



*Eaton Power Quality Pvt Ltd Recognized for*

**2021**

**Technology Innovation Leadership**

Indian UPS as a Reserve (UPSaaS)

for DataCenter Application

*Excellence in Best Practices*

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## Background and Company Performance

### *Industry Challenges*

The UPS and battery segment account for 16% to 18% of the Indian power backup solutions market. The critical IT infrastructure across the data center environment requires power quality and power management with easy adaptability and flexibility without compromising on the reliability of the power module. The number of colocation or third-party data centers has greatly increased in the past few years because of the higher number of enterprises that depend on several large-scale applications that use the resources of multiple clouds. India is one of the fastest-growing (second largest) data center markets worldwide, growing at a compound annual growth rate (CAGR) between 7% and 8%, with regular investments in data center infrastructure from end-user segments such as IT/ITes; banking, financial services, and insurance (BFSI); and retail. In CY 2019, approximately 0.7 million square feet of data center space was utilized by third-party service providers; approximately 3.5 million square feet of data center space will be added by 2023. The growing data center infrastructure in the country, which requires 100% uptime, has created the need for UPS suppliers to offer innovative power backup solutions.

Space is very premium for data centers in India and with more data centers to be built in the future, land costs will continue to increase and power requirements will double. Currently, Indian data centers have 250 to 300 MW of power and this is expected to grow to 550 to 600 MW by 2025. As per industry experts, it is estimated that by 2027, data centers across the globe will account for 3% of the global energy use and 2% of greenhouse gases and consume 3 times more power than the current consumption levels. Hence, it is important for data centers to adopt renewable energy for power requirements, but renewable energy production is more volatile and production is difficult to predict, which makes it challenging for energy suppliers to balance production and load demand power supply. Data centers can play a role in helping energy suppliers maintain power quality by balancing the generation of power and its consumption.

### *Technology Leverage and Business Impact*

Founded in 1911, Eaton® has developed an industry-first data center solution using UPS-as-a-reserve (UPSaaS), which lets organisations not only use UPS as a backup system but also use it as a solution to earn from their UPS investment. This concept developed by Eaton is referred to as The Eaton® EnergyAware UPS which combines tried-and-true UPS technology with advanced energy storage functions. EnergyAware UPS, which is unique and first in the segment, helps the data center to control its energy requirement by choosing how much capacity to offer to the grid, when to offer it, and at what price. The Eaton EnergyAware UPS solution enable data centers to contribute to renewable energy and also earn from their UPS investments.

### **Commitment to Innovation**

Competing UPS solutions in the market do not help data center companies earn from their backup solution investments. EnergyAware is an industry-first, technology from Eaton where the investment in a UPS will help companies earn money by helping the energy

suppliers balance sustainable energy demands. This solution designed by Eaton enables data centers to contribute to green energy by balancing the power grids using batteries instead of using diesel-powered solutions.

Unlike competitors, Eaton is a trendsetter in terms of product innovation and development. It has helped companies in India by delivering value from solutions in terms of reliability, uptime, efficiency, cost-saving, and good return on investment. This innovative solution is developed for global data centers and has been adapted for the Indian market accordingly.

### **Commitment to Creativity**

Eaton India's competitors have yet to offer an innovative UPS solution for data centers that will support the adoption of renewable energy and reduce the volatility in the power grid by using renewable energy. Eaton designed this solution keeping the customer requirement in mind to cater to 15-20 mins backup required. Eaton has designed the threshold level of 7 mins backup for critical load and balance 7-8 mins for transferring to the grid. Hence, Eaton has been creative compared to their competitors in developing and adapting themselves to the technology, which is demanding significant transformation since the demand pattern of the end customers is changing. Eaton India has started to pitch this concept to Indian customers and has received customer feedback on the perceived creativity and value it can offer.

### **Technology Incubation**

As a product brand, understanding customers and their needs are essential, and Eaton leveraged robust research and development when creating the EnergyAware UPS technology for data centers to contribute to renewable energy and earn from the investments.

