



MarelliMotori
Inspired solutions

2018 Global Generator Company of the Year Award
Company of the Year Award

FROST & SULLIVAN

2018 BEST PRACTICES AWARD

GLOBAL GENERATOR
COMPANY OF THE YEAR AWARD

2018
BEST PRACTICES
AWARDS

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Background and Company Performance

Industry Challenges

The generator set (genset) industry, comprising of diesel and gas gensets form the key components of the distributed power market globally. Mainly used in back up or primary power production, gensets are integral in fulfilling the power needs of industrial and commercial establishments. Stricter environmental regulations could lead to higher emission requirements from gensets leading to a change in technologies and types of gensets used. A reduction in subsidies for renewable energy sources also impacts the genset industry, as gensets are used as base load power source for renewable energy production. Companies are also facing intense competition from North American and Asian companies, leading to players having to innovate and offer unique tailor made solutions in order to survive and thrive in this market. Companies which are able to offer a combination of price, quality and reliability would be able to succeed under these tough market conditions. Political willingness will be a key driver in the market. As more companies take steps to reduce their carbon footprints, they are increasingly open to more environmentally-friendly options.

Visionary Innovation & Performance and Customer Impact

Excellence in Addressing Unmet Needs

Renowned for its generator design and manufacturing capabilities, Marelli Motori works in close proximity with its clients to build a comprehensive understanding of their individual needs and delivers the appropriate generator solution. In this highly competitive market, Marelli Motori was quick to identify the fact that offering high product quality and reliability wouldn't suffice to gain a competitive edge and to eventually emerge as the undisputed leader. Hence, it has aligned its business model to offer "Inspired solutions", integral to its value proposition strategy, wherein its team of proficient technical experts supports customers' right from choosing the best product that matches their specific needs for a particular project, to offering industry leading commissioning and maintenance services. The company does not only take meticulous efforts to analyze every single aspect of the end user application before recommending a solutions, but also goes the extra mile to educate its customers to enhance their knowledgebase and expertise. Frost & Sullivan finds this level of attention to detail highly unique and commendable. It provides complete peace of mind to its customers by making sure they no longer need to worry over reliability or performance related issues, and more importantly validation that they invested in the right product. In fact, Marelli Motori has built its product portfolio in such a way that it's able to perfectly address any service need of its customers for a plethora of applications, ranging from power generation, cogeneration and hydropower to marine and industrial.

On the other hand, Marelli Motori has comprehensive maintenance contracts in place for its customers to ensure proper functioning and performance of machines and offers round-the-clock technical assistance on request. By committing themselves to such contracts, customers are able to avoid the risk of serious system failures and sudden machine downtime, which significantly boosts customers' operational efficiency and productivity levels, and consequently, profitability and margins.

Visionary Scenarios Through Mega Trends

Marelli Motori takes tremendous efforts to gather market, business and competitive intelligence by leveraging specialist teams committed to unearthing new technology and market trends that are likely to shape future opportunities. It makes sure that its annual business strategy is always aligned with the globally emerging business trends, in an effort to stay at the forefront of competition. It's highly intriguing to see the synergies between its strategic marketing team, product marketing team and its product development team, working towards an end goal to translate market needs into opportunities through the delivery of cutting-edge products and solutions.

Identifying the growing demand for gensets to power data centres, Marelli Motori is building a line of synchronous generators designed to perfectly meet the specific configurations of data centres, and furthermore, to enhance the reliability of the data centre multifold. As we know, any genset running in parallel with the main grid has to be fully compliant with the international grid code regulations and that the last 8 years have witnessed remarkable transformation in grid codes, particularly in developed countries. When there is a fluctuation in grid conditions caused by a sudden fault, it imposes high levels of stress on the genset and the generator. Hence it is imperative to incorporate a highly advanced and cutting edge automatic voltage regulator (AVR) in order to automatically maintain generator output terminal voltage at a set value under varying load and operating temperature. The unique strength for Marelli Motori in this front is that it designs and manufactures its own digital AVRs, as opposed to the general market practice where genset manufacturers procure AVRs from third party electronic device manufacturers. Its highly integrated and robust AVRs are fully configurable and guarantee easy commissioning, monitoring and maintenance by leveraging proprietary HMI (human-machine interface) software. Furthermore, with its futuristic approach, Marelli Motori is designing a new innovative digital AVR to comply with the new grid code regulations that are anticipated to go in to effect by early 2019; Frost & Sullivan finds this visionary innovation highly commendable. While the strategy to build its own advanced AVR eliminates any interoperability issue between the generator and the AVR, it also empowers Marelli Motori to offer an industry leading, comprehensive warranty package on the generator. This gives Marelli Motori a distinctive competitive edge, not only in

terms of commercialization but also in terms of technology leadership over its competitors. Frost and Sullivan firmly believes that Marelli Motori's visionary approach towards product development and R&D strategy will enhance its position in the global genset market in the coming years.

