Competitive Strategy Innovation and Leadership Award

IoT-enabled Smart Buildings

NORTH AMERICA

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Industry Challenges

Buildings consume about one-third of global energy use and are the leading contributors to greenhouse gas emissions. Implementation and adoption of intelligent automation can benefit both facilities and the environment in myriad ways, including promoting high energy efficiency, lowering operating costs, reducing manpower necessary to monitor critical building functions, and decreasing carbon dioxide emissions. Government regulations and policies directed towards energy efficiency act as a key driver in the North American market. The Internet of Things (IoT) will further enhance the features of intelligent automation technologies; however, the complexity of this ecosystem significantly increases the demand for state-of-the-art network solutions. Edge intelligence, in particular, can synthesize massive volumes of data and make decisions close to the data collection point—achieving unprecedented levels of reliability and efficiency in the building sector and beyond. North America will emerge as the largest contributor to edge market adoption; by 2020, the focus will gradually shift to enterprise-wide analytics.[1] With the rise of interconnected edge devices, including solar photovoltaic systems and electric vehicle charging stations, new concepts such as real-time autonomous decision making are increasingly adopted. Enterprise-wide analytics comprises applications for real-time monitoring and analytics, predictive maintenance, and the visualization of the entire network.

Competitive pricing, providing end-to-end solutions on-site, and a focus on branding are key factors for companies seeking growth in the intelligent automation market. Additionally, successful companies must focus on engineering capabilities, service support, system interoperability, and cloud-based solutions which underpin the key technology trends. Interoperability, in particular, is a key challenge facing the intelligent automation systems industry. Currently, government, utilities, and vendors are collaborating to advance interoperability through standards development, test cases, and supporting policies. Network communication platforms, software, and cyber security will also be major areas of investment.[2] Nevertheless, a lack of product standardization slows the uptake of intelligent automation across regions due to client reluctance to invest in systems that may be difficult to integrate. Additionally, the communicative nature of edge intelligence escalates privacy and vulnerability issues. Other challenges include meeting safety standards and maintaining competitive pricing. Despite the challenges, the competitive landscape will be vibrant with new companies and stakeholders being active in the smart grid industry.[3]

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[1] See Frost & Sullivan's *Opportunities in Edge Intelligence: Enabling the Interconnection of the Grid of Things* Published July 2015 [9AAE-00-24]

[2] See Frost & Sullivan's *Smart Grids in Europe and APAC* [D961-00-10] Published January 2017

[3] See Frost & Sullivan's *Future of the Smart Grid Industry: The Global Smart Grid Industry will Reach $112.7 Billion in 2025 growing at 6.2%* [MC2E-01] Published May 2016

Strategy Innovation and Customer Impact of Lynxspring

Founded in 2002 and headquartered in Lee's Summit, Missouri, Lynxspring's pioneering and JENEsys® open networking platforms foster collaboration and intelligently connect enterprises worldwide. Frost & Sullivan research reveals Lynxspring provides superior value at multiple facets of the IoT chain through offering leading connectivity, integration, and interoperability to thousands of facilities including government, military bases, commercial buildings and schools/universities. Frost & Sullivan notes the company's singular focus on platform interoperability is an important differentiator—the company has an intrinsic commitment to providing an open architecture that is endpoint agnostic. Frost & Sullivan further appreciates the fact that Lynxspring provides clients superior control and real-time operational support for

JENEsys® Building Operating System

Source: Lynxspring

automated functions. Other customer-centric capabilities include a layered technology platform with rigorous security mechanisms—the company's Lynx CyperPro was the industry's first cybersecurity offering in the building space. With its core expertise in building automation, leading building owners and operators and Original Equipment Manufacturers are using Lynxspring's IoT solutions; additionally, the company capitalizes on its automation and interoperability know-how to provide a product line that works across industries. Aside from its flagship JENEsys® Operating System, a unified building operating platform, the company offers Onyxx®, an embedded edge platform, and Helixx™, an open-source automation technology, among others—eliminating the need for middleware while providing security and peak performance for a variety of automation and IoT applications. Frost & Sullivan notes that, unlike most competitors, Lynxspring provides an open, end-to-end IoT platform for over 250 system integrators to maximize interoperability; the company also works with OEMs who both license and purchase customized solutions from Lynxspring. With a focus on innovation and education, Lynxspring leverages a creative culture to drive IoT solutions further; additionally, the company incorporates a collaborative "3D" product development approach consisting of discovery, development, and deployment. Aside from its direct interaction with customers, Lynxspring spends a lot of time engaging with analysts, conducting primary research, and attending trade shows to identify ongoing trends. Furthermore, through leveraging its thought leadership and deep understanding of the building automation industry, Frost & Sullivan firmly believes Lynxspring can develop and deploy uniquely customer-centric offerings that involve clients at each developmental milestone. In 2012, the company expanded beyond the North American market and currently has major projects in China and Singapore; it is also actively exploring the Southeast Asian market, e.g., Hong Kong and Vietnam. Lynxspring has grown significantly within the past four years and focuses on research and development, specifically enhancing its smart equipment technology.

Promoting IoT Standards

Frost & Sullivan research shows that data generated by the IoT has been difficult to organize and use due to various storage formats, inconsistent naming conventions, and limited data descriptors. Lynxspring is a major sponsor of Project Haystack—a nonprofit focused on developing common standards to streamline the interchange of data among smart devices, systems, and equipment. Through developing and defining a simple data-tagging approach and standard models for common types of equipment systems, Lynxspring and its partners are spurring adoption of the IoT worldwide.