For example, in renewable energy production, if the balance cannot be maintained between production and load demand, it leads to frequency variations and power blackout. Thus, Eaton designed a solution using UPS that can support the grid to prevent power blackouts and also by promoting data centers to adapt to renewables to reduce the volatility in the grids.

### **Operational Efficiency**

Unlike its competitors, Eaton has been the preferred brand globally for technology innovations for backup solutions. Eaton has always made sure to continuously gather customer feedback to innovate new products and solutions to address the customer requirements by upgrading its manufacturing capabilities to meet future demands.

Eaton's EnergyAware UPS works as a part of virtual power plant to enable data centers to stabilize stabilize the grid. The solution is installed with an EnergyAware kit that will be installed with UPS to regulate demand from the grid and also for upstream and downstream charging to discharging the battery back to the grid. Energy suppliers will compensate the data center companies/operators for restraining energy consumption when required to maintain the grid frequency and contributing to green energy, thus

generating revenue from their UPS investments. As per Eaton estimates, Data Centers could receive incentives to provide their non-used capacity to the tune of approx. \$ 60,000 per MW / per year.

### **Customer Acquisition**

Eaton's management has taken multiple steps to enhance the product experience by offering innovative UPS solutions that are specific for data center applications, unlike competitors that offer similar products across all segments that only meet the requirement of power back and do not allow customers to earn from their investments. Moreover, Eaton has grown its power quality business by developing innovative products and solutions and also through the strategic acquisition of companies.

Eaton has created EnergyAware UPS technology with a disruptive approach considering its customers at the highest priority to meet or exceed their needs and pain areas. The company not only continuously enhances its technical offerings but also is very proactive in terms of its approach to problem-solving, thus retaining and valuing long-term relationships with the highest level of client satisfaction.

### **Growth Potential**

Unlike its competitors, Eaton India considers the EnergyAware UPS as a key service offering in its UPS portfolio. The company specifically emphasizes the leading-edge technology that guarantees the earnings from a UPS investment and helps contribute to the green environment as a key USP from the offering.

With this innovation in place, Eaton India is expected to continue acquiring more customers for EnergyAware UPS across data centers in India.

Eaton India has a defined pricing strategy based on a unique value proposition offered to customers, compared to the competition. The EnergyAware UPS is a new solution in the Indian market and is currently in the commercialization stage for many existing and prospective data centers. With a large customer base, Eaton India is confident it will lead this market in the future. Overall, the launch of UPSaaS has established Eaton as a technology leader offering innovative solutions to data center applications.

## *Conclusion*

In India, the colocation/third-party data center market is growing at a CAGR between 7% and 8%, raising the utilization levels of servers and leading to the increase in power requirements and heat levels of data centers. Data centers can support the adoption of renewable energy by reducing the volatility from using renewable energy in the power grid.

Eaton's industry-first UPS-as-a-Reserve or UPSaaS solution – EenergyAware is designed for data center applications that let the data center operators or organizations earn from their UPS investment controlling their power requirement. EnergyAware technology is effective and can be used in any high capacity IT load whether its Datacenter or Industrial or a manufacturing unit

Eaton's EnergyAware UPS solution enables the data centers to contribute to renewable energy and increase the green production by providing more flexibility to the grid.

With its outstanding commitment to innovation, high-value solutions, and thought leadership, Eaton Power Quality Pvt Ltd has earned Frost & Sullivan's 2021 Technology Innovation Leadership in the Indian UPS industry as a reserve system for data centers.

## Significance of Technology Innovation Leadership

Technology-rich companies with strong commercialization strategies benefit from the demand for high-quality, technologically innovative products that help shape the brand, resulting in a strong, differentiated market position.



## Understanding Technology Innovation Leadership

Technology innovation leadership recognizes companies that lead the development and successful introduction of high-tech solutions to customers' most pressing needs, altering the industry or business landscape in the process. These companies shape the future of technology and its uses. Ultimately, success is measured by the degree to which a technology is leveraged and the impact it has on growing the business.

