



ZTE Corporation Recognized for

2021

Product Leadership

Global Telecom DC Power Industry

Excellence in Best Practices

ZTE

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. ZTE excels in many of the criteria in the Telecom DC Power space.

| AWARD CRITERIA | |
|-------------------------------------|------------------------|
| <i>Product Portfolio Attributes</i> | <i>Business Impact</i> |
| Match to Needs | Financial Performance |
| Reliability and Quality | Customer Acquisition |
| Product/Service Value | Operational Efficiency |
| Positioning | Growth Potential |
| Design | Human Capital |

Match to Needs

“Over the course of the research, it was clearly evident that ZTE’s telecom power products and solutions are perfectly placed to address even the most demanding needs of operators. These needs are highly influenced by 5G and primarily revolve around rapid deployment, seamless capacity expansion, optimized energy usage, simplified operation and maintenance, and of course quality, reliability and security of the highest magnitude.”

- Gautham Gnanajothi, Global Research Director

ZTE has a unique eye to unearth unmet market needs and under-served customer requirements. The company has demonstrated unmatched excellence in the telecom power market when it comes to developing products and solutions that not only match the current market needs, but also anticipated future customer requirements. Its high level of success in this area can be attributed to its utmost focus and continued dedication in tracking, analyzing and realizing market trends and voice of its customers; this ultimately translated in to developing meaningful and impactful products and solutions. With a comprehensive product development strategy, ZTE has been highly successful in establishing a unique position and significant competitive edge in

the market. The company has developed a wide-ranging telecom power product portfolio that is built on four pillars – DC power systems, hybrid power solutions, energy storage and network energy management solutions. Its intriguing to note that the company has evolved from a DC power systems

manufactures to a holistic and integrated network energy solution partner for telecom operators. Over the course of the research, it was clearly evident that ZTE's telecom power products and solutions are perfectly placed to address even the most demanding needs of operators. These needs are highly influenced by 5G and primarily revolve around rapid deployment, seamless capacity expansion, optimized energy usage, simplified operation and maintenance, and of course quality, reliability and security of the highest magnitude.

As one can imagine, the significance of the carbon neutrality mega trend in the telecom sector is higher than ever. The impact of this trend is further escalated by the increasing power demand, driven by 5G. Increased spectrum requirements and increasing number of applications that will use the 5G networks will drive high power consumption and will require advanced DC power systems which can cater to increased power demand. Telecom operators are in active pursuit of power solutions that facilitate their sustainable development through carbon neutrality, while addressing 5G related market needs. There is no doubt that ZTE is an ideal candidate to support telecom operators through this journey. The company has developed a novel and visionary concept of Zero Carbon energy network will empower telecom operators to achieve their strategic carbon neutrality goals.

This far-reaching concept emanates from the development and commercialization of 5G, IoT, cloud computing, AI/ML, edge computing, and other such advanced technologies. ZTE's zero carbon energy network is built on three unique layers. The first layer is the "Product Technology Layer" which essentially encompasses cutting edge technologies that drive low-carbon and zero-carbon initiatives. Critical elements of this layer include intelligent solar, which optimizes green energy generation; intelligent transformation to facilitate efficient power conversion; intelligent energy storage; intelligent power distribution, which offers power on demand; and finally intelligent thermal control designed to significantly reduce power consumption. The second layer is the "Integrated Solution Layer", which is positioned as a full-scenario zero-carbon solution. The core components of this layer are simplified site, green equipment room, and prefabricated fully modular data centres. In principle, the architecture of this layer is designed to create new forms of network energy infrastructure while implementing low-carbon deployment and operation of the entire network. Finally the third layer is the "Management Layer" which offers continuous optimization of the unified network energy management platform through cloud energy management. It leverages big data and AI to further improve and optimize energy efficiency and O&M efficiency.

Outstanding Reliability and Quality

ZTE excels in offering holistic telecom power products and solutions that provide a superior customer ownership experience throughout the product lifecycle. Its relentless pursuit to enhance customer value through continuous product development and technology innovation is highly commendable. The company's unmatched focus on quality and reliability is underpinned by its strategy to place customers' requirements at the heart of its product and technology development. In terms of product quality and reliability, ZTE constantly strives to not only meet customer expectations, but to exceed expectations. This is achieved by constantly monitoring, reviewing and enhancing its quality policies and procedures through implementation of robust processes and initiatives.

