FROST & SULLIVAN

BEST PRACTICES

AWARDS

FROST & SULLIVAN

2020 BEST PRACTICES AWARD

ECOENERGY INSIGHTS

2020 GLOBAL ARTIFICIAL INTELLIGENCE-DRIVEN BUILDING TECHNOLOGIES CUSTOMER VALUE LEADERSHIP AWARD

Contents

Background and Company Performance

Industry Challenges

Demand for value-driven solutions, cost savings due to increased operational efficiency, government support of artificial intelligence (AI) development, and the penetration of transformative technologies in buildings all combine to facilitate more active development of AI-driven building technologies.

Carbon savings, energy efficiency, as well as occupant's comfort and productivity are three core industry values within building environments that are key to meeting future sustainability goals. For more than a decade, sustainability professionals talked about the criticality in addressing challenges to offer core industry values in buildings and facilities. Today, many governments in both developed and developing economies increasingly   invest in AI for innovation in business and governance. Also, they focus on introducing stricter measures to ensure higher sustainability standards to provide clean energy transition in the buildings sector. Emerging AI technology is a very powerful tool that not only drives innovation at the supply side, it also delivers value-based outcomes to building technology customers. Buildings are becoming data-rich environments; and with greater penetration of transformative technologies, building owners are seeking digital solutions to utilize data points and provide actionable intelligence to optimize the performance of their facilities. In this regard, such high connectedness encourages additional and more powerful AI-driven solutions, further empowering buildings' autonomous intelligence.

Frost and Sullivan forecasts that AI in the homes & buildings market will grow from $719 million in 2020 to reach $8.9 billion in 2030; at a global compound annual growth rate of 27.7%.[1]

Despite AI's inherent benefits, existing challenges restrain market growth and drive down adoption:

High Expenditure and Uncertain Return on Investment: Implementation of AI-driven solutions necessitate the usage of machine learning and deep learning algorithms in its framework, along with additional hours of work from data scientists and developers. As a result, many AI-driven solution providers set a higher price for such solutions compared to other cloud-based or analytics solutions. While these providers stress a short payback period of less than half a year, many potential users are not entirely convinced as to when investing in these solutions would start to pay off.

Cyber Risks: While disruptive technologies like AI pave the way towards new opportunities, they also lead to the emergence of cybersecurity vulnerabilities and threats. Cyber-attacks lead to data loss and accompanying substantial financial, reputational, and legal implications for AI-driven solutions providers.

---

[1] Frost and Sullivan's *Artificial Intelligence – Impact on Homes & Buildings Industry*, April 2020

Insufficient Infrastructure Compatibility and the Lack of Resources: The lack of infrastructure compatibility and resources may disrupt the swift integration of AI tools in buildings. Specifically, the absence of smooth interoperability between building automation and building management systems and different layers of building architecture hinders the seamless integration of AI-driven solutions. Moreover, building owners and managers might face technical and financial issues if they do not have a clearly defined plan, delegated responsibilities, and objectives to implement AI-driven tools in the daily operations of their building management systems. They, therefore, need to have the willingness and capacity to elaborate and monitor the gradual integration of AI-backed tools into building activities.

Customer Impact and Business Impact

Excelling in the Artificial Intelligence-driven Building Technologies Industry

Founded in 2008, EcoEnergy Insights has swiftly developed an excellent reputation by offering its industry-leading CORTIX™ AI platform to the world's largest companies in end- user segments, such as restaurants, retail, hospitality, banking, and water utilities around the world.

