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Background and Company Performance

Industry Challenges

The APAC UPS industry presents a highly competitive landscape where one of the key challenges for a UPS manufacturer is to truly differentiate itself from its other competitors. End user needs and requirements on backup power are evolving with the technology advancements across multiple end user verticals, more so in mission critical applications. Society is in a day and age where end users consider product reliability as a given - rather than a requirement.

It is quite important for a manufacturer to keep up with new technologies and industry trends and come up with UPS solutions that cater to the growing needs of businesses. The power demand has been on a constant rise in the recent past and is a major area of concern for all end-user applications, especially those which have critical loads such as data centres. Energy saving is one of the key challenges for the end users of UPS systems. Especially in the data center segment, the main focus is on improving PUE (Power Usage Effectiveness), while being flexible enough to cope with their constantly evolving needs. Frost & Sullivan notes that this is mainly driven by rising energy bills, environmental constraints, and the increase in power density.

Customer Impact and Business Impact

Match to needs

Eaton’s deep understanding of end user needs and specific requirements is the foundation of its product development process. The company’s excellence in the UPS market can primarily be attributed to its ability to develop products that perfectly align not only with customers’ current expectations, but also anticipated future requirements, as its product designs are directly inspired and influenced by evolving customer needs. Frost & Sullivan appreciates how Eaton is always ahead of the competition when it comes to identifying/analyzing market trends and developing products and solutions that effectively address customer pain points and unmet needs; ultimately enhancing customer value.

Eaton’s “PredictPulse” was born out of this initiative; it is a highly innovative cloud-based analytics service for data center infrastructure that offers the ability to predict the failure of power components. It comes as a perfect complement to Eaton’s next generation remote monitoring service, thus shifting power monitoring from a reactive to a proactive model. It leverages automated and expert human processes to not only continuously monitor/analyze the health of the power infrastructure, but also to take pre-emptive actions to eliminate outages and performance degradation. It collects/analyzes data on ongoing health and efficiency of the UPS system including voltages, loads, energy savings, service level and external factors such as temperature and humidity. Furthermore, it also provides information on batteries and system availability. Simply put, it increases system efficiency, reduces risk of component failures and downtime, reduces total cost of ownership, saves time by expediting repairs through real time data analysis, and ultimately offers complete peace of mind to the end user.
Excellent Product/Service Value

Eaton places tremendous emphasis on three core aspects of its product development process: quality, reliability and efficiency. Its solutions are embedded with a wide range of features and functionalities that enhance end user value multi-fold where most of these features are unique in the industry. Its innovation excellence has catapulted it significantly in the technology curve, placing it way ahead of its competitors. The company’s best-in-class strategy implementation is characterized by processes, tools, and activities that generate a consistent and repeatable level of success.

Frost & Sullivan finds Eaton’s meticulous R&D efforts to maximize UPS energy efficiencies without compromising reliability highly commendable. It has developed advanced technologies embedded with cutting edge designs that empower end users to fully optimize UPS performance and protection, thereby offering excellent financial and environmental gains. The “Variable Management Module System” (VMMS) is a perfect testament to demonstrate its success in this regard. Even though the double conversion is regarded as the most reliable UPS topology, it does pose efficiency related challenges. It is a known fact that UPS system efficiencies are significantly lower at lighter loads, and the majority of the systems operate at less than 60% of full load; as such, the costs associated with loss of efficiency increases significantly. Eaton’s VMMS technology is the perfect solution to address this energy efficiency conundrum associated with the double conversion topology. It optimizes overall system efficiencies even at low load levels; it achieves this by automatically optimizing the system according to actual load levels. In essence, it maintains redundancy and achieves higher efficiency by intelligently controlling the load levels of the uninterruptible power modules (UPMs). It is designed to execute real-time, predictive algorithms that identify pending and future changes in direction and magnitude of supply, demand voltages and current.

