BUSINESS OVERVIEW

The Group is a leading service provider in the informatization sector in the PRC. Adhering to the position as a "New Generation Integrated Smart Service Provider" and leveraging the roles as "Builder of Digital Infrastructure", "Provider of Smart Products and Platforms", "Service Provider of Data Production" and "Guard of Smart Operation" ("1 Positioning, 4 Roles"), the Group commits to "Building Smart Society, Boosting Digital Economy, Serving a Good Life" and provides integrated comprehensive smart solutions for the informatization and digitalization sectors. The Group provides integrated smart solutions including telecommunications infrastructure services, business process outsourcing services, as well as applications, content and other services for its customers including telecommunications operators, governments, industrial customers and SMEs.

The Group's business spans across China and dozens of countries and regions globally, with overseas customers mainly located in key regions such as Southeast Asia, the Middle East and Africa.

WE PROVIDE INTEGRATED COMPREHENSIVE SMART SOLUTIONS FOR THE INFORMATIZATION AND DIGITALIZATION SECTORS

Telecommunications Infrastructure Services	Business Process Outsourcing Services	Applications, Content and Other Services

Our Services

Design	Network Maintenance	System Integration
Construction	Property Management	Software Development and System Support
Supervision	Supply Chain	Value-added Service
	Products Distribution	Others

| (In RMB million, except percentages)	Revenue in 2021	Revenue in 2020	Change
Domestic non-telecom operator customers ("Domestic non-operator customers")	57,446	49,578	15.9%
Domestic telecommunications operator customers	73,803	69,976	5.5%
Of which: China Telecom	46,047	41,777	10.2%
China Mobile, China Unicom, China Tower	27,756	28,199	-1.6%
Overseas customers	2,742	3,095	-11.4%
Total	133,991	122,649	9.2%

MARKET EXPANSION

In 2021, in the face of the complicated domestic and international environments, the Group continued to adhere to the overall roadmap of "value-driven, seeking steady yet progressive growth and high-quality development", actively engaged in the trend of building "Digital China", comprehensively participated in "digital infrastructure" and "digital transformation". Along the path of high-quality development, the Group further enhanced market development, seized new opportunities from digital economy, and shifted growth momentums, thereby optimizing its business structure and improving development quality. Total revenues amounted to RMB133,991 million during the year, representing a year-on-year growth of 9.2%.

In 2021, as the Group seized opportunities from digital upgrade in areas such as society, industries and governance, and focused on key industries and sectors, the revenue from the domestic non-operator market for the year amounted to RMB57,446 million, representing a year-on-year increase of 15.9%. As the Group further integrated into the ecosystem of domestic telecommunications operators, seized the opportunities of 5G and data center construction, further developed the traditional businesses of domestic telecommunications operators while vigorously expanding into the transformation business of domestic telecommunications operators such as cloud-network integration, the revenue from domestic telecommunications operator market for the year amounted to RMB73,803 million, representing a year-on-year increase of 5.5%. In overseas market, the Group focused on key countries and key projects and seized new opportunities from normalization of pandemic situation. However, businesses in overseas market were affected by the pandemic, and the revenue from overseas customers amounted to RMB2,742 million, representing a year-on-year decrease of 11.4%.

The following charts show the revenue contribution from each customer group:

China Telecom ■ China Mobile, China Unicom, China Tower ■ Domestic non-operator customers ■ Overseas customers
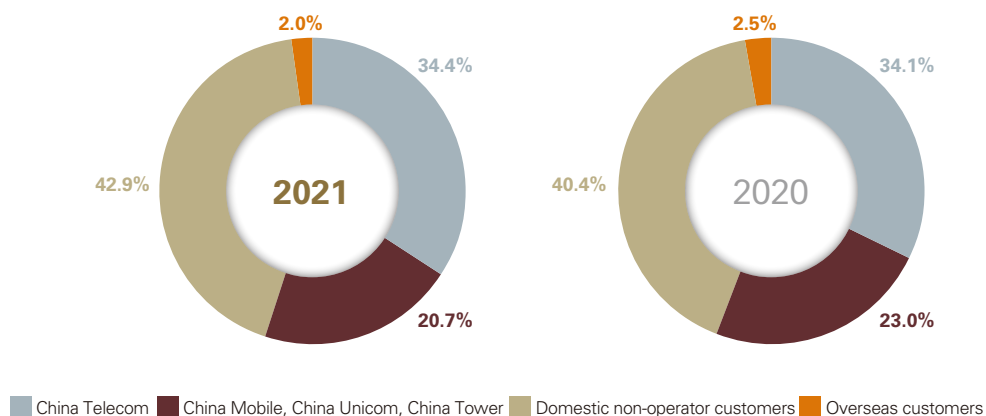
Domestic Non-Operator Market

In recent years, the Group has kept abreast of the development trend of digital economy and industrial digitalization, and attained rapid business growth and continuous optimization of revenue structure in the domestic non-operator market through innovation and transformation. In 2021, with focus on the development opportunities arising from New Infrastructure, smart society, cybersecurity, emergency management, new energy and Dual Carbon Goals, the Group continuously forged the core capabilities and platforms, strengthened the collaboration among internal and external products and services and leveraged its comprehensive strengths, thus achieving positive and interactive development between the emerging businesses and traditional businesses. Revenue from the domestic non-operator market amounted to RMB57,446 million, representing a year-on-year increase of 15.9%.

In 2021, the Group advanced on research and development under the leadership of China Comservice General Research Institute, forged strategic core platforms, elevated the software service capability and developed smart products. As of now, more than 30 products for industrial application have been developed, covering different industries and sectors including smart city, digital government, smart emergency management, smart game and smart transportation. The Group also possesses self-developed core platforms such as open IoT platform, cybersecurity platform, emergency management middle platform, maintenance digitalization platform, blockchain platform and innovation middle platform. The Group could quickly respond to customer needs and provide the comprehensive smart product portfolio that could be disassembled or combined, as well as full-process service capabilities from top-level design to product R&D and operation. For data center business, in particular, the Group leveraged high-end consulting and design capabilities, applied BIM digitalization technology and the profound accumulation on energy conservation and emission reduction technologies to build the brand image of EPC general contractor of data center infrastructure construction. The Group also made achievements in the expansion of key projects. In the field of New Infrastructure, the Group undertook EPC general contracting projects including Xiong'an City Supercomputing Cloud Center Project Phase 1 General Contracting Project for Server Rooms Installation, Xiangyang Internet + Innovation and Entrepreneurship Industrial Park and Guangdong Shanwei Topway Data Center; in the field of smart society, benchmark projects undertaken included Beijing Normal University Hanzhong School Smart System Construction Project in Xinghan New Area, Hanzhong, Shaanxi, Shanghai Pudong South Yanggao Road Reconstruction Project, Information Infrastructure and Smart Management and Control Platform Construction Project of the First Affiliated Hospital, Sun Yat-sen University (Nansha) in Guangzhou, Guangdong Province.

▶ ▶ ▶ **The Group undertook the construction of key data center projects**
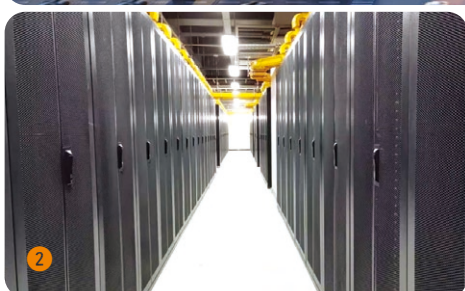
1. Xiong'an City Supercomputing Cloud Center Project Phase 1 General Contracting Project for Server Rooms Installation
2. Yangtze River Upstream Data Center Project
3. Western Sichuan Industry Park Electromechanical General Contracting Project
4. Xiangyang Internet + Innovation and Entrepreneurship Industrial Park EPC Project