## Key Benchmarking Criteria

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated 2 key factors (Technology Leverage and Business Impact) according to the criteria identified below.

### Technology Leverage

- Criterion 1: Commitment to Innovation
- Criterion 2: Commitment to Creativity
- Criterion 3: Technology Incubation
- Criterion 4: Commercialization Success
- Criterion 5: Application Diversity

### Business Impact

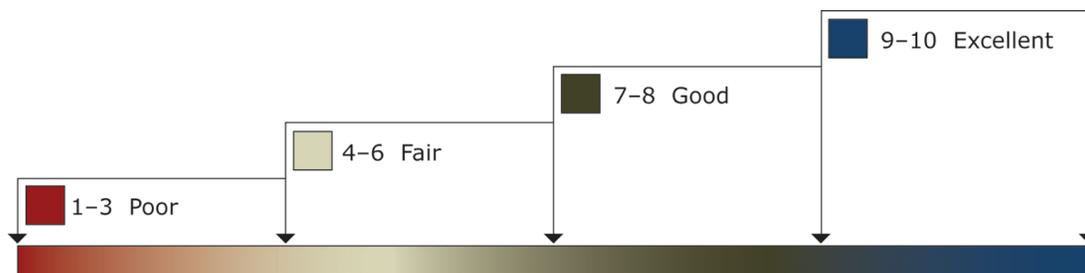
- Criterion 1: Financial Performance
- Criterion 2: Customer Acquisition
- Criterion 3: Operational Efficiency
- Criterion 4: Growth Potential
- Criterion 5: Human Capital

## Best Practices Award Analysis for Eaton Power Quality Pvt Ltd

### Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows research and consulting teams to objectively analyze performance according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

#### RATINGS GUIDELINES



The Decision Support Scorecard considers Technology Leverage and Business Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, Frost & Sullivan has chosen to refer to the other key participants as Competitor 1 and Competitor 2.

| <i>Measurement of 1-10 (1 = poor; 10 = excellent)</i> |                     |                 |                       |
|---|---------------------|-----------------|-----------------------|
| <b>Technology Innovation Leadership</b>               | Technology Leverage | Business Impact | <b>Average Rating</b> |
| <b>Eaton Power Quality PVT LTD</b>                    | <b>9.5</b>          | <b>8.5</b>      | <b>9.00</b>           |
| Competitor 1  | 8.0                 | 8.0             | 8.00                  |
| Competitor 2  | 7.0                 | 6.5             | 6.75                  |

### *Technology Leverage*

#### **Criterion 1: Commitment to Innovation**

Requirement: Conscious, ongoing development of an organization’s culture that supports the pursuit of groundbreaking ideas through the leverage of technology.

#### **Criterion 2: Commitment to Creativity**

Requirement: Employees rewarded for pushing the limits of form and function by integrating the latest technologies to enhance products.

#### **Criterion 3: Technology Incubation**

Requirement: A structured process with adequate investment to incubate new technologies developed internally or through strategic partnerships.

#### **Criterion 4: Commercialization Success**

Requirement: A proven track record of commercializing new technologies by enabling new products and/or through licensing strategies.

#### **Criterion 5: Application Diversity**

Requirement: The development of technologies that serve multiple products, multiple applications, and multiple user environments.

### *Business Impact*

#### **Criterion 1: Financial Performance**

Requirement: Overall financial performance is strong in terms of revenue, revenue growth, operating margin, and other key financial metrics.

#### **Criterion 2: Customer Acquisition**

Requirement: Overall technology strength enables acquisition of new customers, even as it enhances retention of current customers.

#### **Criterion 3: Operational Efficiency**

Requirement: Staff is able to perform assigned tasks productively, quickly, and to a high quality standard.