The way it senses and calculates the exact amount of power required to support the load levels (thereby deploying the optimum number of UPMs) is clearly noteworthy. It essentially sets the redundant power modules to ready state, and the power modules that actually drive the load do so with higher efficiency. The calculation to identify the optimum number of UPMs is performed according to the VMMS load threshold of each UPM (80 percent by default) and the system configuration, including redundancy requirements. On the other hand, Frost & Sullivan notes that the system is designed to automatically detect any load increase, where it shifts the load onto the additional modules (UPMs in ready state) immediately. This transition happens in in less than two milliseconds by connecting the existing PWM signals to the IGBT gates. Furthermore, it offers extensive configurability options to the end users, as the system is designed to adapt to both single UPS consisting of multiple power modules and multiple UPS parallel system.

Industry Leading Breadth and Scalability of Product Line

Eaton’s vast technology know-how and manufacturing expertise in power electronics has allowed it to create an industry leading UPS product family, specifically designed to enhance customer value multi-fold. Frost & Sullivan finds Eaton’s manufacturing
excellence second to none. The company has gone to great lengths to ensure product quality of the highest magnitude by leveraging cutting edge processes and tools in its manufacturing facilities. It offers an industry leading UPS portfolio that addresses the entire breadth of customer needs and applications ranging from domestic use to home offices through to factories, utilities, data centres, and so on. It offers products at a variety of price points and functionality levels. Eaton’s comprehensive range of UPS systems includes single phase and three phase solutions.

One of the unique differentiating aspects that set Eaton apart from its competitors is its product positioning strategy. The company constantly strives to update its product portfolio with new design aspects to come up with multiple models, versions, and technologies for various power ranges, so that its customers have the flexibility to choose a UPS that perfectly fit their needs - without having to compromise on any minor detail. Frost & Sullivan recognizes and identifies this as a unique competitive edge for Eaton. The other interesting aspect that further compliments its product positioning strategy is its varied go-to market approaches. It employs a targeted approach by thoroughly studying and analyzing customer buying behavior in different product segments; thereby employing the best possible go-to market strategy for individual segments.

It is intriguing to see Eaton’s constant efforts to develop multiple lines of tower and modular UPS systems, with the sole intention to bring more advanced, efficient, and reliable solutions to the market. It is noteworthy that the company has launched 9 three-phase UPS products in the past 2 years which have been well received in the industry. New product launches include 93E STD, 93ET, 93E HE, 3C3 Pro, 93PR 75kW, 3A3 PT, 91PS, 93PS and 9395 Mono. Apart from these new product launches, Eaton has plans to launch its highly innovative “EnergyAware” UPS technology in the APAC region in the near future. This unique technology represents an amalgamation of tried-&-tested UPS technology and advanced energy storage functions. It offers a unique value proposition of protecting valuable equipment from power disturbances, while leveraging UPS batteries to reduce facility operating costs and/or creating new revenue streams. Frost & Sullivan believes that this will further strengthen Eaton’s leadership position in customer value enhancement.

Outstanding Customer Ownership Experience

Frost & Sullivan observes how Eaton offers industry leading customer ownership experience throughout the life cycle. There are two important factors when it comes to providing an excellent ownership experience: product performance and client relationship. Eaton clearly excels at both. The company’s relationship with the customer has been one of its key success factors in building and maintaining a positive experience, resulting in a lasting bond. This is evident from its constantly increasing list of orders and positive customer testimonials. Eaton’s unique two pronged approach towards customer engagement is a crucial element that ensures product development and innovation matches market and customer needs. The first approach involves a Customer Advisory Board, where it obtains unfiltered customer feedback to identify opportunity areas, as well as success factors. This is leveraged directly in to the company’s action plans/product
development efforts, ultimately leading to continued performance improvements. The other approach involves a more intimate face-to-face interview process with key decision-makers and influencers among its strategic customers; these are called Customer Relationship Reviews (CRR). These specifically designed CRR interviews enable Eaton to obtain a holistic view on customer perceptions, thus allowing it to perform in-depth self-evaluation and develop appropriate action plans to further strengthen the bond with its customers.

