



2018 Global
Solar-powered Water Pumps
Product Line Strategy Leadership Award



2018
BEST PRACTICES
AWARDS

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Background and Company Performance

Industry Challenges

In recent years solar pumps, which draw water from the ground using energy from the sun, have become more mainstream. Unlike costly diesel or electric-powered conventional pumps, solar pumps present an economically viable and eco-friendly solution to meet increasing water demand globally. Additionally, the pumps are simple to install and have a smaller footprint that requires less operation and maintenance than traditional pumps. Over time, solar pumps can have massive impacts on communities by enabling affordable and efficient crop irrigation.

Once a novelty, the solar water pump market now attracts a full mix of products with differing price and quality levels. With a growing number of options, customers have access to solutions that meet their specific needs. As a result, the market is becoming increasingly fragmented and competitive. Innovation happens quickly in the solar pumps market, and those that wish to stay relevant must keep pace with their competitors, i.e., continuously improving their products to pump the greatest amount of water with the least amount of power.

Additionally, using solar water pumps involves a slew of risks and challenges. For instance, the technology often requires a significant amount of upfront capital. Although a wise investment in the long run, many communities simply do not have the funds to purchase a solar pump outright. Also, users must balance demand with supply. Pumping too much water too quickly will result in the need for storage, which can pose a problem for those who do not already have storage in place. Other problems include lack of skilled personnel, faulty installation, overuse of a water source, and theft of equipment.

Product Line Strength and Customer Impact of Bernt LORENTZ GmbH & Co KG

Founded in Hamburg, Germany in 1993 by a father-son team, LORENTZ began as a quest for two men to find a niche for their innovative technology. Specifically, the duo created a high-efficiency fuel pump that cut power usage to half the amount of its contemporaries. Although the pump performed well, the company realized it would be extremely difficult to penetrate the tightly controlled, risk-averse global petrochemicals market. LORENTZ decided to use the same design to pump water instead. Today, LORENTZ takes pride in producing the most extensive line of high-quality German-engineered solar-powered water pumps on the market. The company leverages 25 years of industry expertise to design and manufacture its products in-house and builds pumps that produce more water per given amount of power than any other pump on the global market.

Commonality, Durability, Accessibility, and Efficiency

LORENTZ's PS2 and PSk2 product lines support applications ranging from 100 watts (W) to 70 kW—the most extensive range in the industry—and have three main applications: drinking water, irrigation, and swimming pools. Unlike competitors that create product lines that work differently from one another, LORENTZ builds its products with identical installation and wiring procedures. No matter what size or shape a pump may be, once users learn the procedure for one pump, they never have to learn it again because LORENTZ designs all its pumps for commonality.

Also, LORENTZ designs its rugged products to operate off-grid for life. In the rare case of product malfunction, e.g., from sand buildup, LORENTZ holds a stock of spare parts for every product it manufactures. As a result, customers can order a part from a 20-year-old pump with no problem. To ensure consistent quality, LORENTZ undergoes regular auditing from *Technischer Überwachungsverein*, the German safety standards organization, the International Electrotechnical Commission, and Underwriters Laboratories. The company is also International Standard of Organization 9001 certified.

In 2013, LORENTZ introduced CONNECTED, a platform that enables end users to monitor and manage pumps remotely. Installed and configured on site using LORENTZ's proprietary Android™ application, PumpScanner, CONNECTED tracks performance data on pumps and turns it into actionable information for users. For a monthly fee, users can connect to a cloud based service, pumpMANAGER, which automatically adjusts pump parameters to optimize pump performance as necessary. The platform also offers level measurement integration capabilities, which measure how much water is in the ground and report back the information for analysis.

A hybrid SmartSolution can also be added on to bolster the system when solar power alone does not meet energy demands. For instance, during certain times of the year when there is less sunlight, there may not be enough electricity generated to maintain a water pump. A typical solution involves installing a battery system, which is expensive and inefficient. LORENTZ offers a way to blend external sources of energy only when necessary.

