Annual Report 2020

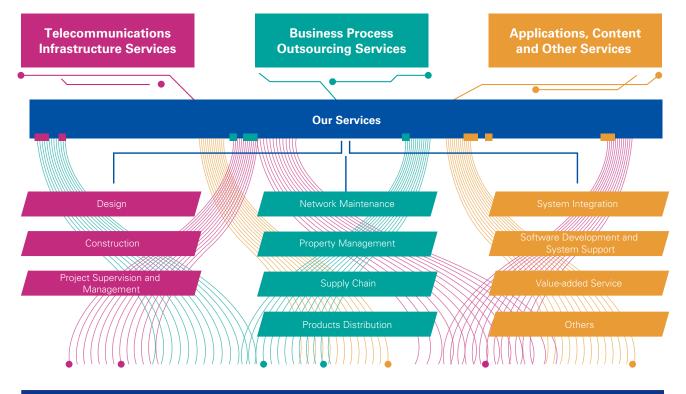
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BUSINESS OVERVIEW

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 playing the part in "4 Roles"¹, 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



(In RMB million, except percentages)	Revenue in 2020	Revenue in 2019	Change
Domestic telecommunications operator customers	69,976	72,420	-3.4%
Of which: China Telecom	41,777	40,633	2.8%
China Mobile, China Unicom, China Tower	28,199	31,787	-11.3%
Domestic non-telecom operator customers ("Domestic non- operator customers")	49,578	41,727	18.8%
Overseas customers	3,095	3,266	-5.2%
Total	122,649	117,413	4.5%

"4 Roles": "Builder of Digital Infrastructure", "Provider of Smart Products and Platforms", "Service Provider of Data Production" and "Guard of Smart Operation".



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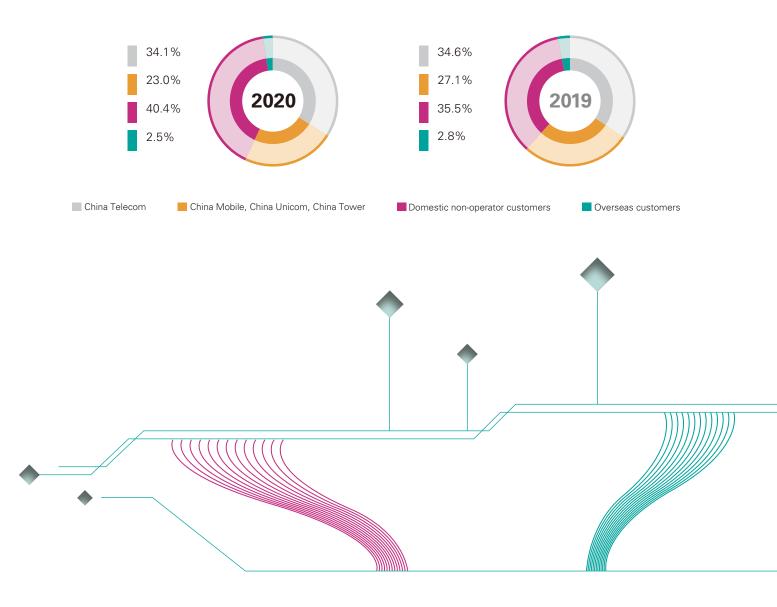
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MARKET EXPANSION

In 2020, in face of the complicated situations including the severe impact by the novel coronavirus (the "COVID-19") pandemic, the Group adhered to the overall roadmap of "value-driven, seeking steady yet progressive growth and high-quality development" while accelerating the resumption of work and production as well as reform and innovation in an orderly manner. On the basis of building the baseline for pandemic prevention, the Group focused on key areas and markets and achieved a rapid growth in domestic non-operator market. By seizing the opportunities arising from New Infrastructure such as the 5G and data centers, penetrating into the traditional businesses of the domestic telecommunications operators, and proactively expanding into the transformation business of domestic telecommunications operators such as cloud-network integration, the Group succeeded in stabilizing its business fundamentals. By focusing on the key overseas projects, the impact of the pandemic on the overseas market was alleviated. In 2020, the total revenues of the Group increased 4.5% year-on-year to RMB122,649 million for the year.

