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Innovation At Every Level

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China Unicom Relies on Schneider Electric to Operate Their Hyperscale Data Centers

China Unicom Cloud Data Co., Ltd. – Beijing, China

As China Unicom expands their cloud computing and big data business, Schneider Electric provides them with highly trained, experienced staff onsite to ensure the reliability and efficiency of their data center infrastructure

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Telco giant expands with Hyperscale cloud data centers across China

China Unicom is moving beyond telecommunications, establishing itself in integrated cloud computing and network connection services with their China Unicom Cloud Data Co., Ltd., established in 2013. The telco giant launched their Wo Cloud brand covering cloud computing and big data fields with three service products:

1. Cloud Computing Infrastructure
2. B2B Enterprise Cloud
3. B2C Public Cloud

Their plan is to build 12 super-scale cloud data centers and 335 regional data centers throughout China, covering 196 regions and cities. The overall area of these data centers is more than 2 million square meters, containing more than 320,000 racks and with network connection bandwidth of 60T.

Two of these massive data centers are in Hohhot (Northern China) and Langfang (between Beijing and Tianjin). With a total area exceeding 600,000 square meters and more than 12,000 racks, the Hohhot data center is reputed to be one of the largest data centers in Asia in terms of capacity. The Langfang data center holds more than 9,000 racks after its first phase of construction. These two cloud computing data bases are new-generation green centers with high availability and provide five-star, high-end VIP data center services to China Unicom's strategic enterprises, as well as domestic government agencies, finance companies, and Top 50 Internet companies.

In addition, the Langfang data center serves as China Unicom's Enterprise Applications Support Center and provides the internal enterprise cloud computing platform and its supporting information technology systems.

Advantages and challenges of deploying cloud data centers

Kang Nan, General Manager of the Operations and Services Department of China Unicom Cloud Data has years of

practical and theoretical experience in the data center sector and has witnessed firsthand the development of China's data center industry. In his opinion, the industry is experiencing explosive growth at a rate much higher than the average global growth rate. By 2020, the data center market in China is expected to reach 25% of the global market share.

In China, telecommunication providers have not only developed the broadband network infrastructure and built a lot of Internet Data Centers all over the country, but also have a huge existing customer base — including government entities and enterprises. This gives them an inherent, distinctive advantage in developing the cloud computing business. Nowadays, they are supplying their end-users with a cloud computing service package composed of computing resources and network connections. This has become their new high growth area.

Mr. Kang highlighted that despite enjoying the quick growth and possessing huge competitive advantages, there were still challenges that needed to be properly addressed. These include insufficient infrastructure support, limited service categories, and scale — inefficient supply chain and immature business models. Perhaps the biggest challenge they faced was the low efficiency of their IT infrastructure operations, putting their goal of running at full capacity 24/7, in the near future, at great risk.

"With the Critical Facility Operation services provided by Schneider Electric, the two cloud computing bases in Hohhot and Langfang have finally achieved zero interruption to user's key workloads."

— Kang Nan

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Joining hands with the most reliable partner in data center operations and maintenance

With China Unicom's Cloud Data group establishing itself in the field of hyperscale data centers, they needed a partner with proven experience and expertise to manage operations and maintenance of their Hohhot and Langfang centers. They were looking for a partner who could provide highly trained, experienced staff onsite to ensure the reliability of the data center infrastructure, without compromising the overall high energy efficiency and low PUE. They chose Schneider Electric.

First things first

"First, we adopted international advanced technology with the latest standards and purchased up-to-date facility systems and equipment to ensure that the overall technical level of our super-scale data centers reached world class. On the other hand, we needed a strategic long-term partnership with an industry giant who could help us achieve superior service differentiated from our competition," Mr. Kang stated.

"The top priority for us in choosing the strategic partner was strength of their company and their brand," he said. "In this regard, Schneider Electric is globally recognized as a thought-leader in the industry. We also acknowledged its great strength in data center lifecycle services, including leading infrastructure solutions for critical power and cooling and extensive expertise in critical facility operations & maintenance."

For many years, Schneider Electric has been one of the top 3 suppliers in their Class A supplier list and has been recognized and trusted by China Unicom. In 2015, China Unicom Cloud Data Company, Ltd. and Schneider Electric established a long-term strategic partnership.

To supplement their inexperience in operating, maintaining and managing hyperscale data centers, China Unicom counts on Schneider Electric's extensive expertise and experience in the operation and management of data centers around the globe. Using their systematic, proven methodology, Schneider assisted China Unicom in establishing and documenting a customized internal operation and maintenance management program for the Hohhot and Langfang sites as well as improving their personnel training and certification program.

Utilizing Schneider's data center operations and maintenance expertise

In addition, based on their demonstrated competence and rich experience in data center infrastructure operations, China Unicom elected to outsource on-site critical power operation services for the two sites to Schneider Electric — from utility entrance down to rack power distribution units, with emergency generators and direct-current power supply systems included.