The Group established a sound and localized marketing mechanism across the country with over 14,000 sales personnel deployed in the key industries while constantly enhancing its efforts in collaborated marketing of the group-level products, thus securing over 1,200 new projects with contract amount exceeding RMB10 million each during the year. The Group also accelerated the formation of a technical expert team for its core products, which has gathered over 10,000 consulting experts and relevant software talents. The Group also enhanced capabilities accumulation and enabling by consistent training and informatization means such as the Smart Comservice APP, which continuously fostered critical professional talents and teams for the enterprise. Currently, the annual contract scale secured by the Group from more than 10 industries, including government, construction and real estate, Internet and IT, transportation, electricity, finance, radio and television, water conservancy, education, medical care and SMEs, has exceeded RMB1 billion in each sector.

▶ ▶ ▶ **The Group has achieved success in expanding in key industry sectors**

1. Yibin Port 5G Smart Port Project
2. Changsha 5G+ Medical Health Application Pilot Project
3. Yancheng Railway Integrated Passenger Terminal (West Square) Informatization Project

Domestic Telecommunications Operator Market

In 2021, the Group further integrated into the ecosystem of operators in the domestic telecommunications operator market, seized opportunities from traditional businesses and transformation. The Group persisted in the "CAPEX + OPEX + Smart Applications" strategy, seized new opportunities from industrial digitalization, 5G and data center construction, further developed the traditional businesses, explored the market potential of Network Maintenance, Property Management and supply chain businesses, and strived to increase the OPEX market share. The Group comprehensively supported operators' demand for informatization services in the course of transformation by proactively engaging in and expanding the markets including 5G industrial applications, business derived from government and enterprise customers of operators and network information security, which ultimately stabilized the operation fundamentals of domestic telecommunications operators. The revenue from such market amounted to RMB73,803 million, representing a year-on-year increase of 5.5%, of which the revenue from China Telecom amounted to RMB46,047 million, representing a year-on-year increase of 10.2%.

▶ ▶ ▶ **The Group proactively participated in the network construction and maintenance for domestic telecommunications operators**

Overseas Market

In 2021, the Group proactively adapted to the new development paradigm of "dual-circulation with domestic and international development" by following the principles of safety, compliance and efficiency, with a focus on key countries and regions such as Saudi Arabia, Hong Kong, Macau and the Philippines. The Group reinforced the internal and external collaboration, with production bases established in the overseas market to promote the capability enabling of smart products overseas, thus propelling the innovation and transformation of overseas businesses and enhancing the quality of development. The COVID-19 pandemic continued to rage overseas, which had a relatively large impact on the Group's overseas business; the revenue from overseas customers amounted to RMB2,742 million, representing a year-on-year decrease of 11.4%. During the year, the Group further enhanced general contracting capability, continued to focus on key regions, key customers and key projects, enhanced the overseas cooperation with leading Chinese enterprises, and fully utilized the resources of domestic financial institutions. New contracts in the overseas market witnessed continuous improvement in terms of quantity and quality, and the number of smart transformation projects such as power, smart hospital increased continually.

▶ ▶ ▶ **The Group proactively expanded overseas projects**

BUSINESS EXPANSION

As a leading service provider in the informatization sector in the PRC that provides integrated comprehensive smart solutions in the informatization and digitalization sectors, we offer telecommunications infrastructure services, including design, construction and supervision; business process outsourcing services, including management of infrastructure for information technology (Network Maintenance), general facilities management (Property Management), supply chain and products distribution; and applications, content and other services, including system integration, software development and system support as well as value-added services, etc.

Telecommunications Infrastructure Services

As the largest telecommunications infrastructure service provider in China, the Group possesses all the highest-grade qualifications in the communications construction industry in China. In 2021, revenue from telecommunications infrastructure services amounted to RMB71,889 million, representing a year-on-year growth of 7.0%.

