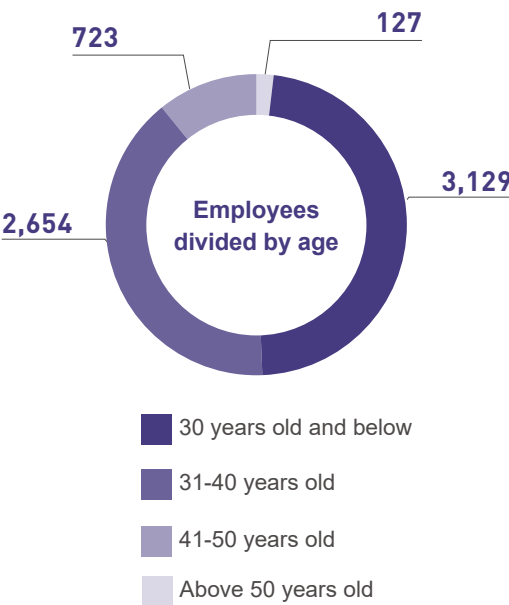
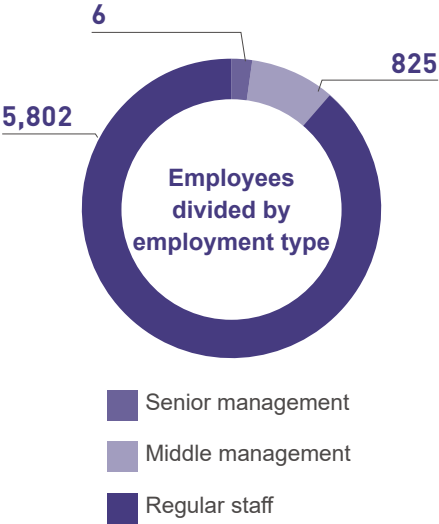
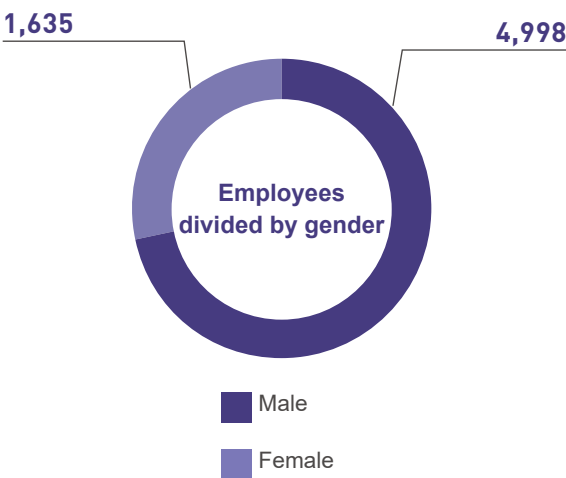
1,161

Labor contract signing rate

100%



Total number of employees (person)



Remuneration and Benefits

- At China TransInfo, we are committed to continually enhancing our remuneration management system to ensure our employees receive competitive compensation and benefits. In terms of insurance and benefits, we diligently fulfill our obligations by promptly paying social security insurance, which includes endowment insurance, unemployment insurance, employment injury insurance, maternity insurance, and medical insurance. Additionally, we provide supplementary medical insurance and accident insurance coverage for our employees. We prioritize the everyday well-being of our employees by regularly providing holiday and birthday gifts, as well as offering meal subsidies, medical checkups, and other benefits. These efforts are aimed at nurturing a supportive and caring environment, ultimately enhancing the overall welfare of our employees.

Employee Communication and Democratic Management

- We value the opinions and needs of our employees, striving to foster an open and inclusive communication environment. To facilitate this, we provide diverse communication and feedback channels, including the Cloud Home online comprehensive office management platform. This platform enables information sharing and teamwork and provides space for individual employees to express themselves. Additionally, we maintain a dedicated mailbox to ensure prompt response to employee demands and to safeguard their freedom of expression, thereby encouraging active engagement in corporate management.
- In addition, we conduct regular departmental meetings and employee seminars to promote communication and dialogue between management and employees. Special attention is given to communication with probationary and intern employees regarding their transition to regular employment status, ensuring that every employee's voice is heard. Through these initiatives, we not only strengthen team cohesion but also create opportunities for employees' personal development and mutual growth with the Company.