Given that both power and energy density of traditional telecom site components are relatively low, this presents a challenge for 5G deployment requiring additional cabinets to be deployed to handle the increase in densities. This is due to the lack of space and the inability of the existing cabinets to accommodate 5G devices. This ultimately results in adding new footprint which leads to increased lease costs or higher site rents. From a battery perspective, the low energy density, heavy weight and large volume of lead-acid batteries further aggravates the difficulty to deploy 5G.

As a result of the increase in power densities and energy densities of batteries, there will be a shift towards centralized and smaller sized energy infrastructure of base stations. ZTE's efforts and initiatives to address the challenges in this space are highly commendable; the company's pioneering One-Cabinet and All-Pad concept is highly successful in site simplification. Furthermore, this path-breaking concept also greatly improves energy efficiency and deployment speed, significantly lowers construction cost and site acquisition cost while also saving power costs, rental costs, and O&M costs for operators.

The company is actively contributing to the transformation of indoor sites to outdoor deployment, outdoor sites to All-Pad deployment. This results in the equipment room to be converted into cabinets, where multiple cabinets are transformed in to one cabinet and one cabinet is changed to an All-Pad site mounted on a pole with zero footprint. The level of site energy efficiency improvement achieved though this is truly remarkable. The outdoor transition increases energy efficiency from the previous 60% to 85% and the All-Pad sites benefit from a >95% energy efficiency. On the other hand, ZTE is also highly adept in expanding the capacity of an existing equipment room with its green equipment room solution. This unique solution leverages a combination of its innovative large-capacity UniPower and large-capacity lithium-ion batteries which paves the way to achieve centralized power supply for ICT equipment of various systems. It is also noteworthy that this solution improves the energy efficiency of the equipment room to >75%.

Industry Leading Product/Service Value

"One of the key elements that set apart ZTE's zero carbon energy network is the level of intelligence embedded in critical components such as solar, lithium ion batteries, power distribution and transformation, thermal control and so on."

- Gautham Gnanajothi, Global Research Director

ZTE has earned a unique brand image for itself in a highly competitive market; it has gained a reputation of a company that delivers high value in its products and services. The company's value proposition is centered around technology excellence, innovation, and, most importantly, customer focus. The company's innovative product development strategies and unique customer value enhancement initiatives are two key aspects that characterize its product and service values.

ZTE's highly innovative iEnergy solution is a vivid testament to its excellence in offering top-of-the-line product and service value in the telecom power market. The iEnergy system is a unified cloud energy management platform based on big data and AI technology. The design elements of iEnergy are structured in a way to allow tremendous improvements to network management efficiency and unprecedented site security. It essentially offers complete visibility and a holistic view of the energy status of the entire network and performs detailed and multi-dimensional analysis of the network energy efficiency and O&M components. This allows operators to

substantially improve critical aspects such as energy efficiency of the network, reliability of the power supply, and O&M efficiency. Some of the key value adding features and functionalities that enable these network improvements include holistic network visualization, alarm management, energy efficiency management, operations management, maintenance management and security management. Additionally, it is also impressive to note that iEnergy covers all nodes of the energy chain, right from power generation to electricity consumption. It also enables precise energy scheduling; it supports energy network construction through meticulous synchronization of both intra-site and inter-site energy devices. iEnergy marks the cornerstone in the evolution of future telecom networks. Its ability to offer intelligent O&M by leveraging AI, cloud and robotic technologies is truly one of kind and has the potential to revolutionize the industry.

Unique Product Positioning

It is impressive to see ZTE's high level of focus and determination in enriching customer value and experience. The company is able to successfully translate this high level of focus in to its product development and product positioning strategies through its vast technology expertise and immense innovation capabilities. This is also clearly demonstrated in its meticulous R&D and engineering initiatives aimed at driving its vision of creating highly efficient, modular, intelligent and green telecom power solutions that address current customer pain points as well as evolving future 5G requirements.