**Criterion 4: Growth Potential**

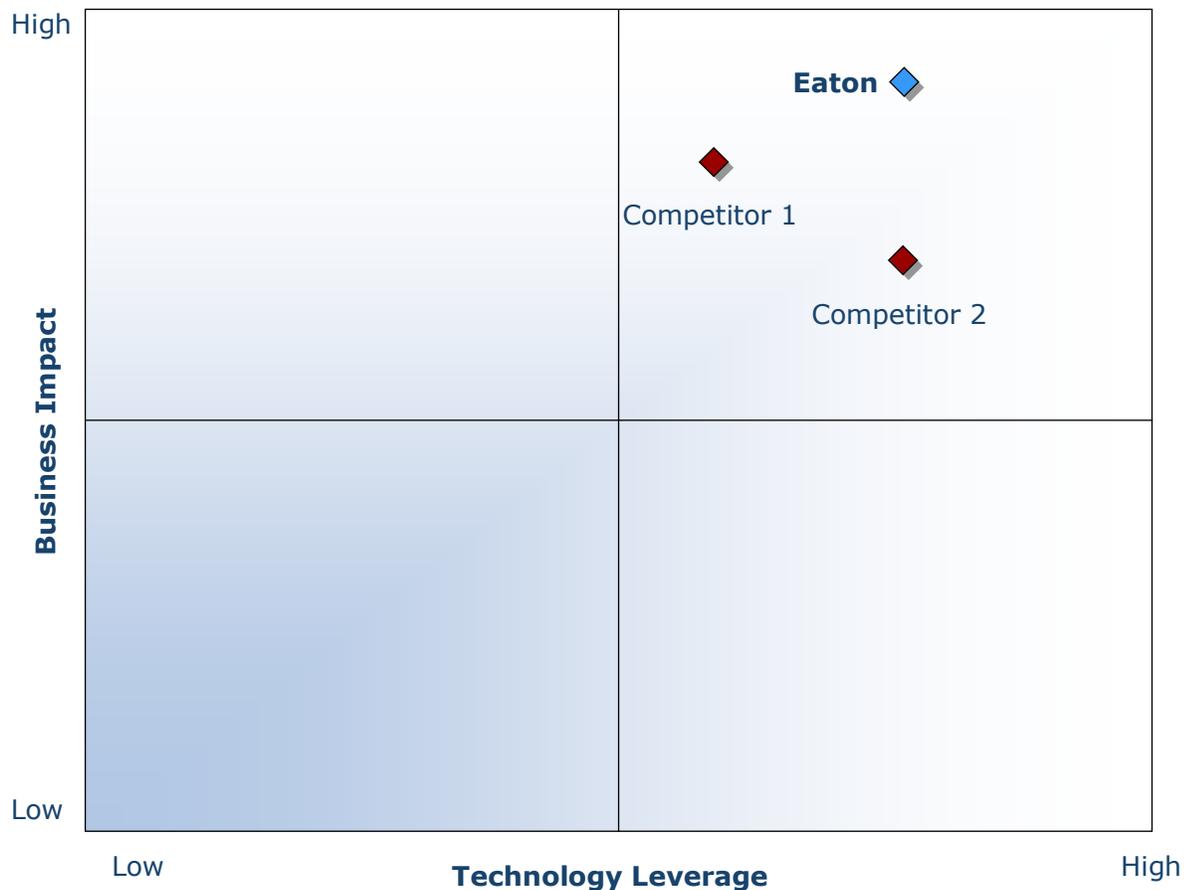
Requirements: Technology focus strengthens brand, reinforces customer loyalty, and enhances growth potential.

**Criterion 5: Human Capital**

Requirement: Company culture is characterized by a strong commitment to customer impact through technology leverage, which enhances employee morale and retention.