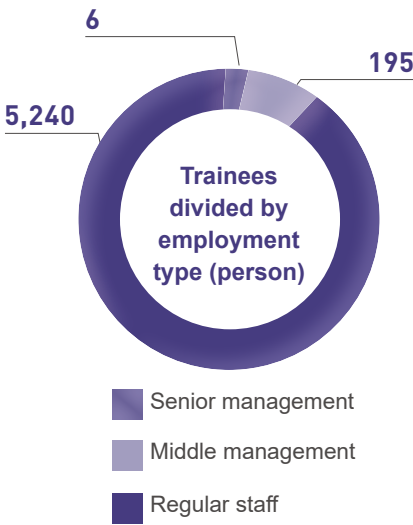
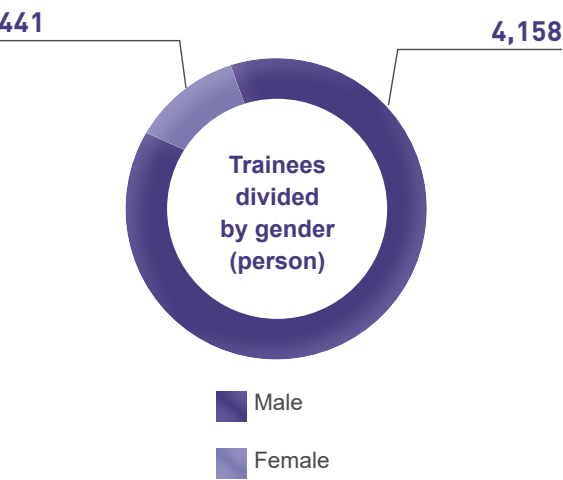
Supporting the Development of Employees

We offer a range of high-quality learning and development opportunities aimed at unlocking the potential of our employees and nurturing their ongoing personal and professional growth. In 2023, we updated our *Employee Professional Qualification and Title Incentive Measures* to further encourage and support employees to enhance their professional skills and motivate them for continuous self-improvement.

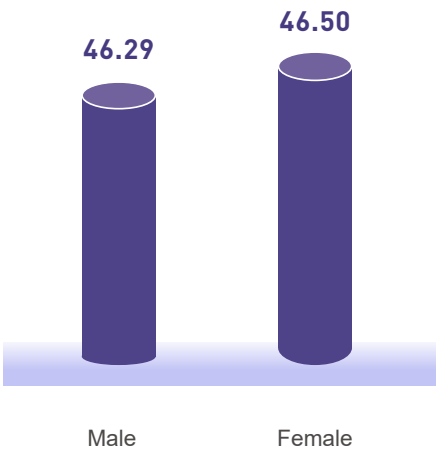
We continuously optimize our position and rank management system, standardizing processes for position creation, analysis, evaluation, and change. This includes maintaining a “dual-track” career development system comprising the “professional/technical track” and the “management track.” These efforts ensure a smooth path for promotion and cultivate a fair, unbiased, and transparent competition environment, providing ample career advancement opportunities for employees.

We attach great importance to employee training and motivation. To this end, we have established and improved our training system. Our goal is to deliver consistent, efficient, and systematic training to continually enhance employees' professional skills and overall quality and build a learning organization. We offer training across various domains such as technical product promotion, solution sharing, and legal practice. To cater to the diverse needs of our employees, we have launched a range of development programs tailored to different employee groups. We emphasize the integration of training and practical application, with managers and technical experts at all levels actively involved in developing and delivering training courses. This commitment is underscored by our philosophy of “training by the best achievers for better achievers.” To accommodate diverse learning preferences, we conduct various training activities through livestreaming and offline sessions.

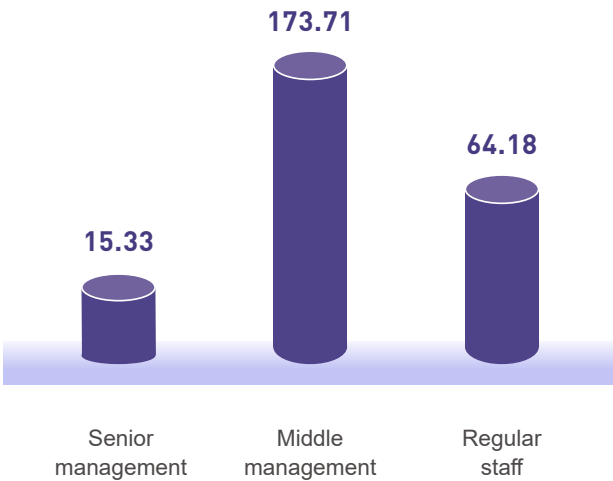
We have established a robust talent introduction policy and process tailored to the strategic objectives of the Company. Our emphasis is on recruiting for key and core positions as well as exceptional graduates, with a particular focus on technical, versatile, and business-oriented middle managers and key experts. We also maintain long-term cooperation mechanisms with universities for personnel training, achievement promotion, and various forms of university programs and project cooperation. Capitalizing on prestigious universities' advantages of rich professional resources and talent gathering, we continuously attract fresh talent.



Average training hours per employee by gender (hour)



Average training hours per employee by employment type (hour)



Safeguarding the Health of Employees

At China TransInfo, we strictly abide by the *Environmental Protection Law of the People's Republic of China* and the *Workplace Safety Law of the People's Republic of China*. We have improved our systems and documents such as the *Environment, Occupational Health and Safety Management Manual*, the *EHS Laws and Regulations Management Process*, and the *Occupational Health Management*. Additionally, we have established a Workplace Safety Office and implemented an internal mechanism for enforcement. These initiatives ensure the Company's preparedness for emergent situations.