In 2020, revenue from the domestic non-operator market amounted to RMB49,578 million, representing a year-onyear increase of 18.8%; revenue from domestic telecommunications operator market amounted to RMB69,976 million, representing a year-on-year decrease of 3.4%; and revenue from overseas customers amounted to RMB3,095 million, representing a year-on-year decrease of 5.2%.

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



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DOMESTIC NON-OPERATOR MARKET

In recent years, the Group has kept abreast of the development trend of digital economy and industrial digitalization, and attained a rapid business growth in the domestic non-operator market through innovation and transformation, and thus achieved continuous optimization of overall revenue structure. In 2020, the Group focused on the development opportunities arising from New Infrastructure, smart society, network security and emergency management, continuously forged the core capabilities and platforms, strengthened the research and development of products and the internal and external collaboration. Leveraging the comprehensive strengths, positive and interactive development between the emerging businesses and traditional businesses was achieved. Revenue from the domestic non-operator market amounted to RMB49,578 million, representing a year-on-year increase of 18.8%.



The Group proactively promoted digital transformation projects

In 2020, the Group set up the China Comservice General Research Institute to coordinate the research and development efforts and has developed strategic core platforms in the fields of Cloud, Internet of Things ("IoT"), and network security while continuing to iterate and upgrade group-level products such as Smart City, Smart Park, Smart Highway, Smart Emergency Management, Cloud Computing services, and electronic authentication services, and forge more than 30 different smart product solutions. 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. During the year, the Group's expansion on key projects also met with success, e.g. in the field of New Infrastructure, EPC general contracting projects such as the Yangtze River Upstream Big Data Center and Yibin City Big Data Industrial Park, Western Sichuan Industry Park, and in the field of Smart Society, key projects such as Digital Guangzhou, Guangdong Smart Emergency Management Integrated Application Platform, Hefei Central (Luogang) Smart Ecopark, World University Games (Chengdu) Smart Game and the Changsha Smart Huanghua International Airport.

The Group gradually established and optimized the 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 1,000 new projects with contract amount over 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 for the enterprise. Currently, the annual contract scale secured by the Group from industrial customers, including government, construction and real estate, SMEs, Internet and IT, transportation, electricity, parks, and water conservancy, has exceeded RMB1 billion in each sector.



The Group proactively undertook the construction of data center projects



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The Group provided smart solutions to industrial customers

DOMESTIC TELECOMMUNICATIONS OPERATOR MARKET

In 2020, the Group adhered to the "CAPEX and OPEX + Smart Applications"² strategy in the domestic telecommunications operator market. For CAPEX, the Group accelerated business development by seizing the opportunities arising from New Infrastructure such as 5G and data centers. Through undertaking 5G network construction with the general contracting model, the Group has strengthened its qualification and general contracting capability and enhanced business value. The Group also captured the data center construction opportunities from cloud-network integration. For OPEX, the Group has deepened the development of traditional businesses such as network maintenance, property management and supply chain, endeavouring to expand its market share. Meanwhile, the Group has proactively integrated into the ecosystem of operators' transformation. By cultivating the Group's service and product capabilities in "Cloud + 5G + DICT", the Group has explored new markets such as 5G industrial applications, To B business of operators, network information security and cloud-network integration. The impact of the pandemic on business development was thus alleviated and operation fundamentals of the domestic telecommunications operators remained stable. Revenue from such market amounted to RMB69,976 million, representing a year-on-year increase of 2.8%.



The Group proactively undertook 5G general contracting projects from operators



The Group supported the construction of 5G base stations for domestic telecommunications operators

"CAPEX and OPEX + Smart Applications": CAPEX refers to the capital expenditure of domestic telecommunications operators while OPEX refers to the operating expenditure of domestic telecommunications operators.

