

**CENTIEL
RECEIVES THE 2023**
TECHNOLOGY INNOVATION
LEADERSHIP AWARD

Identified as best in class in the global UPS industry

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. Centiel excels in many of the criteria in the UPS space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Business Impact</i>
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Centiel: Driving Continuous Power Availability

As sustainability ubiquitously emerges as an increasingly important factor across all sectors, industries seek high availability, low-emission, and energy-efficient power-protection solutions to drive their transitions towards net zero emissions. More specifically, as uninterruptible power supply (UPS) technologies reach their design limit in terms of efficiency, the focus shifts towards increasing the useful life of the UPS solutions to match that of the infrastructure they support while also enhancing overall equipment reliability and sustainability. Similarly, customers continue to demand scalable and flexible solutions in the form of modular UPS systems that allow them to scale power availability in tandem with business growth.

Within this context, UPS manufacturers must continually integrate new technologies to address evolving customer needs for sustainability and scalability, offering differentiated, market-driven solutions to succeed in this mature and highly competitive market. Frost & Sullivan's research indicates that Centiel is a torchbearer in this regard.

Centiel uniquely leverages its market-leading power protection solutions to meet critical facilities' evolving needs. The Switzerland-based technology innovation company designs, manufactures, and delivers a range of class-leading, energy-efficient UPS systems that offer the highest levels of availability

and reliability. Centiel's technology aims to eliminate the risk of downtime, achieving unprecedented uptime, and offering high efficiency and easy serviceability.

Backed by world-class subject matter experts with 30+ years of proven industry experience, Centiel launched the innovative CumulusPower™, a three-phase, online double-conversion, and fully distributed modular UPS, as its first offering in 2017. The company equipped the solution with its innovative Distributed Active Redundant parallel Architecture (DARA) topology to offer an industry-leading availability of 9 nines (99.9999999%) and best-in-class voltage and frequency independence (VFI) efficiency of 97.1%. As a next phase of its product evolution, Centiel increased the resilience and

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- Gautham Gnanajothi
Global Vice President of Research

intelligence of the incumbent decentralized parallel architecture technology to create a distributed technology (DARA), which allows each UPS module to operate as independent, redundant, and interconnected systems.¹

Moreover, DARA's Distributed Decision Making™ technology elevates redundancy by enabling collaborative decision-making among all UPS modules, ensuring continuous power supply to critical loads even during crucial decision-making moments. As a result, the UPS system can make distributed decisions, eliminating the single point of failure typically associated with master-slave technology, protecting critical loads, minimizing downtime, and maximizing power availability at the module, frame, and system levels. The system's active redundancy also empowers the equipment with self-healing capabilities, allowing it to reestablish itself without human intervention, further improving system

reliability. Additionally, on the frame level, the DARA architecture accommodates non-intrusive maintenance and reduces mean time to repair, ultimately leading to higher availability and reduced costs.

Furthermore, Centiel differentiates itself by incorporating an innovative triple-mode communication that substantially strengthens CumulusPower™'s communication resilience. The company achieves this feat through a fully redundant TripleMode™ communication bus, remedying competing UPS solutions' communication-related shortcomings. Unlike the conventional single-mode or ring communication approach, Centiel ensures robust communication reliability by implementing three distinct communication lines equipped with separate electronic components. This design choice provides redundancy in both the electronic components and physical connections of the communication channels, further enhancing the UPS solution's overall reliability.

Additionally, CumulusPower™ incorporates an intelligent maximum efficiency management function that

¹ <https://www.centiel.com/products/cumulus-power/>, accessed June 2023.

aligns the number of modules to the load demand, ensuring optimal energy efficiency. When operating at low load levels, the system places redundant modules into Active-Sleep mode, significantly reducing energy consumption. These modules can quickly come online once the load increases, continually maximizing availability.

Centiel's CumulusPower™ range of UPS solutions has had tremendous commercial success. This level of success is underpinned by its commitment to unearthing market gaps and unmet customer needs and its ability to address these gaps and needs with highly innovative and meaningful features and functionalities. With a deep-rooted product development strategy, the company delivers products that are not only tailored to address current customer pain points and frustrations but also take into account some of the anticipated technology innovation-driven future needs. In line with this approach, Centiel improved upon the market-leading capabilities of its innovative CumulusPower™ solution with longer lifetime and sustainability as major considerations to launch StratusPower™ in May 2023², meeting the evolving demands of critical infrastructure projects.