We prioritize fostering a safety culture and cultivating a secure and comfortable workplace for our employees. This commitment includes initiatives such as having AEDs available in our offices. Furthermore, we enhance employee health and safety awareness through regular safety communication and training sessions. Additionally, we conduct annual programs such as fire drills and first aid training to ensure preparedness and mitigate potential safety hazards proactively.

We prioritize safeguarding the health of our employees by offering supplementary medical insurance coverage. This insurance provides additional medical care and accidental protection services, extending to both employees and their children. It offers robust protection, ensuring access to medical consultations and treatments. Additionally, we organize regular medical check-ups for employees and provide various medical and health consultation services tailored to their individual health needs. This approach enables employees to benefit from professional, personalized medical check-up services, thereby enhancing their overall health status. Furthermore, for employees engaged in high-risk projects, we provide specialized high-limit accident insurance to safeguard their interests.



Outdoor association of Uniview



TransInfo's basketball game



TransInfo's football game

Care for Employees



We are dedicated to cultivating healthy and pleasant office environments. For instance, we enhance indoor air quality by increasing plants into our office spaces, ensuring a fresh and comfortable workspace for our employees. Moreover, we offer a comprehensive range of amenities, including a physiotherapy room, hairdresser, laundry facilities, restaurant, cafe, gym, library, and basketball court, to cater to both their daily and recreational needs.



We stay attentive to our employees' requirements and continuously strive to enhance their living standards. Through partnerships with prominent housing agencies and real estate developers, we provide rental concessions for young employees, ensuring they have access to reasonable living accommodations. This initiative fosters a sense of belonging and satisfaction among our employees.



We also prioritize the well-being of our female employees by offering exclusive benefits, such as workplace training and professional career image photography sessions. Additionally, to commemorate Women's Day each year, we organize celebrations to demonstrate our respect and care for our female employees, ensuring they receive the full support and recognition they deserve within the Company.

Case 1st Family Day

Uniview meticulously planned and hosted the first Family Day in August 2023 (domestic session). The event aimed to strengthen the bond between employees and their families, and allow employees' family members to personally experience the environment and atmosphere of employees' daily work. During the event, employees from the domestic marketing center, product center, and other departments and their families were invited, and 140 people from more than 50 families gathered together from all over the country. On the Family Day, Uniview not only showed the families the company's determination to move towards an Infinite New World but also expressed its heartfelt appreciation for the selfless support from the employees' families. Employees' family members experienced Uniview's intelligent achievements and innovations during tours in the showroom. This posed a positive impact especially on children by stimulating their interest in technology and their desire to explore.

The event not only deepened the families' understanding of Uniview's corporate culture but also allowed them to witness the employees' daily work and enhance their recognition with the company's development. For every participating family, it was undoubtedly an unforgettable experience, allowing the families to have a more comprehensive and in-depth understanding of the work of Uniview's employees.



Uniview's Family Day

04

Harmonious Ecosystem for Win-Win Partnerships

At China TransInfo, we actively engage with and contribute to the communities where we operate, leveraging our corporate strengths to make meaningful contributions to society. We firmly believe that both industry prosperity and community well-being are essential for sustainable development. Therefore, alongside our pursuit of business expansion, we are dedicated to supporting community and industry development, thereby instilling positive energy into society.

Contributing to the United Nations Sustainable Development Goals (SDGs)



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 **1.18** million

Total number of suppliers: **7,119**

Promoting Public Welfare That Engages Everyone

At China TransInfo, we stay committed to our original mission and actively contribute to society through scientific and technological innovations, thereby fostering social harmony. With a focus on key areas such as growth education, emergency response, and disaster relief, we dedicate ourselves to public welfare and charity endeavors. Additionally, we advocate for and encourage every employee to participate in volunteering activities. As of the end of 2023, our public welfare investment amounted to RMB 1.18 million.



We are actively involved in emergency relief and rescue. When a sudden earthquake hit Türkiye, our expatriate employees responded quickly and joined the volunteer team to participate in the rescue operations. At the same time, we donated much-needed emergency equipment, such as stoves, providing immediate assistance to local residents to help them get through the difficult times.



We host science popularization events in schools to broaden secondary school students' horizon in science. By hosting a science popularization event themed the movie *Wandering Earth 2*, Uniview called on students to love nature, protect the environment, and guard the earth together.



Uniview's *Wandering Earth 2* science popularization event in a secondary school

Case Uniview's science popularization in schools

As an ace player in Zhejiang's manufacturing industry, Uniview makes frequent appearances in the blockbuster *Wandering Earth 2*. In the movie, Uniview's products and technologies are deeply integrated into the plot, showing the close integration of science and technology with the theme of future disaster resistance. As the movie went viral, Uniview seized the opportunity to host science popularization lectures in many secondary schools in Hangzhou. These lectures aimed to deliver the core ideas of the movie, respecting nature and changing fate, and inspiring students to think about the harmony between science and technology and nature. In one of these lectures, Uniview not only shared the science fiction story in the movie but also guided students to understand the history of human's fight against natural disasters and the key role of science and technology through historical events. The lecture covered product development, animal observation, and environmental protection and emphasize the significance of unity, collaboration, and technological progress to the development of human society.