*Decision Support Matrix*

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



## Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate award candidates and assess their fit with select best practices criteria. The reputation and integrity of the awards are based on close adherence to this process.

| STEP  | OBJECTIVE   | KEY ACTIVITIES   | OUTPUT   |
|---|---|--|--|
| 1<br><b>Monitor, target, and screen</b>                 | Identify award recipient candidates from around the world                           | <ul style="list-style-type: none"> <li>• Conduct in-depth industry research</li> <li>• Identify emerging industries</li> <li>• Scan multiple regions</li> </ul>  | Pipeline of candidates that potentially meet all best practices criteria                         |
| 2<br><b>Perform 360-degree research</b>                 | Perform comprehensive, 360-degree research on all candidates in the pipeline        | <ul style="list-style-type: none"> <li>• Interview thought leaders and industry practitioners</li> <li>• Assess candidates' fit with best practices criteria</li> <li>• Rank all candidates</li> </ul>   | Matrix positioning of all candidates' performance relative to one another                        |
| 3<br><b>Invite thought leadership in best practices</b> | Perform in-depth examination of all candidates                                      | <ul style="list-style-type: none"> <li>• Confirm best practices criteria</li> <li>• Examine eligibility of all candidates</li> <li>• Identify any information gaps</li> </ul>                            | Detailed profiles of all ranked candidates   |
| 4<br><b>Initiate research director review</b>           | Conduct an unbiased evaluation of all candidate profiles                            | <ul style="list-style-type: none"> <li>• Brainstorm ranking options</li> <li>• Invite multiple perspectives on candidates' performance</li> <li>• Update candidate profiles</li> </ul>                   | Final prioritization of all eligible candidates and companion best practices positioning paper   |
| 5<br><b>Assemble panel of industry experts</b>          | Present findings to an expert panel of industry thought leaders                     | <ul style="list-style-type: none"> <li>• Share findings</li> <li>• Strengthen cases for candidate eligibility</li> <li>• Prioritize candidates</li> </ul>  | Refined list of prioritized award candidates   |
| 6<br><b>Conduct global industry review</b>              | Build consensus on award candidates' eligibility                                    | <ul style="list-style-type: none"> <li>• Hold global team meeting to review all candidates</li> <li>• Pressure-test fit with criteria</li> <li>• Confirm inclusion of all eligible candidates</li> </ul> | Final list of eligible award candidates, representing success stories worldwide                  |
| 7<br><b>Perform quality check</b>                       | Develop official award consideration materials                                      | <ul style="list-style-type: none"> <li>• Perform final performance benchmarking activities</li> <li>• Write nominations</li> <li>• Perform quality review</li> </ul>                                     | High-quality, accurate, and creative presentation of nominees' successes                         |
| 8<br><b>Reconnect with panel of industry experts</b>    | Finalize the selection of the best practices award recipient                        | <ul style="list-style-type: none"> <li>• Review analysis with panel</li> <li>• Build consensus</li> <li>• Select recipient</li> </ul>  | Decision on which company performs best against all best practices criteria                      |
| 9<br><b>Communicate recognition</b>                     | Inform award recipient of recognition   | <ul style="list-style-type: none"> <li>• Announce award to the CEO</li> <li>• Inspire the organization for continued success</li> <li>• Celebrate the recipient's performance</li> </ul>                 | Announcement of award and plan for how recipient can use the award to enhance the brand          |
| 10<br><b>Take strategic action</b>                      | Upon licensing, company is able to share award news with stakeholders and customers | <ul style="list-style-type: none"> <li>• Coordinate media outreach</li> <li>• Design a marketing plan</li> <li>• Assess award's role in strategic planning</li> </ul>                                    | Widespread awareness of recipient's award status among investors, media personnel, and employees |

## The Intersection between 360-Degree Research and Best Practices Awards

### Research Methodology

Frost & Sullivan’s 360-degree research methodology represents the analytical rigor of the research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan’s research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, resulting in errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry players and for identifying those performing at best-in-class levels.

### 360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



## About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, helps clients accelerate growth and achieve best-in-class positions in growth, innovation, and leadership. The company's Growth Partnership Service provides the CEO and the CEO's growth team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages nearly 60 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on 6 continents. To join Frost & Sullivan’s Growth Partnership, visit <http://www.frost.com>.