StratusPower™: The Next-Generation UPS Solution

Building on its robust and reliable semiconductor technology, Centiel added several unique technology-driven features to its state-of-the-art StratusPower™ solution to offer unrivaled efficiency (enhanced VFI efficiency of 97.6%³), continuous availability (99.9999999%), and sustainability functionalities. For instance, the company empowered the new modules with advanced computing capabilities by embedding trigonometric math mechanism co-processors to enable more efficient energy management. Similarly, the highly reliable UPS product's peak-shaving feature helps customers manage electricity usage and reduce energy costs.

"Centiel is highly cognizant of the intricacies involved in developing UPS solutions, and it goes to great lengths to address them with a high level of attention to detail. Its inherent technology know-how and innovation prowess have resulted in a UPS product that lasts for the duration of the useful working life of a data center. By aligning the StratusPower™'s design life with that of mission critical infrastructure, Centiel eliminates any disruption and inconvenience associated with UPS replacement, optimizing project costs and promoting sustainability."

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Designed for the future, StratusPower™'s unique DCflex© technology adds unparalleled battery storage installation and configuration flexibility, including compatibility with various power generation sources. This unique capability future-proofs critical infrastructure by enabling them to manage current and imminent DC technologies. Additionally, StratusPower™ enables faster charging times and facilitates efficient battery use by offering 500% higher battery charging capability compared to conventional UPS solutions.⁴ Collectively, these innovative features enhance efficiency, reduce energy losses, decrease heat generation, and maintain the highest power availability levels.

² <https://www.centiel.com/stratuspower-the-ultimate-uninterruptible-power-supply-ups-for-net-zero-data-centers/>, accessed June 2023.

³ Ibid.

⁴ <https://www.centiel.com/stratuspower-the-ultimate-uninterruptible-power-supply-ups-for-net-zero-data-centers/>, accessed June 2023.

Moreover, the StratusPower™ offers an unmatched design life of 30+ years, setting it apart from competing solutions with a standard design life of eight to 10 years. Centiel is highly cognizant of the intricacies involved in developing UPS solutions, and it goes to great lengths to address them with a high level of attention to detail. Its inherent technology know-how and innovation prowess have resulted in a UPS product that lasts for the duration of the useful working life of a data center. By aligning the StratusPower™'s design life with mission-critical infrastructure, Centiel eliminates any disruption and inconvenience associated with UPS replacement, optimizing project costs, and promoting sustainability. This extended useful working life also benefits the entire supply chain, from component suppliers to resellers and end-users.

Market-driven Innovation Strengthening Competitive Edge

The foundational element of the company's ethos is to not simply deliver a product but rather a holistic solution and substantial value to its customers. Frost & Sullivan firmly believes this trait will be a crucial driver, further elevating Centiel's market position.

With innovation as the central pillar of its organization, Centiel builds on the solid foundation of mutual respect and a feeling of solidarity between its workforce and management "to rapidly transform new ideas into the most advanced products and solutions."⁵ The company's competitive advantage lies in its work culture that fosters ongoing innovation through an open-minded, lean organizational structure and quick decision-making. Centiel regularly organizes informal technical discussions where its talented workforce anticipates future trends, discusses market feedback, and shares ideas. Moreover, the company emphasizes its workforce's professional development, supporting them via regular in-house (including on-the-job) and external training.

As the innovators of the industry's first transformer-less UPS and the world's first three-phase modular fault-tolerant UPS system, Centiel's highly experienced team employs a multi-step approach to continually draw from unmet customer needs and drive innovation. The company removes organizational silos between its research and development (R&D), technical, and sales departments to gauge these market needs holistically through multiple touch points. As a result, its sales team (that identifies pain points through customer interactions), technical support team (with knowledge of real-world market problems), and field service engineers feed information back to the R&D team that develops market-driven technology components.

For instance, Centiel engaged its partners, customers, and end-users to identify the most frequent causes of human error during field testing. Upon aggregating these responses and conducting an internal technical session, Centiel developed an effective solution: integrating parallel isolators for each UPS module. This enhancement enables technicians to perform full module testing in a hot running system, optimizing the mean time to repair, mean time between failure and availability, without compromising the load.

This collaborative, innovation-driven focus and an ongoing commitment to address the market's operational needs empower Centiel to outpace its contemporaries in the global UPS space. It is noteworthy that while other UPS manufacturers look to replicate CumulusPower™'s capabilities, the

⁵ <https://www.centiel.com/company/>

company has already launched its next-generation StratusPower™ solution. Like its predecessor, this new product family introduces a novel set of technologies that marks the cornerstone for a new trend in the power protection industry. Intriguingly, Centiel is already working on its next release to address mission-critical customers' future challenges. As a result, the company successfully stays one generation ahead of its competition and is well-positioned to capitalize on new growth opportunities, cementing its leadership in the global UPS market.