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OVERSEAS MARKET

In 2020, the Group continued to deepen its overseas collaboration to serve the "Belt and Road" and "Go Abroad" Chinese enterprises. On the premise of ensuring the safety and health of all of its overseas employees, the Group strengthened innovation, accelerated service upgrade and business expansion while vigorously building overseas product bases by promoting smart products overseas. Due to the impact of the pandemic, the overseas market experienced slight volatility. During the year, revenue from overseas customers amounted to RMB3,095 million, representing a year-on-year decrease of 5.2%. The Group continued to leverage the "EPC+F+I+O+S"³ model with focus on the key countries, key markets and key projects, aiming to boost collaboration with the domestic telecommunications operators and cooperation with other Chinese enterprises, and proactively utilized the resources of the domestic financial institutions to jointly develop major projects. Both the number and quality of new projects and reserve projects secured in the overseas markets were continuously improved, with success in the project expansion regarding smart city and smart meter, as well as the maintenance and management business of telecommunications towers and base stations.



The Group undertook the first 4G snow mountain base station in Nepal for Nepal Telecom, which went through a smooth commissioning



The Group undertook the construction of the Ground Cable Session of Africa Optical Cable Backbone Network in the middle of Congo-Brazzaville



The Group undertook base station construction overseas

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BUSINESS OVERVIEW



The Group stayed on duty during the pandemic

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.

Telecommunications Infrastructure Services

As the largest telecommunications infrastructure service provider in China, the Group possesses all the highestgrade qualifications in the communications construction industry in China. In 2020, revenue from telecommunications infrastructure services amounted to RMB67,165 million, representing a year-on-year growth of 3.8%.

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 and supporting systems. In 2020, 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. However, factors such as the outbreak of the pandemic led to slight fluctuation of the results. The Group's revenue of telecommunications infrastructure services from domestic telecommunications operators amounted to RMB38,879 million, representing a year-on-year decrease of 5.5%.

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 smart city, building intelligentization, data centers and electricity engineering. In 2020, the Group's revenue of telecommunications infrastructure services from domestic non-operator customers amounted to RMB25,759 million, representing a year-on-year growth of 23.2%, maintaining a strong development momentum.

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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 continue to explore the market potential and enhance its product and service capabilities, so as to cater for the demand of domestic telecommunications operators for integrated network construction services, and maintain the stable business development of domestic telecommunication operators. Meanwhile, with the in-depth implementation of Cyberpower and other national strategies, the increasing demand for New Infrastructure construction such as smart city and digital transformation, as well as the further advancement of the "Belt and Road", the Group will also meet new growth opportunities in the 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 RMB37,277 million, representing a year-on-year increase of 1.7%.

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 2020, 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 RMB15,794 million.



The Group undertook network maintenance business



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During the year, the Group penetrated into operators' supply chain business, while continuing the expansion on customers from other sectors. In 2020, the Group's revenue from supply chain services amounted to RMB10,871 million, representing a year-on-year growth of 5.3%. Amid the pandemic, the Group 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, the mixed-ownership reform of China Comservice Supply Chain Management Company Ltd. has made great progress and contributed to high-quality development by optimizing system and mechanism.



The Group undertook supply chain business

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 for property services in respect of brand, IT platform, talent team etc. to further enhance the synergistic operational capabilities of Property Management services. In 2020, the Group's Property Management services overcame the impact of the pandemic and achieved a revenue of RMB6,357 million, representing a year-on-year growth of 3.1%.

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 2020, the Group proactively contained the products distribution business with lower efficiency and realized revenue of RMB4,255 million, representing a year-on-year decrease of 1.6%.

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. 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.

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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 2020, the relevant revenue amounted to RMB18,207 million, representing a year-on-year increase of 13.2%. The domestic non-operator customers are the major customer group of our applications, content and other services, which accounted for 60.5% of the overall revenue from such services; revenue from such customers increased by 24.1% year-on-year in 2020, being the major growth driver for applications, content and other services.

In 2020, the Group leveraged the strength of its integrated service and capabilities on system integration and software development to keep expanding ecological cooperation scale, seized the opportunities such as New Infrastructure and digital transformation in China. The Group vigorously expanded the markets including 5G, data centers, smart city, transportation, electricity, safety and emergency management, which in turn 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 gained increasing industry recognition and brand influence that it continued to rank 5th in "100 Most Competitive Software & IT Service Enterprises 2020". CCS IoT Platform won the honor of "2020 Best Digitalization Product in PRC" granted by China International Fair for Trade in Services and "OFweek 2020 Most Popular Development Platform in China IoT Industry" jointly granted by Industry and Information Technology Bureau of Shenzhen Municipality and OFweek.