The Group has the capabilities to provide worldwide telecommunications operators with comprehensive telecommunications infrastructure services including planning, design, construction and project supervision for fixed-line, mobile, broadband networks, data centers and supporting systems. In 2021, the Group endeavoured to address the business needs of the domestic telecommunications operator customers as well as supporting the domestic 5G network construction and maintained a solid market leading position. The Group's revenue of telecommunications infrastructure services from domestic telecommunications operators amounted to RMB39,454 million, representing a year-on-year growth of 1.5%.

The Group also provides various services, including construction services of ancillary communications networks, integrated solutions for informatization and intelligentization solutions of industries, to domestic non-operator customers such as government, finance, construction, transportation, emergency management, electricity, and medical care as well as overseas customers. During the year, the Group made constant new breakthroughs in the fields of data centers, building intelligentization, smart campus and electricity engineering. In 2021, the Group's revenue of telecommunications infrastructure services from domestic non-operator customers amounted to RMB30,258 million, representing a year-on-year growth of 17.5%, maintaining a strong development momentum.

▶ ▶ ▶ **The Group supported the construction of domestic 5G base stations**

As domestic telecommunications operators continue to increase their investment in New Infrastructure such as 5G and data centers with a view to accelerating the transformation of cloud-network integration, the Group will further integrate into the ecosystem of operators and enhance product and service capabilities, so as to cater for the demand of domestic telecommunications operators for integrated network construction services and maintain the stable development of domestic telecommunications operator business. Meanwhile, with the in-depth implementation of the strategy of Digital China, the construction of new infrastructure facilities will accelerate while industrial digitalization will thrive and the global informatization demands under the normalization of pandemic situation will boom. All of the above will bring potential for market development and the Group will embrace new growth opportunities in both domestic non-operator market and overseas market.

Business Process Outsourcing Services

The Group is the largest integrated provider of business process outsourcing services in the communications industry in China. We keep extending our business scope from core networks to access networks along the communications business value chain, and provide services including management of infrastructure for information technology (Network Maintenance), general facilities management (Property Management), supply chain and products distribution. The target customers of our services include domestic and overseas telecommunications operator customers, government agencies and enterprises customers. The revenue from the business process outsourcing services amounted to RMB40,624 million, representing a year-on-year increase of 9.0%.

▶ ▶ ▶ **The Group provided operation and maintenance services**

The Group provides Network Maintenance and network optimization services for telecommunications operators covering fiber optic cables, electric cables, mobile base stations, network equipment and terminals. In 2021, on the basis of stabilizing the Network Maintenance business for domestic telecommunications operators, the Group actively expanded the business of domestic non-operator customers, leading to a largely stable Network Maintenance business with a revenue of RMB16,678 million, representing a year-on-year increase of 5.6%.

The Group provides Property Management services to domestic and overseas customers for their data centers, cloud computing bases, commercial buildings, high-end residential buildings, high-speed railway stations and airports, etc. During the year, the Group continued to advance on the building of brand, IT platforms and talent teams and leveraged the synergistic operational capabilities to reinforce market development. In 2021, the Group achieved RMB7,127 million of revenue from Property Management services, representing a year-on-year growth of 12.1%.

▶ ▶ ▶ The Group provided smart property management solutions to customers

During the year, the Group penetrated operators' supply chain business and further expanded and developed customers from other sectors. In 2021, the Group's revenue from supply chain services amounted to RMB11,964 million, representing a year-on-year growth of 10.1%. It focused on the upstream and downstream customers, continuously leveraged its advantage in full-process and network-wide synergistic operation in supply chain to provide value-added, integrated and full life cycle supply chain services including logistics and transportation, warehousing and distribution, inspection service and tender agent, digital procurement, repair and disposition to domestic telecommunications operators, government and enterprises customers. During the year, China Comservice Supply Chain Management Company Ltd. introduced strategic investors and completed the capital injection, which is beneficial to the strengthening of the Group's capabilities for professional operations and competitiveness in the supply chain business and fostering the Group's capabilities in general contracting for digital infrastructure and seize the development opportunities of modern supply chain and digital economy.