Dedicated Partner Program Driving Commercialization Success

Since launching its first product in 2017, Centiel has rapidly expanded its network of channel partners and subsidiaries, empowering it to offer premier power protection solutions to a growing global customer base. The company's open, collaborative, and dynamic approach to its channel partners and end customers has been the key to driving its commercialization success. Centiel exclusively works with professional partners that genuinely understand market needs and recognize customer requirements; more importantly, Centiel's channel partners fully appreciate its product's unique value propositions. Unlike its contemporaries' transactional interactions, this approach adds technical value to the company's sales channels, benefiting the entire value chain. With this approach, customers enjoy access to highly experienced consultants that provide honest, independent advice to help them locate the right solution for their specific needs. Centiel currently deploys its products in 100+ countries through nine subsidiaries and 90 channel partners.

In just five years of operation, Centiel leveraged its team's strong pedigree, impeccable market reputation, and vast industry expertise to establish itself as a critical player in the global UPS market. Within this context, the company incorporates the human capital that founded and operated Newave (now ABB), the erstwhile technology leader. This team's longstanding reputation in this specialized market and the company's commitment to customer-driven innovation significantly enhance customer interest in its UPS solutions. As a result, Centiel successfully retains its partner network and earns new customers through word-of-mouth accolades.

Centiel offers its technology to customers seeking high power availability across several verticals and market segments, including data centers, edge computing, manufacturing facilities 4.0, and healthcare. For example, increasing automation and growing information technology equipment uptake in industrial plants drive the demand for power protection equipment. Centiel is optimally positioned to serve these needs with its robust and adaptable solutions. At the same time, the company's StratusPower™ solution readily integrates various energy sources, including Lithium Iron Phosphate (LiFePO₄) batteries. This compatibility enables the company to accommodate increasing renewable energy integration and address the industry's evolving DC technology landscape.

Roadmap to Success: Customer-centric, Innovative, and Proactive

Centiel develops strong, personal, long-term customer relationships. As a customer-focused company, it maintains an efficient, dynamic, and responsive work environment. It strives to understand its partners' and customers' needs and effectively addresses them by leveraging its technology and human capital strengths. Additionally, Centiel maintains a strong line of customized communications to respond quickly and accurately to customer queries and concerns, building customer trust in its solutions.

Furthermore, Centiel firmly believes in a "win-win" strategy where it strongly contributes to the success of its partners, allowing it to build a strong partner network quickly. To this end, the company implements a 360° partner program with clear objectives and shared plans. Centiel connects with and maintains clear communication lines with every operational department at its partner organizations, including sales, orders, logistics, and technical service. By prioritizing long-term thinking, the company displays unwavering loyalty and commitment to suppliers, channel partners, and end-users, resulting in the acquisition of channel partners from competitors and the retention of its own.

Some of the company's efforts include:

- On the operational side, Centiel's sourcing and purchasing departments build strong relationships with its supply chain. The company plans well, places advance orders, and accepts timely deliveries, ensuring it dispatches customer orders on schedule.
- On the sales side, the company employs a 360° program targeting every connection point between Centiel and its partners. This "people to people" approach drives collaborative customer relationships.

As a result of this customer-driven approach that focuses on dispersing benefits across the value chain, Centiel has secured exceptional growth over the past five years. As one of the fastest-growing three-phase modular UPS manufacturers, with sales increasing between 48% and 60% annually, the company is on target to achieve even higher growth in 2023. Centiel expects to register over 70% growth in the next two years (significantly higher than the market growth). The company's growth aspirations are backed by various factors, including its continuously expanding channel partner network, expanding product portfolio, ongoing investments in manufacturing facilities, sales and marketing team, and post-sales support infrastructure.

Conclusion

With its CumulusPower™ and StratusPower™ offerings, Centiel delivers the highest levels of power availability (99.9999999%), efficiency (up to 97.6%), and easy serviceability capabilities. Moreover, the recently launched StratusPower™ offers an unmatched design life of 30+ years to address the mission-critical infrastructure space's emerging sustainability concerns. Centiel stands out from competitors based on its commitment to innovation and creativity while achieving commercial success. In addition to its market-driven innovation, the company's collaborative, partner-focused approach drives the acquisition of new channel partners while retaining its existing network. As a result, Centiel expects to continue its strong growth trajectory, aiming to register over 70% growth in the next two years.

With its strong overall performance, Centiel earns Frost & Sullivan's 2023 Global Technology Innovation Leadership Award in the Global UPS industry.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Leadership Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

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

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

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

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO’s growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at <http://www.frost.com>.

The Growth Pipeline Engine™

Frost & Sullivan’s proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

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Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