Eaton offers a widespread suit of features that not only ensure seamless UPS capacity expansion and optimum operation, but also simplifies maintenance, minimizes down time, and decreases mean time between failure (MTBF) and mean time to repair (MTTR). Furthermore, the company’s excellence in striking a perfect balance between price and performance value is highly commendable. Given that efficiency is of paramount importance to end users, Eaton’s employs a highly innovative “Energy Saver System” (ESS), which substantially increases the UPS operating efficiency while still offering reliability of the highest magnitude. The ESS is capable of offering a staggering 99% efficiency irrespective of the load size. Compared to traditional UPS systems in the market, the ESS offers efficiency improvements by as much as 5 percentage points at higher load levels (94% vs 99%), whereas at lower loads the efficiency improvements it offers is nothing short of dramatic. This is a truly remarkable achievement. The ESS employs an “intelligent power core,” which is designed to constantly monitor incoming power conditions so that it can deliver clean power to the load, while operating at extremely high efficiency levels. The intelligent power core leverages cutting edge detection and control algorithms that execute two critical functions – 1) it allows safe provision of mains current directly to load when the input is within the acceptable limits by its voltage and frequency and 2) automatically changes modes and engages power converters in less than two milliseconds when it senses a change in power conditions (when utility source goes out of pre-defined limits by its voltage or frequency). Simply put, the ESS constantly monitors incoming power conditions and balances the need for efficiency with the need for premium protection, to match the conditions of the moment.

**Brand Equity**

Eaton’s brand name is synonymous with technology excellence, innovation, and most importantly, customer focus. Its product positioning has played a crucial role in its brand equity; it has created a sense of excitement amongst its customers who are in pursuit of engaging with future technologies to enhance their overall user experience. It has gained a reputation of delivering services and solutions of the highest standard that specifically addresses customers’ unmet needs. Eaton’s tremendous effort towards building and strengthening brand equity is clearly evident in the company’s year on year revenue growth, where it has been constantly achieving above market growth rates. It is also characterized by its intimate relationship with its partners and customers.

The company operates under two brands in APAC – Eaton and Santak. It leverages Santak’s strength in mainstream market for small/medium power rating (up to 200kVA) and in channel sales. Whereas the Eaton brand is targeted at the premium market with
focus on medium and large power rating (20kVA-1.5MW), more specifically covering the project based data center business. This dual brand strategy in the region has been highly successful thus far and will continue to be a critical aspect driving its brand equity to further heights.

**High Growth Potential**

Eaton has been consistently registering above market average year-on-year growth rates for the past two years, especially on the three phase product segment, where it has been growing its revenues at twice the rate of average market growth. Frost & Sullivan’s research findings suggest that the company has high potential to further strengthen its position in the market with its cutting edge UPS solutions, enabled by its long-range, macro-level innovation strategies.

As a result of its meticulous mega trend scenario analysis and a core focus on reliability, quality and efficiency, Eaton has been able to develop products that not only satisfies the current needs, but also addresses anticipated future needs of the end user. The company’s meticulous effort towards constant product developments and technology enhancements aimed at customer value enrichment is highly commendable. It is also one of its critical success factors driving its high customer acquisition potential. Its new product launches and developments over the past 12 to 18 months is a vivid testament to this.

**Conclusion**

Frost & Sullivan concludes that Eaton has tremendous focus on product development, innovation, technology and operational efficiencies. These key factors have led to its leadership position in the APAC UPS market. The company’s commitment to its customers is highly commendable, where it brings value addition to them not just from a product perspective, but also from a process perspective. Eaton’s meticulous focus and dedication towards enhancing customer value is truly unparalleled and is a key trait that will catapult it to further heights in the near future.

With its strong overall performance, Eaton has earned the 2020 Frost & Sullivan Customer Value Leadership Award.
Significance of Customer Value Leadership
Ultimately, growth in any organization depends on customers purchasing from a company and then making the decision to return time and again. Satisfying customers is the cornerstone of any successful growth strategy. To achieve this, an organization must be best in class in 3 key areas: understanding demand, nurturing the brand, and differentiating from the competition.

Understanding Customer Value Leadership
Customer Value Leadership is defined and measured by 2 macro-level categories: Customer Impact and Business Impact. These two sides work together to make customers feel valued and confident in their products’ quality and performance. This dual satisfaction
translates into repeat purchases and a lifetime of customer value.

**Key Benchmarking Criteria**

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated Customer Impact and Business Impact according to the criteria identified below.