▶ ▶ ▶ **The Group continuously leveraged its advantage in full-process and network-wide synergistic operation in supply chain to provide value-added, integrated and full life cycle supply chain services**

Products distribution business mainly refers to the distribution of communications products. The Group provides terminals sales and device distribution services to domestic telecommunications operator customers and provides distribution and procurement services of IT devices, auxiliary machinery and equipment to domestic non-operator customers. In 2021, the products distribution business of the Group achieved a revenue of RMB4,855 million, representing a year-on-year growth of 14.1%.

As the scale of 5G network gradually expands, the Group believes that the OPEX market of domestic telecommunications operators has a favourable room of development, and the domestic non-operator market also sees growing demands for business process outsourcing services. The business process outsourcing services have the features of high customer loyalty, low accounts receivable turnover days and good cash flow. The Group will further consolidate resources to carry out professional operation to pursue a more efficient and larger scale development in such market.

Applications, Content and Other Services

The Group provides system integration, software development and system support as well as value-added services to customers including domestic and overseas telecommunications operators, government agencies and enterprises customers. In 2021, the relevant revenue amounted to RMB21,478 million, representing a year-on-year increase of 18.0%.

▶ ▶ ▶ **The Group provided smart solutions for customers**

In 2021, the Group leveraged the strength of its integrated service and capabilities on system integration and software development to keep expanding the ecological cooperation scale, seized the opportunities such as New Infrastructure and digital transformation in China, and vigorously expanded the markets including 5G, data centers, smart city, transportation, electricity, security and emergency management by leveraging the self-developed core platforms and a range of leading "smart series" products, which effectively satisfied the digital transformation demand of government and enterprise customers. Meanwhile, the Group further increased research and development investment, optimized "Synergistic + Dispersed" research and development mechanism, accelerated iteration and development of smart products and solutions, established smart society product portfolio and strengthened synergistic delivery of smart products. With all these measures, the Group satisfied the social and industrial digitalization demand, thus supporting the Group's digital transformation. The Group gained increasing industry recognition and brand influence, as it ranked the 4th in "100 Most Competitive Software & IT Service Enterprises 2021" and has been shortlisted in the "Top 100 Cybersecurity Enterprises in China" Industry Report by "AQNIU" for three consecutive years.

▶ ▶ ▶ **The Group gained increasing industry recognition and brand influence**

The Group will seize the opportunities arising from the rapid development of digital economy, keep upgrading its key products, accelerate the construction of strategic core platforms and businesses, improve the software service capabilities and develop smart products, so as to meet the informatization construction demands from customers.

▶ ▶ ▶ **The Group actively participated in various exhibitions to display China Comservice's smart industry application capabilities**

CONTENTS OF CERTAIN GROUP-LEVEL PRODUCTS OF THE GROUP

1	**CCS Innovation Middle Platform**	CCS Innovation Middle Platform builds a middle platform for technological innovation with our own characteristics, its core functions include the R&D management module for the Company and the cloud native R&D collaboration and efficiency development workbench for developers in a closed loop. The platform is committed to enhancing the Company's production digitalization and the R&D management and technological innovation capability. The R&D management module provides R&D management personnel of the Company with whole process management in respect of organization, personnel, R&D project, knowledge database with experience accumulation and other functions. The development workbench offers the one-stop DevOps tools to the R&D personnel and incorporates production commercialization guidelines in the R&D process. The platform aims to support the Company's business innovation and digital transformation.
2	**CCS IoT Product Portfolio**	CCS IoT positions itself as a new generation digital infrastructure service provider and builds a one-stop full-stack IoT professional service platform, its core functions focus on the challenges customer faced in the course of digital transformation and include full life cycle services for IoT projects and professional support tools in a closed loop. The open IoT platform provides design, R&D and construction personnel with functions including IoT scenario design, equipment connection, agile application development and equipment operation, maintenance and monitoring, to promote the quick implementation of IoT projects and the efficient realization of digital transformation applications. The maintenance cloud product portfolio provides maintenance personnel with functions including cloud migration of resources, matching in the supply and demand and full life cycle business process management, to achieve digitalization of maintenance capability, promote business expansion and accelerate the translation, replication and re-creation of maintenance capability. Combining with the CCS digital service support network, the platform provides enterprises with full-stack, online-offline integrated IoT digital transformation services to help enterprises boost the digital transformation.
3	**CCS Cyber Security Product Portfolio**	With the idea of "technological innovation, independence and controllability", CCS Cyber Security develops a series of cybersecurity products and services with our own characteristics and advantages. It covers multiple areas including security intelligence, safe operation, data security, password security, professional cybersecurity services and cybersecurity engineering services. It gathers high-quality partners in the industry, focuses on providing comprehensive security solutions and integrated services to the government and relevant departments, providing one-stop security protection to the construction and safeguard of key information infrastructure, as well as comprehensive security support to the country's cybersecurity standards, major projects and essential security activities.