Practicing a Green and Low-Carbon Lifestyle

At China TransInfo, we actively respond to the state's pledges of "carbon peaking and carbon neutrality." Embracing a green development philosophy, we wholeheartedly promote green operations, establish eco-friendly offices, and advocate environmental protection principles and green lifestyles, thereby contributing to the development of an ecological civilization. We have obtained certifications for ISO 50001 Energy Management Systems and ISO 14001 Environmental Management Systems. Through measures such as energy conservation monitoring, energy audits, internal audits, and management reviews, we continually enhance our energy efficiency efforts. In 2023, we experienced no environmental accidents.

We are proactive in maintaining the greenery within our premises. We implement pest control measures in accordance with the Company's *Pesticide Safety Management System* and conduct regular watering and drainage to preserve the ecological balance of our surroundings. Furthermore, we have established waste disposal agreements with qualified third-party providers, ensuring the centralized treatment of domestic waste and adhering to statutory standards for the discharge of domestic sewage into urban drainage facilities. These practices help mitigate environmental pollution arising from solid waste and wastewater. Additionally, through the installation of activated carbon adsorption processors for waste gas purification and cafeteria fume purifiers, we effectively mitigate air pollution resulting from production and daily activities.

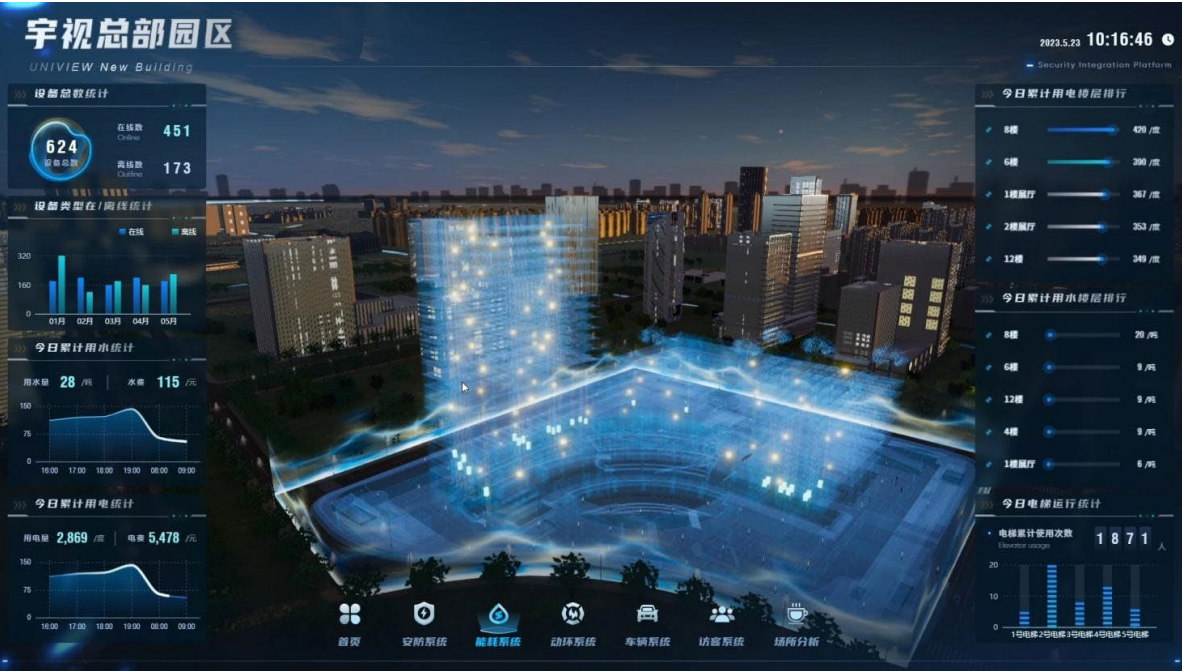
Green Offices

We promote a green and low-carbon culture, encouraging employees to adopt green commuting practices and eco-friendly office habits while promoting resource conservation and environmental protection. Uniview has built an office area that is green, energy-saving, and low-carbon in every aspect with a park system that "manages itself," a green park that "breaths," "paperless" conference devices, as well as energy conservation and cost reduction "wherever and whenever possible."



Park System That "Manages Itself"

We have built a digital twin platform for Uniview's smart park, enabling administrators to oversee electricity, water, and equipment usage through visualized 3D maps. This platform integrates with building automation and intelligent lighting systems, streamlining park management processes and reducing labor costs while enhancing overall efficiency and quality.