By leveraging its cutting-edge and high-performance CORTIX platform, the company outpaces its competitors and maintains an excellent standing among its customers across different industries. EcoEnergy Insights excelled financially over the last couple of years and continues to achieve this growth mainly through high-value projects from international customers in different verticals around the world. Frost & Sullivan recognizes that EcoEnergy Insights exceeds its customers' needs and expectations as many clients value the top-performance and business impact of EcoEnergy Insights' CORTIX platform:

> *"In 2015 we set a goal to reduce our energy expense by 15%. We started working with EcoEnergy Insights with that goal in mind. They were very good at working uniquely with us with our specific goals being in restaurants. Based on their analytics we looked at short term and long term data and were able to save 3.7 million kWh in the last two years, far exceeding our initial goal."*

> *—Jerry Ardizzone, CEO & President, American West Restaurant Group*

> *"EcoEnergy Insights has helped us in optimizing our operations cost for the plant's HVAC equipment. Predictive insights from the CORTIX platform have not only helped us achieve our sustainability goals but also addressed possible equipment failure issues before they even happen. The team has been supportive and proactive through this process and we have seen the benefits of all recommendations made, in such a short period of time. We look to continue our good work with them".*

> *—Maintenance manager, a world-leading manufacturing company*

The Cornerstone of EcoEnergy Insights Solutions' Success: CORTIX AI Platform

EcoEnergy Insights continuously strives to improve its portfolio by meeting ever-evolving customer needs. In July 2018, EcoEnergy Insights launched its CORTIX platform, an AI platform that helps clients to cut operational costs dramatically while improving occupant comfort and safety and informing smart equipment choices and upgrades.

The CORTIX platform offers the following main benefits to its users:

- **Energy Savings:** CORTIX offers the ability to identify a set of actions that could minimize costs, via improved energy efficiency, while also improving bottom lines via lowering staff burdens and increasing productivity. Additionally, the platform also enables customers to reduce carbon emissions from buildings.

- **Improved Occupant Experience:** The CORTIX platform enables users to enhance the comfort and safety of occupants via predictive actionable insights on equipment performance.

- **Enhanced Efficiency:** With round-the-clock tracking of trends and performance data, the CORTIX platform converts this data into advanced insights to enhance operational efficiency and performance of building systems.

- **High Security and Flexibility:** Complying with cybersecurity standards, the CORTIX platform features the ability to process data from various Internet of Things-enabled sources irrespective of technology, industry, or building type while supplying input for various applications like automated demand response, weather feed integration, and work-list management.

Best Practices Examples Confirm High-performance and Ultimate Reliability

Frost & Sullivan lauds EcoEnergy Insights for the superior performance and efficiency of its CORTIX platform, as demonstrated by the following use cases:

Retail: EcoEnergy Insights aided a leading US supplier of office products and services to reduce energy consumption and lower utility and maintenance costs. The client faced growing utility and maintenance costs and more fierce competition, leading to excessive energy consumption in context of greater pressure. EcoEnergy Insights integrated the CORTIX platform with the retailer's current building management systems in over 1,200 stores across the US to reach a holistic understanding and analysis of the client's network of stores by generating actionable insights into its activities. Specifically, the CORTIX platform processed over 9.6 million records from around 100,000 data points from more than 18,500 units of connected equipment related to heating, air conditioning, and ventilation (HVAC), humidity, etc. As a result, EcoEnergy Insights helped the client to achieve a 5.33% reduction in energy consumption in the first year while reaching 7.92% by the end of the second year of deployment of the CORTIX platform.

Moreover, EcoEnergy Insights helped the client to exceed monthly saving targets and achieve savings of more than 48 million kilowatt-hours (kWh) across 1,200 sites. Additionally, by deploying the CORTIX platform, the customer could minimize field visits of its technicians by addressing 82% of the work orders remotely.

Banking: EcoEnergy Insights aided a large bank in India to reduce its energy consumption and gain a holistic understanding of its entire retail branch network operations. The client sought a solution to improve sustainability and enhance on-site HVAC and lighting services while lowering energy consumption and the cost of maintenance activities. EcoEnergy Insights deployed the CORTIX platform to ensure metering, sensor, and control deployments across more than 500 sites with cellular connectivity—for real-time data collection. As a result, the CORTIX platform enabled the client to gain a centralized view of asset performance and implement improvement measures like equipment capacity planning and enhanced asset performance assurance. As a result, the client reached 12.5% energy saving per site and more than 20% average improvement in thermal compliance.