4	CCS Emergency Management Product Portfolio	CCS Emergency Management builds a core product system focusing on "risk monitoring and early alert, emergency rescue and command, comprehensive park surveillance and enterprise security services", with completely self-owned intellectual property rights. It is designed for providing efficient, professional, practical, reliable, comprehensive solutions and integrated services covering the full life cycle to safety supervision and emergency management departments at various levels across the country, industrial parks and enterprises engaging in high-risk industries, to support the implementation of safety supervision, emergency management, risk management and control and emergency rescue. It aims to promote the rapid development of domestic informatization of emergency management and make cities and industries much safer and more intelligent.
5	Industrial Internet	Leveraging the Group's unique capabilities matrix, including 4T (i.e., CT (Communications Technology, with over 60 years' experience in network design, construction and maintenance), IT (Information Technology, including Cloud Construction, Cloud Management, Cloud Migration and innovative development), DT (Data Technology, with experience in massive data management and mining), and OT (Operational Technology, with nationwide entities at provincial, city and county levels)), 4P (CCS IoT Platform, CCS Innovation Middle Platform, data middle platform and network information security platform) and 4S (design and consultation, software development, project implementation and project supervision), the Industrial Internet provides integrated Industrial Internet service system to customers from government and industrial enterprises to address the four difficulties, namely the "connection, platform, data and security".
6	Blockchain	Under the development principles of independence and controllability, the Group builds a new blockchain platform "CCS Chain" with its own characteristics and industry-leading performance and expandability, commits to providing users with a safe, efficient, sound and reliable blockchain technology base. Recognized as "Trusted Blockchain" by China Academy of Information and Communications Technology, the platform leverages cloud-chain integrated service model to provide blockchain underlying service middle platform and scenario applications such as supply chain finance, carbon trading and trusted storage to users. It can help enterprises to exploit the value of blockchain empowering on the basis of their actual demands, and facilitate enterprises' digital transformation and high-quality business development with the positioning of new generation digital service forerunner.