The Group will capture the opportunities arising from the rapid development of digital economy, keep upgrading its key products and continue to enhance the R&D and platform construction in key sectors such as IoT, big data and information security, so as to continuously meet the informatization construction demand from customers.



The Group provided smart solutions to customers



CCS IoT Platform of the Group won the honor of "OFweek 2020 Most Popular Development Platform in China IoT Industry" jointly granted by Industry and Information Technology Bureau of Shenzhen Municipality and OFweek



CCS IoT Platform of the Group won the honor of "2020 Best Digitalization Product in PRC" granted by China International Fair for Trade in Services



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CONTENTS OF CERTAIN GROUP-LEVEL PRODUCTS OF THE GROUP

1	CCS Innovation Middle Platform	The Group forges a unified and standardized R&D and innovation platform, provides consistent underlying cloud-based resources and standardized operation support, provides improvement of R&D innovation capability, and standardized output of talent pool, knowledge and product marketization for relevant enterprises, as well as integrated solutions which enables monitoring, management and analysis throughout the whole R&D process, thus supporting enterprises to realize business innovation and digital transformation.
2	CCS IoT (IoT Full-stack Service Platform)	CCS IoT builds a one-stop full-stack IoT professional service platform to provide customers with full life cycle services covering IoT design, software and hardware development, equipment installation and maintenance and equipment operation services as well as professional support tools. Through providing customers with offline IoT professional services by the digital service support network of the Group, CCS IoT comprehensively accelerates the implementation of IoT applications and facilitates the digital transformation of industries.
3	CCS Network Information Security (Security Operation Center Product Portfolio)	CCS Network Information Security works to materialize a high-quality security product portfolio for use with independent intellectual property rights, including but not limited to cyberspace asset mapping platform, network traffic analysis platform, security situation perception platform, CA electronic authentication, harmful information content automatic testing platform etc. Cooperating with high-quality ecological partners in the industry, it provides the comprehensive solutions of security operation center and integrated security services, offers data security and business security solutions for smart social services, supports the major projects and essential security activities, and serves the security construction and maintenance of national key infrastructure.
4	CCS Emergency Management (CCS Emergency Management Product Portfolio)	CCS Emergency Management has built a product portfolio of "1 (1 capability middle platform) + 6 (6 major business applications) + N (N emergency equipment)" with completely independent intellectual property rights. Regarding the key technologies of the industrial IoT security and safe production emergency management system, it possesses the core technologies with independent intellectual property rights and the products include, but are not limited to, emergency management comprehensive application platform, hazardous chemicals monitoring, early alert and precaution platform, Internet+Safety law enforcement platform, emergency management smart dispatch platform, etc. It also works jointly with high-quality partners in the industry to provide integrated application solutions in the fields such as communication security, production safety, industrial safety, emergency management, park safety, urban public safety for the government, emergency-related industries and large enterprises. It provides integrated comprehensive services such as consultation and planning, platform construction and system operation for the modernization of national emergency management capability, and strives to become the national team that protects national public safety and safeguards a better life for the people.
5	Industrial	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 level)), 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".