Digital twin platform for the office area

Green Park That “Breaths”

Our park’s curtain wall glass is coated with Low-E double-silver coating. This coating provides excellent shading, reducing sunlight heat radiation and effectively lowering the cooling load on air-conditioning systems. Additionally, we have implemented a rainwater recycling system with a capacity of 345 cubic meters, positioned under the park. This system collects and treats rainwater, diverting it into the irrigation system for efficient use, thereby conserving water resources and reducing energy consumption associated with rainwater treatment in the municipal pipeline network. In addition, the park incorporates water-cooled chiller units, an air-conditioning recycling system for hot and cold water, cooling towers for seasonal climate adjustments, and a fresh air heat recovery system. These initiatives are aimed at further enhancing energy efficiency and reducing overall energy consumption.

“Paperless” Conference Devices

We encourage employees to use email instead of paper printing, advocating for the integration of paperless office processes alongside the adoption of smart office hardware and software solutions. Through these efforts, we aim to advance towards low-carbon office environments. Leveraging Uniview’s self-developed smart office series products, we facilitate the seamless integration of online and offline conferencing, offering a smooth audio-visual and interactive conferencing experience. This approach motivates employees to engage in environmental protection practices facilitated by technology.

Energy Conservation and Cost Reduction “Wherever and Whenever Possible”

We continuously improve our energy conservation standards for office areas. To promote energy efficiency, we have installed prominent signage throughout various areas and locations, including office spaces and electrical switches. These signs serve as reminders for employees to power off electrical appliances when leaving work. Additionally, we implement a strategy involving background control of host equipment along with property inspections to ensure the effective implementation of energy conservation measures.

Indicator	2023	Unit
Total hazardous waste	10.86	tonne
Total non-hazardous waste	659.00	tonne
Kitchen waste	333.76	tonne
Sewage discharge	161,348	tonne
Waste fluorescent tube	0.32	tonne
Waste toner cartridge	0.16	tonne
Waste ink cartridge	0.07	tonne
Office paper consumption	6.53	tonne
Comprehensive energy consumption	3,371.20	tonne
Electricity consumption	23,624,847	kWh
Natural gas	351,458	m ³
Diesel	12	tonne
Gasoline	236.64	tonne
Total water consumption	198,790	tonne

Green Travel

We encourage our employees to adopt low-carbon and environmentally friendly means of transport. We have installed charging piles around workplaces to provide employees with convenient charging services. In Uniview’s technology park, for example, 10% of the park’s own parking spaces are equipped with Uniview charging piles, making it convenient for employees to commute by electric vehicle, which is more energy-efficient and environmentally friendly.

At the same time, we have developed the *Vehicle Management Measures* to regulate the Company’s vehicle management process. We also purchased unified fuel cards for limited oil products and plate numbers to limit the use of high-emitting vehicles and minimize the greenhouse gas (GHG) emissions caused by vehicles.



Charging piles in China TransInfo’s sci-tech park

Building a Sustainable Supply Chain

At China TransInfo, we adhere to the principles of fairness, impartiality, and transparency as well as continued improvements for our supplier management system. We implement the *Supplier Management Measures* and other internal policies and systems in place and maintain a stringent control mechanism for the whole process encompassing supplier screening, access, and evaluation to further standardize supplier management.

We have established a robust supplier access system that incorporates ESG factors into the supplier screening criteria. When selecting suppliers, we comprehensively examine suppliers in terms of their business scale, technical capabilities, quality management system, hazardous substance management system, and environmental management system. We also ensure that the suppliers’ capabilities are in line with our procurement requirements through on-site inspections, sample testing, and small batch testing. Priority will be given to suppliers that hold ISO management system certifications, possess new technologies, and produce energy-efficient and environmentally friendly products.

We regularly evaluate and assess our suppliers, continuously optimize our supplier performance evaluation process, and develop evaluation plans and standards. Our comprehensive evaluation of our production suppliers encompasses the dimensions of technology, quality (including hazardous substances), response, costs, delivery, environment, as well as occupational health and safety. This approach ensures an objective and truthful reflection of suppliers’ comprehensive performance and helps them make continuous improvements.

We join hands with our partners to build a clean industrial ecosystem. We require suppliers to sign the *Supplier Integrity Commitment Letter*, in which we expressly set out the procurement code of conduct and other standards to prevent and curb the violations of disciplines and the law at the source. We require specific suppliers to sign the *Construction Safety Commitment Letter* and the *Environment Protection Declaration* to strictly control the safety and environmental risks of suppliers.

We have strengthened interactions and communication with suppliers. We effectively convey the Company’s supplier management standards and requirements by organizing and convening supplier quality summary seminars and conducting special surveys. We also discuss the latest industry trends and policy developments with our suppliers. In 2023, the total number of China TransInfo’s suppliers was 7,119, of which 7,032 were from the Chinese mainland, 56 from Hong Kong, Macao, and Taiwan, and 31 from overseas.