7	Smart Sport	Smart Sport is designed to build the sophisticated capability enabling middle platform for smart sport technological innovation in China, with its core functions covering smart sports events, namely comprehensive sports events and individual sports events, and core digital sport products tailored for provincial and municipal governments and enterprises of the sports industry, aiming to enhance the digitalization of sports industry and promote the technology-driven innovation development of sports industry. Smart Game provides game organizing committees with informatization platform for functions of game results, game management, game command and stadium operation, as well as whole process consulting services and integrated comprehensive operation services, which ultimately supports informatization and intelligentization of whole process management from preparation, construction to operation. Digital Sport provides provincial and municipal governments with application platform functions for sports affairs, mass sports, competitive sports, sports industry and sports big data, to promote the data integration, technology integration and business integration of the sports industry and to build sound sports management and public service systems.
8	Smart City	Smart City is dedicated to integrating innovation and "One City, One Policy" customized services, provides comprehensive smart city solutions through top-level design by utilizing emerging technologies including 5G, artificial intelligence, IoT and cloud computing, so as to develop three major applications scenarios namely digital government, digital economy and one network unified management. Such solutions include "Digital China" consulting services, smart city digital governance platform, city operation management platform, smart city showcase, steering control cabin and specific smart applications that allow for disassembly and combination. The enhancement of effective consolidation, collaboration and sharing of city data resources and smart applications could bolster precise city management and urban services, as well as modernization of urban governance. It can comprehensively elevate the overall competitiveness of local economy, nurture the industry ecosystem and boost the government's transformation and upgrade to digital governance.
9	Digital Government	Incorporating applications of new technologies including cloud computing, big data, artificial intelligence and blockchain, the Group promotes the construction of and reform of Digital Government to achieve "one network unified service" for government services, "one network unified management" for social governance and "one network unified cooperation" for government operation, which enhance government services and social governance. With extensive experience in the information and telecommunications industry and the accumulation in technologies of big data, cloud computing, artificial intelligence and blockchain, Digital Government provides informatization core platforms and solutions for the government's digital transformation, including the integrated government service platform, the unified management platform in one network and the smart government service hall. The integrated government service platform promotes the in-depth integration of decentralized online and offline service channels, service capabilities and service resources; the unified management platform in one network supports governments at all levels to transform decision-making from experience-and-digital-based to intelligence-driven; the smart government service hall provides the government with "convenient service window, smart think tank for government policies, innovation square for business synergy, name card for city image promotion", which becomes the important medium for the government to serve the people and strengthen the close ties between the government and the people.

10	Smart Town	Leveraging IoT, big data, Digital Twin and other technologies, Smart Town builds the integrated digital town management and control platform, achieves comprehensive management of the town's digital infrastructure and collection of various kinds of data, and supports the industry development with nine major digital applications, so as to promote governance and improve people's well-being. By the combination of 1 Platform + 1 Database + 1 Terminal + N Applications + Services, Smart Town provides integrated smart town solutions to support the rural revitalization.
11	Smart Park	With the digital operation platform for industry-city space, Smart Park provides smart park solutions for grand events, entertainment and tourism, happy home, beautiful countryside, health and wellness, worry-free factory, bustling business district, multi-dimensional school town and rural revitalization, renders four comprehensive applications of marketing, management, service and experience, and offers integrated general contracting services and full life cycle management that covers consulting, planning, construction, operation and maintenance.
12	Intelligent Building	Leveraging the Intelligent Building Management System (CCS-iBMS) as the core, the Group realizes integration and interconnection among self-control system of building equipment, and also automation systems of office, security, fire protection and communications etc, so as to provide visualized management, operation and service.
13	Smart Highway	By integrating frontier technologies, the Group develops the new generation Smart Highway operation and management platform which possesses full capabilities in three major highway informatization areas – surveillance, toll, as well as maintenance and operation. Meanwhile, through massive real-time data collection and intelligent analysis, the Group assists the highway operators to enhance the capabilities of emergency command and dispatch, operation surveillance management and public travel services.
14	Smart Airport	As the cloud-network integration consolidates the foundation, and 5G empowers the improvement of quality and efficiency, the Group establishes an integrated Smart Airport service system, providing Smart Airport informatization consulting, integrated business solutions and integrated implementation services, and establishes a base for Smart Airport capabilities platform, integrating various Smart Airport applications. The Group assists airport groups in the civil aviation industry of China to establish a "safe, green, smart and humanistic" airport and to realize the goal to be a world-class airport with "high technologies, high standards and high quality".
15	Cloud Computing Engineering	Cloud Computing Engineering provides full life cycle and professional cloud infrastructure (data centers) EPC project general contracting services, possesses 30 major specialties necessary for data center construction, and applies advanced concepts such as energy saving, BIM and modularization to the construction process which provides standardized, modularized and customized services according to customers' needs.