Implementation of Best Practices

Currently Marelli Motori is focusing on developing high power density generators, characterized by enhanced performance efficiency for hydropower applications. Driven by its commitment to respond to customer needs, its research and development experts adopted the advanced multiphysics simulation approach to develop light-weight and compact electric generators that offer reliability and performance of the highest magnitude. One of the fitting examples of its implementation of best practices is the development of structured simulation procedures by acquiring the ANSYS platforms for structural, modal and thermo-fluid dynamics analysis to optimize the generator structure in every possible aspect.

By leveraging the ANSYS multiphysics software in conjunction with other cutting edge technologies, it performs structural analysis to evaluate technical feasibility to enhance system efficiency and mechanical reliability. This computational simulation eliminates the need for developing and running constant validation tests on physical prototypes, thereby optimizing time and accelerating production. It is highly intriguing to see the tremendous success Marelli Motori has achieved with hi-tech engineering simulation; its achievements in this space can be categorized into three facets;

- 1) Technical – Reduction in operating temperature of its generators by equal power; reduction in equipment weight, reducing the complexity of the structures (simplification).
- 2) Commercial – Achieving faster customer response times; lowering operational costs; lowering product capital costs.
- 3) Strategic – Enhanced product awareness and market competitiveness; enhanced synergies between project teams; leverage of vast know-how and pedigree.

On the other hand, Marelli Motori has achieved 15% weight reduction in its large sized gensets and its new line of 12 pole generators offer improved output power- from 8 MVA to 10 MVA. These attributes certainly make Marelli Motori's generators more powerful and affordable than competing products, translating into considerable cost savings for customers. It is also noteworthy that as a part of its future product strategy, Marelli Motori is also looking to adopt computer-

aided engineering (CAE) to enhance the quality of maintenance services it renders.

Outstanding Price/Performance Value

Characterized by unparalleled efficiency of over 98%, Marelli Motori's generators enable customers to keep energy costs under control without affecting performance quality and productivity even at various speed levels and partial load conditions. As a part of its manufacturing excellence, it leverages components and materials of the highest quality from internationally-renowned vendors. Its smart solutions significantly reduce system fault caused by mismanagement of the machine such as electrical separation of electronic detectors from live parts of the genset, mechanical protection from external welding particles etc. In an effort to further enhance the performance value of its products, Marelli Motori has developed a proprietary Vacuum Pressure Impregnation (VPI) process that perfectly seals the machine windings against vibration and moisture, ultimately leading to enhanced mechanical strength and reliability.

Furthermore, by introducing a novel set of rugged mechanical designs featuring RMS of over 16mm/sec, it ensures reliable operation of its products in extreme environmental conditions such as shock and vibration. Marelli Motori's standard generators can be swiftly assembled and integrated into customers' systems and are easy to maintain. They can be easily tailored with the option kits to suit customers' individual needs. The company has complete control over its entire supply chain owing to its production process being vertically integrated. Additionally, with its inherent design features and form factor of its standard products, it is able to cut down both material and transportation costs. Overall, all of this translates into outstanding price/performance value to the end user as it significantly reduces capital cost, greatly reduces TCO, while ensuring higher return on investment (ROI) enabled by the durability and high performance of the product.

Industry-leading Customer Ownership Experience

In its bid to enhance customers' ownership experience, Marelli Motori has been adopting the 'local-for-local' strategy. Its local presence through its subsidiaries strategically positions it to demonstrate fast responsiveness to the needs of locally-based customers. This also empowers Marelli Motori to effectively meet the growing needs in a particular region through the development of specific products matched to those exact needs. The company's customization excellence has been one of the key factors driving the adoption of its cutting-edge generators for diverse applications, including niche ones across diverse geographies. Marelli Motori's excellence in product innovation has empowered it to offer a unique design flexibility that supports the incorporation of last-minute changes in design

specifications and engineering. Its cost-effective serviceability of its electrical generators have been instrumental in delivering a highly satisfying customer ownership experience. The fact that its generators can be seamlessly retrofitted with devices on the field to enhance the quality of machine performance is one of the testaments to its industry leading value proposition.