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6	Smart City	To bolster precise city management and urban services, as well as modernization of urban governance through effective integration and resource sharing of city information, the Group uses Smart City top-level design as the entry point to build up Smart City Big Data platform, city operation management platform and smart applications that allow for flexible disassembly and reorganization.
7	Smart Town	Leveraging IoT, Big Data and other technologies, the Group constructs the Smart Town Comprehensive Big Data Management Platform and realizes five applications, namely landscape protection, hazard warning, "River Chief System" river and water quality protection and monitoring, pipe and grid network and resource management in towns. Through a combination of platform+application+services, the Group provides Smart Town comprehensive solution.
8	Smart Park	The Group provides integrated turnkey solutions for construction of parks, including consultation, planning, construction, operation and maintenance. Based on a co-sharing platform, the Group provides unified management and differentiated services for the parks with marketing, management and services as the three major integrated application systems.
9	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.
10	Smart Procuratorial Services	Smart Procuratorial Services is a comprehensive intelligent service platform based on electronic inspection and a consolidation of "Information Perception, Network Transmission, Knowledge Services, Procuratorial Applications and Operation Management". It provides smart public prosecution, smart civil and administrative prosecution and smart appeal service for inspection.
11	Smart Government Services	Smart Government Services utilizes integrated government services platform as the core and is supported by Big Data and data co-sharing platforms, together with the government service hotline ("12345") and the hall of Smart Government Services, act as the extension and window of government service.
12	Smart Justice	Taking the construction of public law service systems as pivot and leveraging government services cloud platform, the Group builds the integrated administration and management platform that consists of law consultation, law services, administration services, data monitoring via multiple channels such as physical, online and phone.



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13	Smart Court	By integrating advanced technologies such as Big Data, AI and IoT, the Group provides court system with full-service and full-cycle integrated ICT solutions.
14	Smart Campus	Based on various application service systems, the Group makes improvement in education with big data by fully integrating teaching, scientific research, management and campus life, provides precise management, education and studying and creates an intelligentized campus for studying, living and environment, thus achieving smart campus management, campus and life integration campus facilities digitalization, dynamic classroom teaching and seamless home-schoo communication.
15	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.
16	Smart Airport	The Group consolidates the research and development capabilities of each key product centers to establish an integrated smart airport service system and assist each airline group in the civi aviation industry of China to establish a "safe, green, smart and humanistic" airport and realizing the goal to be a world-class airport with "high technologies, high standards and high quality".
17	Smart Sport	Based on informatization platforms, such as the game results platform, stadium operation platform, game management platform and game command platform, the Group provides full- process and integrated services to various sport games from preparation, construction to operation.
18	Smart Finance	Adopting a B To B To C model, the Smart Finance provides full-process, modularized integrated fintech solutions, including financial information system, financial products operation and financia data services, to enterprise customers and financial institutions.
19	Smart Water Conservancy	Targeting at government departments and related enterprises that are relevant with water conservation, marine protection and environmental protection, the Group constructs a comprehensive water conservancy information platform that provides analysis of data collected from water level measurement, hydraulic engineering, video recognition and automatic control The platform provides effective support for the enforcement and monitoring of water law, water resources management, flood-alarming and river/lake management.

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20	Smart Agriculture	The Smart Agriculture is a comprehensive production management platform giving a full view of information about agricultural production, providing smart management of agricultural production based on expertise and realizing a new agricultural production management concept of "precise perception, all-around control, interactive farming and smart decision". It provides professional assistance to refined management of agriculture in large scale.
21	Smart Exhibition	The Smart Exhibition provides an integrated exhibition showcase service from design and planning to professional implementation for exhibition halls, expos and enterprises of various scale.
22	Smart Customer Service	Based on traditional call centers, the Group provides customized one touch access and number recognition customer service platform with all channels by integrating different functions such as multimedia CS centers, sales service centers and customer management centers, thus enhancing enterprise efficiency, service quality and assisting customers to develop market.
23	Smart Enterprise	The Smart Enterprise provides multiple leading public cloud (SaaS) products to enterprises, helping them to realize integrated digital transformation in respect of human resources, events and devices, including talent management, enterprise resource management, full-channel marketing management, cloud procurement management, expense management, business intelligent analysis and other functions.
24	Smart Education	The Group changes the traditional learning mode by utilizing informatization technologies to realize the integration of online learning and offline training for the adoption of mixed learning mode. Leveraging on mobile internet, cloud computing, live broadcast, AR/VR and other technologies, the Group provides enterprises with one-stop training solutions to help them build learning organizations.
25	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.
26	Smart Community	Driven by demand for precise and smart city management and standing on the technological base of deep integration between digital technology and physical facilities, the Group leveraged the three orientation capabilities, namely smart connection capability for space perception, smart service capability for scenarios and middle platform operating capability, as well as the strengths on integrated services to provide a full range of smart community services that is scenario driven, one-region-one-policy, operable, safe and caring for various operators.