According to Kang, "Schneider Electric also helped China Unicom Cloud Data Co. Ltd. to prepare 'Technical specifications and naming rules for Interface B and Interface C of Infrastructure monitoring system, by supplying technical support for the UPS systems."

Critical factors for a safe, reliable, and low-cost operation

In Mr. Kang's opinion, the longest phase of data center lifecycle — its operation & maintenance phase — is never an easy job and best left to experts like Schneider Electric. "The availability of infrastructure, the effectiveness of configuration management, the proficiency of staff, and risk management are all critical factors for a safe, reliable, efficient and low-cost operation. A hyperscale data center can only achieve its designed availability (99.999%) by efficient operation & maintenance management and continuous optimization as provided by Schneider's established program."

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— *Kang Nan*

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Results of the strong partnership

During the planning phase of the Hohhot and Langfang sites, China Unicom absorbed and adopted much of Schneider Electric's practical experience and best practices. This enabled the two sites to meet Rating 3 requirements of ANSI/TIA-942 standard, even reach Rating 4 for its electric power system.

Currently there is a staff of 108 Schneider Electric experts on-site providing 24/7 operation and maintenance services for the two super-scale cloud computing data centers. Upon the completion of Phase 2 and 3 of the construction that number will reach 170. By utilizing its proven methodology and best practices, tailored to specifications of the two sites and China Unicom's specific requirements, Schneider Electric has enabled China Unicom to greatly improve their reliable operations, preventive and predictive maintenance and risk management capability. The uptime of the electric power system for both super-scale data centers remains at 100% and the operation cost savings are up to 30%.

Mr. Kang expressed, "With the Critical Facility Operation services provided by Schneider Electric, the two cloud computing bases in Hohhot and Langfang have finally achieved zero interruption to user's key workloads. Even during holidays and important events, such as *Double 11 Singles' Day* (similar to Cyber Monday in the US), Schneider Electric guaranteed electric power system reliability through their effective emergency preparation and response process."

Partnering for the future

He added, "By outsourcing the operations and maintenance of the data center infrastructure to Schneider Electric, we can focus on the development of our core businesses, such as cloud computing and big data, which lay a solid foundation for us to provide end users with even safer, more reliable, more stable, more efficient, more economical, more convenient data centers and cloud computing services. Schneider Electric is our most reliable partner and the positive relationship we have with them will be continued. In the future, we look forward to further partnering with Schneider Electric in more fields like digital operations and maintenance."

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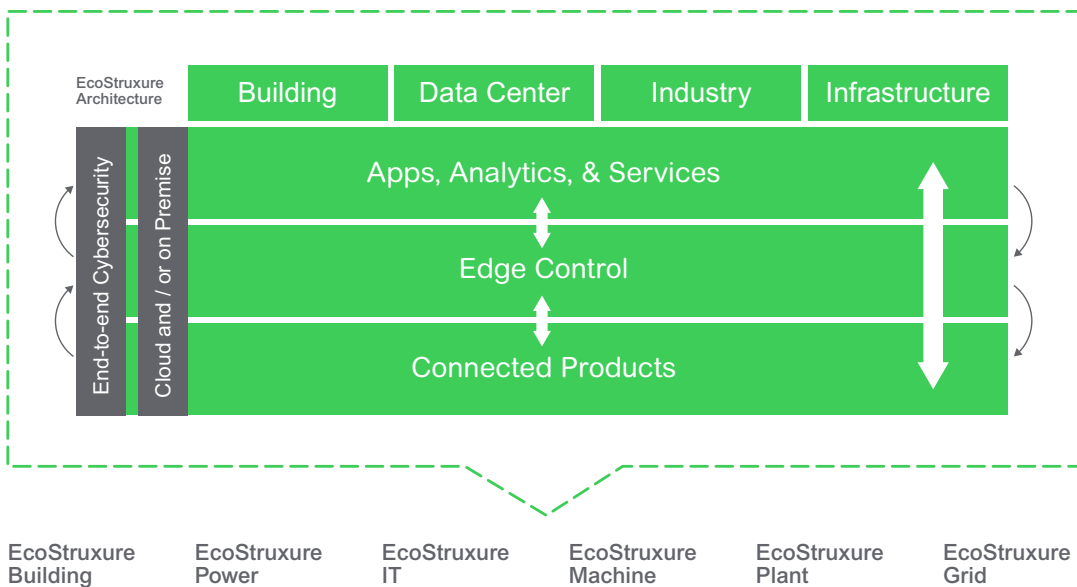## Innovation At Every Level

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EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 450,000+ installations, with the support of 9,000 system integrators, connecting over 1 billion devices.

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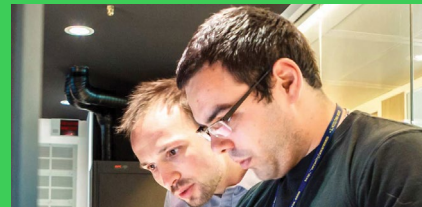Life Is On | Schneider Electric

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