Onyxx™ Edge Platform

Source: Lynxspring

Powering the Edge

In late 2013, Lynxspring launched the cloud-based Edge to Enterprise (E2E) solution, a strategic initiative leveraging the company's prowess in the commercial buildings and energy management verticals. Consisting of the Helixx™ IP stack, Onyxx™ hardware platform, and Connexxion®, which provides cloud services, Lynxspring designed E2E to derive maximum value from the IoT. Frost & Sullivan independent analysis confirms that E2E offers clients rapid prototyping control development methodology, shortening system integration and overall deployment time. Lynxspring is currently ramping up its E2E platform to enable real-time analytics at the edge. Market segments the company is targeting include the commercial building space and small building sector; Lynxspring is also exploring additional markets, where connectivity, interoperability and the use of data and analytics allow operators to manage, control and add value to their operations.. In the industrial space, the company recognizes the monitoring of equipment for predictive and preventative maintenance is a major market opportunity—consequently, Lynxspring designs its offerings to allow clients exceptional monitoring abilities to identify manufacturing efficiencies and best practices better.

Superior Customer Service

Frost & Sullivan notes that Lynxspring seeks to provide customers an exceptional deployment and support experience and works closely with clients to determine which offerings will enable the most cost-effective and efficient automation and connectivity. In addition to extensive installation support, the company's Lynxspring University offers diverse course offerings and a coaching-based methodology to promote client learning. Post-deployment, an award-winning technical team offers rapid resolution for clients. The company's Professional Services Group offers clients an expert team of application engineers, developers, and project managers that provide system configuration and design, field commissioning, and training and certification, among other services. The company also actively solicits and collects the voice of customer (VOC) data and other user feedback to improve service and determine product development. Lynxspring meets

face-to-face with clients multiple times a year while conducting VOC surveys; the company also sponsors webinars and the Lynxspring Exchange conference to foster industry-wide collaboration and education. Frost & Sullivan appreciates the fact that, through its recently launched Innovation Engagement Center, the company is seeking to be at the forefront of customer-centric client engagement.

Conclusion

As the demand for intelligent automation increases globally, Lynxspring's innovative and proven networking solutions provide superior flexibility, speed, and reliability that enable the ready adoption of the Internet of Things (IoT). Through leveraging decade-long expertise and proven performance in building automation, the company provides a smarter, greener, and more value-driven solution to end customers across multiple applications. With its strategic thought leadership, technical excellence, and commitment to superior customer service, Lynxspring earns Frost & Sullivan's 2017 Competitive Strategy Innovation and Leadership Award in the North American IoT-enabled Smart Buildings market.

Significance of Competitive Strategy Innovation and Leadership

Any successful approach to achieving top-line growth must (1) take into account what competitors are, and are not, doing; (2) meet customer demand with a comprehensive, value-driven product or service portfolio; and (3) establish a brand that resonates deeply with customers and stands apart from other providers. Companies must succeed in these three areas—brand, demand, and positioning—to achieve best-practice levels in competitive strategy.

Understanding Competitive Strategy Innovation and Leadership

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 Strategy Innovation and Customer Impact.

Key Benchmarking Criteria

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

Strategy Innovation

      Criterion 1: Strategy Effectiveness
      Criterion 2: Strategy Execution
      Criterion 3: Competitive Differentiation
      Criterion 4: Executive Team Alignment
      Criterion 5: Stakeholder Integration

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	• 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	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• 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	• 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	• 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-practice Award recipient	• 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	• 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 may share Award news with stakeholders and customers	• 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.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS
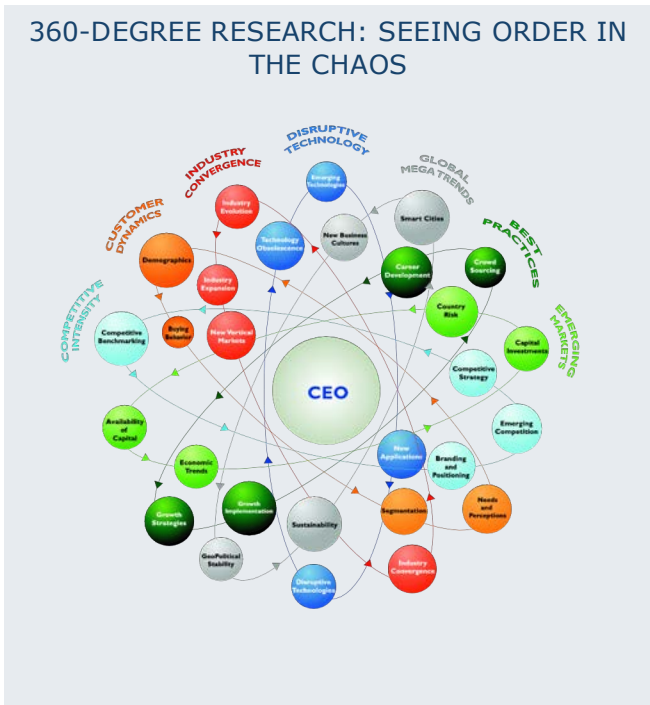
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