Brand Equity

Marelli Motori has been gaining significant brand recognition over the past few years. The company has gained a reputation of delivering solutions, products, and services of a high standard that specifically addresses customers' unmet needs. Its top-notch generator design and engineering capabilities characterized by industry leading flexibility, reliability and efficiency coupled with outstanding pre and post-sales customer services has given it the competitive edge over its competitors in the global generator market. Having established its presence in over 120 countries of the world directly and through an extended network of distributors, sales representatives and service organizations, Marelli Motori is perfectly positioned as a global brand that is synonymous to high quality, reliability and performance. The Marelli Motori brand is also well known for establishing excellent customer relationships and ensuring "best in class" practices to distinguish itself in the industry. It is Frost & Sullivan's finding that end users perceive Marelli Motori as a reliable brand and trusted partner, and are proud to own its products.

Conclusion

Marelli Motori has tremendous focus on product development, innovation, technology and operational efficiencies. These key factors have led to its success in the global genset 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. It is Frost & Sullivan's finding that the Marelli Motori's meticulous focus and dedication towards enhancing customer value is unparalleled, and is a key trait that will catapult it to further heights in the near future.

For its strong overall performance, Marelli Motori has earned Frost & Sullivan's 2018 Company of the Year Award.

Significance of Company of the Year

To receive the Company of the Year Award (i.e., to be recognized as a leader not only in your industry, but among your non-industry peers as well) requires a company to demonstrate excellence in growth, innovation, and leadership. This kind of excellence typically translates into superior performance in three key areas: demand generation, brand development, and competitive positioning. These areas serve as the foundation of a company's future success and prepare it to deliver on the two criteria that define the Company of the Year Award (Visionary Innovation & Performance and Customer Impact).



Understanding Company of the Year

As discussed above, driving demand, brand strength, and competitive differentiation all play a critical role in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation & Performance to enhance Customer Impact.

Key Benchmarking Criteria

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated two key factors—Visionary Innovation & Performance and Customer Impact—according to the criteria identified below.

Visionary Innovation & Performance

- Criterion 1: Addressing Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Implementation Best Practices
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Financial Performance

Customer Impact

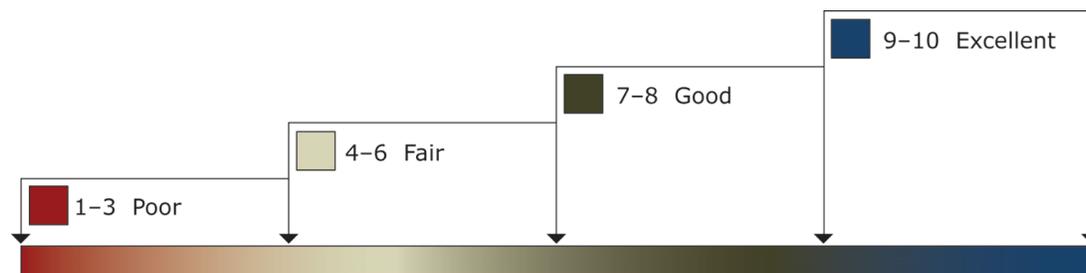
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for Marelli Motori

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 our 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 is organized by Visionary Innovation & Performance and Customer Impact (i.e., these are 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 chooses to refer to the other key participants as Competitor 2 and Competitor 3.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Company of the Year	Visionary Innovation & Performance	Customer Impact	Average Rating
Marelli Motori	9	9	9.0
Competitor 2	6	7	6.5
Competitor 3	5	5	5.0

Visionary Innovation & Performance

Criterion 1: Addressing Unmet Needs

Requirement: Implementing a robust process to continuously unearth customers’ unmet or under-served needs, and creating the products or solutions to address them effectively

Criterion 2: Visionary Scenarios through Mega Trends

Requirement: Incorporating long-range, macro-level scenarios into the innovation strategy, thereby enabling “first-to-market” growth opportunity solutions

Criterion 3: Implementation of Best Practices

Requirement: Best-in-class strategy implementation characterized by processes, tools, or activities that generate a consistent and repeatable level of success.

Criterion 4: Blue Ocean Strategy

Requirement: Strategic focus on creating a leadership position in a potentially “uncontested” market space, manifested by stiff barriers to entry for competitors

Criterion 5: Financial Performance

Requirement: Strong overall business performance in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

Criterion 2: Customer Purchase Experience

Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints.