05

Sustained Development Underpinned by Steady Operations

Contributing to the United Nations Sustainable Development Goals (SDGs)



Good corporate governance is the foundation for a company's steady operations and sustainable value creation. At China TransInfo, we are committed to improving our corporate governance system and enhancing our corporate governance performance. We strengthen risk management and control, persevere with sustainable development, abide by business ethics, pursue business integrity, and safeguard information and data security to ensure operational steadies and compliance.

Our Actions

- Corporate governance
- Business ethics
- Internal risk control
- Information security

Our Achievements

Directors receiving anti-corruption training: **9**

Employees receiving anti-corruption training: **655**

Corporate Governance

At China TransInfo, we strictly comply with the *Company Law of the People’s Republic of China*, the *Securities Law of the People’s Republic of China*, the *Rules for Governance of Listed Companies* of the China Securities Regulatory Commission, 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*, and other pertinent laws, regulations, and normative documents. We have developed a basic management system, established a sound corporate governance system, and improved our corporate governance capabilities.

As a result of our continuous efforts to improve our governance structure, we have built a corporate governance structure comprising the general meeting of shareholders, the Board of Directors, the Board of Supervisors, and the management, and established a governance mechanism with clear delineation of responsibilities and powers and an effective division of labor. The Board of Directors has four specialized committees: the Strategy Committee, the Nomination Committee, the Audit Committee, and the Remuneration and Appraisal Committee. They supervise, cooperate with, and constrain each other, and exercise effective control over the Company’s daily production and operations. In 2023, we convened two general meetings of shareholders, seven meetings of the Board of Directors, and seven meetings of the Board of Supervisors. In addition, we convened six meetings of the specialized committees under the Board of Directors, including three of the Nomination Committee, two of the Remuneration and Appraisal Committee, and one of the Strategy Committee.

We value the independence and diversity of the Board of Directors. We rationalize the membership of the specialized committees of the Board of Directors based on the directors’ background in performing their duties, thus continuously improving the Company’s decision-making capabilities. As of the end of December 2023, the Company’s Board of Directors consisted of nine directors, including three independent directors; and the Board of Supervisors consisted of three supervisors, including one female supervisor and one employee supervisor.

Internal Risk Control

At China TransInfo, we continuously strengthen our internal control management system and base our efforts on 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*, and other pertinent laws, regulations and normative documents. Accordingly, we have established a sound internal control system encompassing financial control, operational control, compliance control, and information disclosure, and have engaged a third-party independent agency to assure the internal control performance of the Company. We promote a comprehensive risk management system, continue to improve the risk prevention mechanism for prevention before incidents, control during incidents, and remediation after incidents, and conduct regular risk assessments.

We conduct self-evaluation for internal control and compliance audits for all aspects of our operations to ensure compliance in our business operations. To raise employees’ awareness of compliance, we compiled and distributed the *Compilation of the Management Systems of China TransInfo Technology Co., Ltd. (2022 Edition)*, and required employees to study and comply with it. In 2023, we organized six “Spirited Away” training seminars on legal practice, instructing on contract management, trademark and software copyright, private equity, and human resources.



Business Ethics

At China TransInfo, we abide by business ethics and strictly comply with the *Anti-Unfair Competition Law of the People’s Republic of China*, the *Interim Provisions on Banning Commercial Bribery*, and other pertinent laws and regulations. We have developed the *Anti-Corruption Business Code* and the *Management Measures for Anti-fraud Reporting* to ensure business ethics management in our business activities and processes.

We continue to improve our anti-corruption system. We have established a three-tier professional ethics management system comprising the Company’s management, affiliates, and the Internal Audit Department to monitor the Company’s ethical behavior in every aspect and ensure standardized operations of the Company. In our internal audits, we focus on whether we, our partners, and our suppliers act in accordance with the Company’s requirements on business ethics, anti-corruption, human rights, health and safety, the environment, and other social and environmental factors, so as to prevent the risk of corruption.

At China TransInfo, we uphold a “zero tolerance” policy against any bribery and corruption. We have set up public reporting channels such as email, telephone, and mailboxes, and encourage people with knowledge to report any misconduct in the Company. Upon receiving a report, we will immediately initiate a thorough probe into the violation and safeguard the information of the whistleblower to prevent any form of threat or retaliation. For whistleblowers who provide truthful information that is confirmed in the investigation, we will provide appropriate rewards based on the validity of the clues.

We strengthen our culture of integrity, reinforce regular education and training for our employees, and actively communicate our anti-corruption management system. New employees are required to sign an agreement on business ethics and anti-corruption provisions upon joining the Company. As of the end of 2023, China TransInfo had not been involved in corruption litigation cases.

Indicator	2023	Unit
Number of directors receiving anti-corruption training	9	person
Total hours of anti-corruption training for directors	25	hour
Number of employees receiving anti-corruption training	655	person
Total hours of anti-corruption training for employees	831	hour

Information Security

At China TransInfo, we strictly comply with laws and regulations governing privacy protection and data security, such as the *Cybersecurity Law of the People’s Republic of China* and the *Personal Information Protection Law*. We have established internal systems such as the *System Security Specifications of China TransInfo* and the *Information Security Policy of China TransInfo*. As cybersecurity and information security are among our priorities, we have established a sound information security management system and management structure and improved our security operation process management and technology application, strengthening the Company’s information security assurance capabilities.