Partners, Not Dealers: The partner ADVANTAGE Program

LORENTZ has an excellent reputation in the solar water pumps market, having been present since the industry's pioneering days. Along the journey of the market's growth, LORENTZ's customer base grew to include 5,000 established pump distribution companies around the globe. LORENTZ only sells its pumps through channel partners, some of which the company has worked with for more than 20 years. The company's partnerADVANTAGE program requires minimum yearly standards for its partners, such as mandatory sales quotas and technical training, high-quality installation standards, and a minimum number of installations. In return, LORENTZ guarantees it will never sell directly to customers, provides top-notch support, and promotes its partners alongside its products.

Orders take place through LORENTZ's integrated online ordering system. The company conducts all of its support online using a sophisticated customer relationship product management system. It also has several Internet-based toolsets which are available to smaller companies. LORENTZ takes pride in its straightforward reputation for doing business. The company believes good business is something everyone should do, and if its partners cannot make money, it does not make sense to do it. Also, as a small company, LORENTZ employees are easily accessible to its partners—CEO and engineers included.

LORENTZ: The Solar Water Pumping Company

While the majority of market participants offer multiple products in addition to solar water pumps, LORENTZ focuses exclusively on pushing its brand as the world's top-selling solar water pump manufacturer. With its tagline, "The Solar Water Pumping Company" LORENTZ removes any doubt that its sole focus lies beyond building solar water pumping systems.

LORENTZ is a fully integrated company and does all of its own design, manufacturing, and research and development (R&D) in-house. To optimize its supply chain, LORENTZ multi-sources all of its product components, e.g., identifying alternative manufacturers to ensure a continuous supply. The company also does a lot of forward purchasing of raw materials. To accommodate the extra materials, LORENTZ invests significantly in both machinery and factory capacity. The result is best-in-class flexibility that allows LORENTZ to scale production up or down to meet industry demand rapidly.

The company has seen double-digit growth for 10 years and continues to be profitable, investing the bulk of its profits straight back into the business through R&D and acquisitions. LORENTZ understands the key to staying ahead is through continuous innovation. Active in more than 130 countries, LORENTZ offers global coverage and is always looking for new partners. In 2017, LORENTZ opened a company owned and financed production plant in Beijing—the company's fifth facility in China—with a 500-kW peak rooftop. If a central theme permeates through LORENTZ's practices, it is the philosophy of sustainability. LORENTZ designs, manufactures, and distributes a product with the sole purpose of saving energy, time, and money. As a result, the company adheres to values and principles that are conducive to this theme. LORENTZ uses recycled products whenever possible, and employs solar energy to power its own street lighting and factories. The company also incorporates Kaizen lean management strategies while undergoing continuous quality inspections from governments, partners, and non-governmental organizations.

Conclusion

Solar water pumps offer a sustainable alternative to traditional water pumps that either use costly electricity or diesel fuel. LORENTZ's premium product line provides an efficient, cost-effective, and easy to maintain solutions that optimize water collection and integrates remote monitoring services to measure water levels. Leveraging a multiple-decades reputation in the market, LORENTZ offers quality solar water pump solutions that are meant to last forever. With outstanding performance and supporting excellent customer service, LORENTZ earns Frost and Sullivan's 2018 Product Line Strategy Leadership award in the

global solar water pumps market.

Significance of Product Line Strategy

Ultimately, growth in any organization depends upon customers purchasing from a company and then making the decision to return time and again. A full, comprehensive product line that addresses numerous customer needs and preferences is, therefore, a critical ingredient to any company's long-term retention efforts. To achieve these dual goals (customer value and product line strength), an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Product Line Strategy Leadership

As discussed above, driving demand, strengthening brand, and differentiating from the competition 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 building a superior and comprehensive product line.

Key Benchmarking Criteria

For the Product Line Strategy Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Product Line Strength and Customer Impact—according to the criteria identified below.

Product Line Strength

- Criterion 1: Breadth
- Criterion 2: Scalability
- Criterion 3: Technology Leverage
- Criterion 4: Features
- Criterion 5: Supply Chain Reliability

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 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 recipient 	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"> • 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	<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>.