ZTE's zero carbon energy network is positioned impeccably to address carbon emission challenges created by 5G networks and evolving hyper-scale data centre architecture. It offers a complete shift away from traditional network energy solutions by transforming energy infrastructure that is highly intelligent and interconnected. It also enables seamless energy management and scheduling right from power generation to power consumption of the whole energy power supply chain. One of the Key elements that set apart ZTE's zero carbon energy network is the level of intelligence in embedded in critical components such as solar, lithium ion batteries, power distribution and transformation, thermal control and so on. The way ZTE transformed its focus from pure network energy efficiency to a more holistic approach encompassing green energy, smart O&M and energy efficiency is praiseworthy. As a result of this transformation, the company has developed four high-impact technology-based themes. These themes will play a crucial role in the digital transformation of the traditional network energy infrastructure and expediting the carbon neutrality journey of the telecom operators.

Excellence in Product Design

ZTE's product design excellence can be primarily attributed to its highly skilled and proficient engineering and R&D teams and it's in depth market knowledge which it has gained over the past many years. This vast technology know-how, engineering expertise, and market exposure have empowered the company to create industry-leading telecom power solutions that are well received and accepted by leading telecom operators across the globe. The company has gone to great lengths to ensure its products leverage highly advanced next-generation technology, which are uniquely placed to address the market gaps and voids that the traditional products are unable to fill. Frost & Sullivan research findings suggest that ZTE's path breaking telecom power solutions will play a crucial role in driving the industry forward towards attaining carbon neutrality.

The company's next-generation intelligent power supply, "UniPower" is a great example to demonstrate its unmatched design expertise and technology sophistication. This revolutionary product leverages a fully modular architecture in a 2U size and contains the following modules:

- 3kW/4kW rectifier module
- Solar energy power module
- 57V bidirectional conversion module
- 280V high-voltage DC booster module
- 48V-12V/24V conversion module
- Intelligent power distribution module

UniPower is designed to offer a high degree of flexibility to use a mix of full series of modules and is embedded with various value-added functionalities that enhance customer value multi-fold. Examples of key features include, multi-type energy input and multi-mode output, intelligent parallel power supply in the existing network, intelligent shaving without reconstruction of mains, 280V high-voltage DC remote power supply and intelligent power distribution. In simple terms, this next-generation intelligent power supply provides operators with the much-needed flexibility and simplification, along with rapid deployment and highly efficient power solution to construct and transform 5G sites and equipment rooms.

Excellent Financial Performance & Customer Acquisition

ZTE's financial performance and growth trajectory in the telecom power market is highly impressive. The company's excellence in financial performance can primarily be attributed to its strong focus on all product segments, its overseas sales strategy and its financial stability. It is also impressive to see the company evolve from an Asian player to becoming an iconic brand in the global arena. The driving force behind this remarkable evolution is its determination and commitment to developing products and solutions that strike a perfect balance between price and performance value. This is complemented by the outstanding customer ownership experience offered by ZTE, which is mainly driven by two key aspects; unparalleled product performance and customer intimacy. Frost & Sullivan find this to be a perfect amalgamation of deep-rooted traits that will further elevate ZTE's market position in the global market over the coming years. ZTE's excellence in customer acquisition is also clearly evident from its growing list of new customers and its long-term association with its existing customers.

Conclusion

ZTE has established a unique brand image for itself in a highly competitive telecom power market; its brand name is synonymous with technology excellence, innovation, and, most importantly, customer focus. The company's innovative product development strategies and unique customer value enhancement initiatives are two key pillars of its success. It is highly impressive to see the rapid pace at which ZTE has evolved from being a telecom power products manufacturer to an iconic brand that plays a crucial role in telecom industry decarbonization.

With its strong overall performance, ZTE earns Frost & Sullivan's 2021 Global Product Leadership Award in the telecom DC power industry.

What You Need to Know about the Product Leadership Recognition

Frost & Sullivan's Product Leadership Award recognizes the company that offers a product or solution with attributes that deliver the best quality, reliability, and performance in the industry.

Best Practices Award Analysis

For the Product Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Product Portfolio Attributes

Match to Needs: Customer needs directly influence and inspire the product portfolio's design and positioning

Reliability and Quality: Products consistently meet or exceed customer expectations for performance and length of service

Product/Service Value: Products or services offer the best value for the price compared to similar market offerings

Positioning: Products serve a unique, unmet need that competitors cannot easily replicate

Design: Products feature innovative designs, enhancing both visual appeal and ease of use

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