At China TransInfo, we have built a sound information security management system and obtained ISO 27017 cloud security management system, ISO 27018 cloud privacy management system, and ISO 27701 privacy management system certifications to ensure standardized, regulated, and systematic information security management. To ensure the comprehensive protection of data and information in boundaries, endpoints, networks, and network access, we have developed 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. For centralized identity management and control, terminal security access, transparent encryption of documents, and boundary security isolation, we continue to improve our data leakage prevention framework. The security ecosystem is also a priority for us. To this end, we have developed a cloud network security system. It 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. It serves as an information security solution for our partners and industry peers.

Appendixes

Appendix 1 Key Performance Table

Environmental Performance >

Indicator		2023	Unit
Discharge	Total hazardous waste	10.86	tonne
	Hazardous waste per revenue	0.0014	tonne/RMB million
	Total non-hazardous waste	659	tonne
	Non-hazardous waste per revenue	0.085	tonne/RMB million
	Sewage discharge	161,348	tonne
	Kitchen waste	333.76	tonne
	Waste fluorescent tube	0.32	tonne
	Waste toner cartridge	0.16	tonne
	Waste ink cartridge	0.07	tonne
	Office paper consumption	6.53	tonne
GHG	GHG emissions	14,287.53	tCO ₂ e
	Direct (Scope 1) GHG emissions	814.28	tCO ₂ e
	Direct (Scope 1) GHG emissions per revenue	0.104	tCO ₂ e/RMB million
	Indirect (Scope 2) GHG emissions	13,473.25	tCO ₂ e
	Indirect (Scope 2) GHG emissions per revenue	1.729	tCO ₂ e/RMB million
Resource Consumption	Comprehensive energy consumption	3,371.20	TCE
	Comprehensive energy consumption per RMB million in output value	0.433	TCE/RMB million
	Water consumption	198,790	tonne
	Electricity consumption	23,624,847	kWh
	Gasoline consumption	236.64	L
	Diesel consumption	12	L
	Natural gas consumption	351,458	m ³
	Environmental accidents or administrative penalties related to the environment	0	case

Social Performance >

Indicator			2023	Unit
Employment	Total number of employees		6,633	person
	Employees divided by gender	Male	4,998	person
		Female	1,635	person
	Employees divided by employment type	Senior management	6	person
		Middle management	825	person
		Regular staff	5,802	person
	Employees divided by age	30 years old and below	3,129	person
		31-40 years old	2,654	person
		41-50 years old	723	person
		Above 50 years old	127	person
	Employees divided by employment category	Full-time employees	6,585	person
		Part-time employees	64	person
		Other	13	person
	Employees divided by region	Chinese mainland	6,550	person
		Overseas as well as Hong Kong, Macao, and Taiwan	83	person
	Total number of new hires		1,161	person
	Employee turnover		1,219	person
	Employee turnover rate		17.28	%
	Employee turnover by gender	Male	17.23	%
		Female	17.42	%
	Employee turnover by age	30 years old and below	21.73	%
		31-40 years old	13.31	%
		41-50 years old	12.81	%
		Above 50 years old	12.50	%
	Employee turnover by region	Chinese mainland	17.18	%
		Overseas as well as Hong Kong, Macao, and Taiwan	25.30	%
Health and Safety	Employee health examination rate		93.54	%
	Number of deaths due to work-related injuries		3,712	person
	Number of hours lost due to work-related injuries		0	hour

Indicator			2023	Unit
Development and Training	Total number of employees trained		4,599	trainee
	Average hours of training per employee		46.84	hour
	Trainees divided by gender	Male	4,158	person
		Female	441	person
	Trainees divided by employment type	Senior management	6	person
		Middle management	195	person
		Regular staff	5,240	person
	Average training hours per employee by gender	Male	46.29	hour
		Female	46.50	hour
	Average training hours per employee by employment type	Senior management	15.33	hour
Middle management		173.71	hour	
Regular staff		64.18	hour	
Product Responsibility	Total number of complaints about products and services received		96	case
	Number of intellectual properties		5,061	piece
	Total research and development investment		1.1	RMB billion
	Number of patents granted		2,836	piece
Supply Chain Management	Total number of suppliers		7,119	company
	Suppliers divided by region	Chinese mainland	7,032	company
		Hong Kong, Macao, and Taiwan	56	company
		Overseas	31	company
Anti-corruption	Number of corruption litigation cases concluded		0	case
	Number of directors receiving anti-corruption training		9	person
	Total hours of anti-corruption training for directors		25	hour
	Number of employees receiving anti-corruption training		655	person
	Total hours of anti-corruption training for employees		831	hour
Community Construction	Investment in public welfare		1.18	RMB million

Governance Performance >

Indicator	2023	Unit
Operating income	7.794	RMB billion
Total assets	19.711	RMB billion
General meeting of shareholders	2	meeting
Board of Directors	7	meeting
Board of Supervisors	7	meeting
Number of directors	9	person
Female directors	3	person

Appendix 2 GRI Content Index

Statement of use China TransInfo Technology Co., Ltd. has reported the information cited in this GRI content index for the period 2023.01.01-2023.12.31 with reference to the GRI Standards.