Criterion 3: 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 4: Customer Service Experience

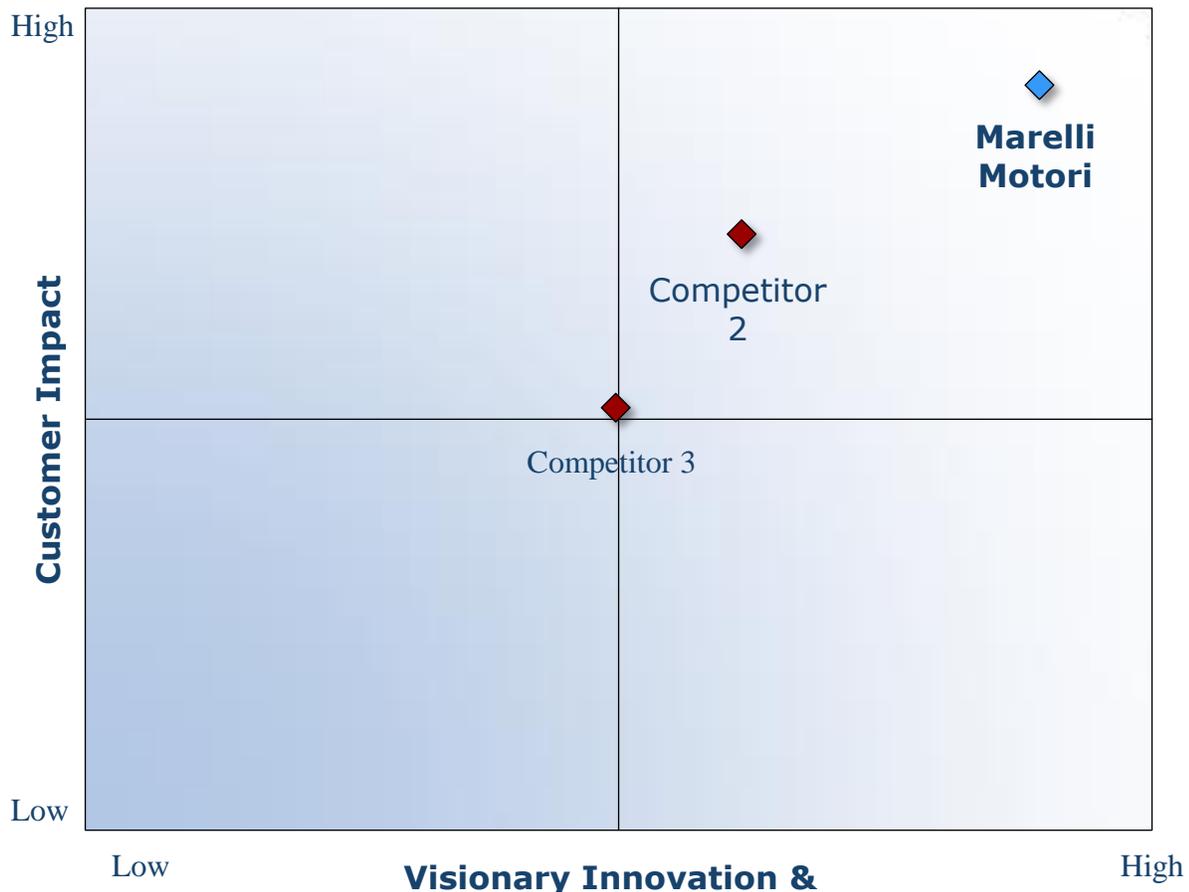
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

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

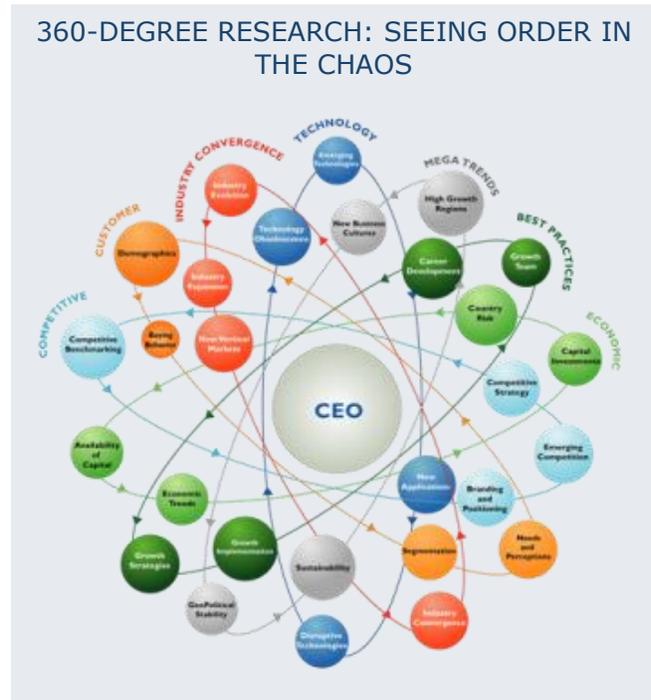
Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice 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	<ul style="list-style-type: none"> • Confirm best-practice 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	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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-practice Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select winner 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • 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 able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess Award's role in future 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 our 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, leading to 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, enables clients to 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 more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.