**Customer Impact**
- Criterion 1: Match to Needs
- Criterion 2: Product/Service Value
- Criterion 3: Breadth and Scalability
- Criterion 4: Customer Ownership Experience
- Criterion 5: Brand Equity

**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**

**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 Customer Impact 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.

<table>
<thead>
<tr>
<th>Measurement of 1–10 (1 = poor; 10 = excellent)</th>
<th>Customer Impact</th>
<th>Business Impact</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Value Leadership</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eaton</td>
<td>9.0</td>
<td>8.0</td>
<td>8.5</td>
</tr>
<tr>
<td>Competitor 1</td>
<td>7.0</td>
<td>6.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Competitor 2</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Customer Impact**

**Criterion 1: Match to Needs**
Requirement: Customer needs directly influence and inspire the design and positioning of the product family.

**Criterion 2: Product/Service Value**
Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

**Criterion 3: Breadth and Scalability**
Requirement: Product line addresses the full range of customer needs and applications. Product line offers products at a variety of price points and functionality levels.

**Criterion 4: Customer Ownership Experience**
Requirement: Customers are proud to own the company’s product or service and have a positive experience throughout the life of the product or service.

**Criterion 5: Brand Equity**
Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

**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: Customer-facing processes support the efficient and consistent 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: Customer focus strengthens brand, reinforces customer loyalty, and enhances growth potential.

**Criterion 5: Human Capital**
Requirement: Company culture is characterized by a strong commitment to quality and customers, which in turn 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.

<table>
<thead>
<tr>
<th>STEP</th>
<th>OBJECTIVE</th>
<th>KEY ACTIVITIES</th>
<th>OUTPUT</th>
</tr>
</thead>
</table>
| 1 Monitor, target, and screen | Identify Award recipient candidates from around the world | • Conduct in-depth industry research  
• Identify emerging industries  
• Scan multiple regions | Pipeline of candidates that potentially meet all best practices criteria |
| 2 Perform 360-degree research | Perform comprehensive, 360-degree research on all candidates in the pipeline | • Interview thought leaders and industry practitioners  
• Assess candidates’ fit with best practices criteria  
• Rank all candidates | Matrix positioning of all candidates’ performance relative to one another |
| 3 Invite thought leadership in best practices | Perform in-depth examination of all candidates | • Confirm best practices criteria  
• Examine eligibility of all candidates  
• Identify any information gaps | Detailed profiles of all ranked candidates |
| 4 Initiate research director review | Conduct an unbiased evaluation of all candidate profiles | • Brainstorm ranking options  
• Invite multiple perspectives on candidates’ performance  
• Update candidate profiles | Final prioritization of all eligible candidates and companion best practices positioning paper |
| 5 Assemble panel of industry experts | Present findings to an expert panel of industry thought leaders | • Share findings  
• Strengthen cases for candidate eligibility  
• Prioritize candidates | Refined list of prioritized Award candidates |
| 6 Conduct global industry review | Build consensus on Award candidates’ eligibility | • Hold global team meeting to review all candidates  
• Pressure-test fit with criteria  
• Confirm inclusion of all eligible candidates | Final list of eligible Award candidates, representing success stories worldwide |
| 7 Perform quality check | Develop official Award consideration materials | • Perform final performance benchmarking activities  
• Write nominations  
• Perform quality review | High-quality, accurate, and creative presentation of nominees’ successes |
| 8 Reconnect with panel of industry experts | Finalize the selection of the best practices Award recipient | • Review analysis with panel  
• Build consensus  
• Select recipient | Decision on which company performs best against all best practices criteria |
| 9 Communicate recognition | Inform Award recipient of Award recognition | • Present Award to the CEO  
• Inspire the organization for continued success  
• Celebrate the recipient’s performance | Announcement of Award and plan for how recipient can use the Award to enhance the brand |
| 10 Take strategic action | Upon licensing, company is able to share Award news with stakeholders and customers | • Coordinate media outreach  
• Design a marketing plan  
• Assess Award’s role in strategic planning | 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 participants and for identifying those performing at best-in-class levels.

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 practices 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.