GRI 1 used GRI 1: Foundation 2021

Gri Standard	Disclosure	Location
GRI 2: General Disclosures 2021	2-1 Organizational details	5
	2-2 Entities included in the organization's sustainability reporting	1
	2-3 Reporting period, frequency and contact point	1
	2-6 Activities, value chain and other business relationships	5
	2-7 Employees	44
	2-8 Workers who are not employees	44
	2-9 Governance structure and composition	57
	2-11 Chair of the highest governance body	4
	2-12 Role of the highest governance body in overseeing the management of impacts	57
	2-13 Delegation of responsibility for managing impacts	57
	2-14 Role of the highest governance body in sustainability reporting	12
	2-16 Communication of critical concerns	13
	2-17 Collective knowledge of the highest governance body	13
	2-19 Remuneration policies	45
	2-23 Policy commitments	58
	2-24 Embedding policy commitments	58
	2-27 Compliance with laws and regulations	58
	2-28 Membership associations	39
GRI 3: Material Topics 2021	2-29 Approach to stakeholder engagement	13
	3-1 Process to determine material topics	14
	3-2 List of material topics	14
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	5

Gri Standard	Disclosure	Location
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	58
	205-2 Communication and training about anti-corruption policies and procedures	58
	205-3 Confirmed incidents of corruption and actions taken	58
GRI 302: Energy 2016	302-1 Energy consumption within the organization	53
	302-2 Energy consumption outside of the organization	53
	302-3 Energy intensity	59
	302-4 Reduction of energy consumption	53
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	52
	303-2 Management of water discharge-related impacts	52
	303-3 Water withdrawal	53
	303-4 Water discharge	53
GRI 304: Biodiversity 2016	304-2 Significant impacts of activities, products and services on biodiversity	28
	304-3 Habitats protected or restored	28
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	59
	305-2 Energy indirect (Scope 2) GHG emissions	59
	305-4 GHG emissions intensity	59
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	53
	306-2 Management of significant waste-related impacts	52
	306-3 Waste generated	53
	306-5 Waste directed to disposal	53
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	54
	308-2 Negative environmental impacts in the supply chain and actions taken	54
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	43, 46
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	45

Gri Standard	Disclosure	Location
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	47
	403-2 Hazard identification, risk assessment, and incident investigation	47
	403-3 Occupational health services	47
	403-5 Worker training on occupational health and safety	47
	403-6 Promotion of worker health	47
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	47
	403-8 Workers covered by an occupational health and safety management system	47
	403-9 Work-related injuries	60
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	46
	404-2 Programs for upgrading employee skills and transition assistance programs	45
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	43, 57
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	43
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	43
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	43
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	54
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	58

Appendix 3 Reader's Comment

Dear reader,

Thank you for spending time in reading the *China TransInfo Technology Co., Ltd. ESG Report 2023*. 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 _____

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

- ☐ Yes ☐ Some ☐ No

3. In your point of view, how well does China TransInfo perform in the following aspects?

- | | | | | | |
|---------------------------|------------------------------------|-------------------------------|----------------------------------|-------------------------------|------------------------------------|
| Corporate governance: | ☐ Very good | ☐ Good | ☐ Average | ☐ Poor | ☐ Very poor |
| Environmental management: | ☐ Very good | ☐ Good | ☐ Average | ☐ Poor | ☐ Very poor |
| Social responsibility: | ☐ Very good | ☐ Good | ☐ Average | ☐ Poor | ☐ Very poor |
| ESG management: | ☐ Very good | ☐ Good | ☐ Average | ☐ Poor | ☐ Very poor |

4. How do you rate the report in disclosure information content, accuracy, completeness, readability, and layout design?

- | | | | | | |
|---------------------------------|--|-------------------------------------|----------------------------------|-------------------------------|------------------------------------|
| Disclosure information content: | ☐ Very high | ☐ High | ☐ Average | ☐ Low | ☐ Very low |
| Accuracy: | ☐ Very high | ☐ High | ☐ Average | ☐ Low | ☐ Very low |
| Completeness: | ☐ Very high | ☐ High | ☐ Average | ☐ Low | ☐ Very low |
| Readability: | ☐ Very good | ☐ Good | ☐ Average | ☐ Poor | ☐ Very poor |
| layout design: | ☐ Very reasonable | ☐ Reasonable | ☐ Average | ☐ Poor | ☐ Very poor |

5. What are your comments and suggestions on China TransInfo's ESG efforts?

6. What are your comments and suggestions on the preparation of China TransInfo's ESG report?