Restaurants: One of India's largest foodservice companies, a pizza delivery chain franchisee, deployed the connected restaurant program by EcoEnergy Insights to save and sustain savings across a portfolio of their restaurants. EcoEnergy Insights focused on areas such as efficiency, guest comfort, Hazard Analysis and Critical Control Points (HACCP) deviation management, policy compliances, proactive detections, equipment lifecycle enhancement, and food safety. The CORTIX platform enabled sustained multi-year savings of over 6% at over 400 restaurants across kitchen, dining and refrigeration loads. This led to an overall energy saving of over USD 1.3 million for the client over 5 years of the engagement. The chain achieved an improvement in compliance across the board - 37% improvement in the dining area, 20% in the food storage area and 19% in the makeline. In addition, EcoEnergy Insights increased the equipment uptime by enabling operations and maintenance teams to proactively manage equipment performance, reduce downtime, and reduce man-hours spent on diagnosis and reporting.

Manufacturing: EcoEnergy Insights aided one of the world's leading manufacturing companies to optimize the use of its resources and maintain the operational efficiency of one of its manufacturing plants. The client had regular breakdowns of the HVAC equipment leading to higher operational costs and the discomfort of occupants at the plant. At the same time, the client had difficulty complying with its sustainability targets set at 3% reduction in greenhouse gas emission. EcoEnergy Insights' team analyzed the data from the client's building automation and energy management systems and identified issues with visibility into the equipment performance and overall monitoring of its plant. To address these challenges, EcoEnergy Insights deployed the CORTIX platform to process all the data from equipment and systems round-the-clock from more than 8,200 unique data points. As a result, the platform transformed the maintenance processes of the manufacturing plant by predicting issues that could lead to equipment failure, allowing the customer to address issues that usually led to equipment failure quickly. As a result, in six months, the customer surpassed its carbon dioxide emission reduction target significantly, cutting it by half and reaching 5.5% in savings, 9% in an average reduction in gas consumption, and 22% improvement in thermal compliance.

Frost & Sullivan is quite impressed by the efforts of EcoEnergy Insights in driving sustainability and innovation in the building technologies industry. The company consistently delivered exemplary performance in its projects and registered consistent double-digit year over year growth in the last three years.

In 2020, EcoEnergy Insights enabled their customers to be more agile in their response to COVID-19 lockdowns. During the lockdowns in India, which happened in the peak summer season, insights from the CORTIX platform and their proactive and quick response actions saved their bank customers between 7% to 35% in energy consumption, based on the level of operations at the sites they were running and weather patterns. Their retail and bank customers were able to run operations as essential services and support local communities without facing heavy energy costs or loss of food inventory. In the USA, they enabled retailers to overcome challenges that included interrupted operations, air quality issues, limited usage and missed preventative maintenance of HVAC equipment due to unoccupied facilities, as well as ensuring reliable operations as the summer approached.

Frost & Sullivan expects EcoEnergy Insights to continue its financial excellence in 2021, with customers now appreciating the significance and benefits of integrating AI platform in buildings and carrying out remote operations.

Conclusion

EcoEnergy Insights' never-ending commitment to its customers is evident from the accolades bestowed upon the company for its value-driven AI platform and for best-in-class customer experience. Despite economic and technical hurdles that impede many industry participants from increasing market share, EcoEnergy Insights maintains its stellar performance and reputation in the AI-driven building technologies industry.

The CORTIX platform, which enhances ease-of-use, reliability, and efficiency, is a testament to the company's willingness and determination to meet and exceed customer needs of enterprises in end-user segments, such as restaurants, retail, hospitality, banking, and manufacturing. By offering customers a high-performance and reliable AI platform, EcoEnergy Insights excels in this dynamic and vibrant industry.

For its expertise and know-how, innovation-driven solutions, and customer-centric approach, EcoEnergy Insights is recognized with Frost & Sullivan's 2020 Global Customer Value Leadership award in AI-driven building technologies industry.

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: 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.

Business Impact

Criterion 1: Financial Performance
Requirement: Overall financial performance is strong in terms of revenues, 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.

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	**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.

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 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.