



CYANCONNODE

2018 Global Smart Meter
Company of the Year Award

FROST & SULLIVAN

2018

BEST
PRACTICES
AWARD

GLOBAL SMART METER
COMPANY OF THE YEAR AWARD

2018

BEST PRACTICES
AWARDS

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Background and Company Performance

Industry Challenges

The global smart meter market is highly competitive where manufacturers face intense pricing pressure due to limited technology innovation. One of the key challenges in this market is uncertainty over choice of technology. There have been major technological changes in the past five years related to the communication and data analytics software that supports smart metering. However the number of best-in-class examples is limited. This has made many utilities hesitant to invest, as they are skeptical of making the wrong decision and selecting a technology that is superseded by a better option. Frost & Sullivan believes that companies that are adept at demonstrating their technological finesse by offering networking platforms to facilitate a smooth communication medium are best positioned to successfully deal with the prevailing industry challenges and stay ahead of the competition.

Visionary Innovation & Performance and Customer Impact

Excellence in Addressing unmet needs

Frost & Sullivan finds CyanConnode's growth in the Smart Meter industry highly impressive. The company has grown from being a European pioneer to becoming a global leader in visionary innovation and customer impact. The driving force behind its success is its astronomical perseverance and commitment to pursuing its vision of creating highly superior narrowband radio mesh networks that not only address customers' current needs, but also evolving future needs. It is a known fact that data traffic is escalating beyond anticipated levels which ultimately gave rise to an alternative communications technology – the "Narrowband RF mesh" which aims at increasing the capacity for connected devices. It is Frost & Sullivan's finding that CyanConnode is clearly a torchbearer in this field. Even though Narrowband RF mesh technology addresses the capacity issue for connected devices, most narrowband networks still leave a few crucial market needs unmet – such as lowering costs, optimized Quality of Service (QoS) metrics and so on. Capitalizing on its extensive intellectual property, technology know-how and R&D capabilities, CyanConnode has developed path breaking narrowband RF mesh networks that are changing the landscape of wireless communication and are uniquely positioned to address these un-met needs. It leverages a mesh network topology that's self-forming and self-healing. The key aspects that differentiate CyanConnode's networks from others is that, the Company offers significantly increased efficiency levels as it has the ability to quickly create robust ad-hoc networks, it guarantees quality of the highest standards with its unique built-in diagnostics and fault reporting systems, and it dramatically simplifies installation. Its standards-based networking stack can be deployed efficiently and recurrently with zero commissioning effort and minimal human intervention.

Furthermore, CyanConnode is at the forefront of the industry in leveraging the benefits of Narrowband RF mesh technology to support IoT – It has developed wireless

“Neighbourhood Area Networks (NANs)” that enable highly efficient device-to-device communication. It is intriguing to see that these networks are not only highly resilient, but are also secure, scalable, easy to deploy and more importantly, future-proofed. It is also noteworthy that its cutting edge IoT platform enables Advanced Metering Infrastructure (AMI) solutions, providing highly secure communication between utilities and consumers across the globe. The company has gained a unique edge in the industry when it comes to increasing the performance of the implementation and lowering the total cost of ownership. This is based on the fact that it has comprehensive knowledge and understanding of all the three elements included in its highly-optimised solution set – hardware, software and network management. Its 6LoWPAN smart metering technology uses IPv6 technology that enables deployment of integrated solutions from single applications to city wide deployments of multi-application networks seamlessly. In terms of scalability and flexibility, CyanConnode offers users a “Build-as-you-go networks” model where it also allows users to implement additional gateways by leveraging the coverage created by the existing devices and gateways added as a part of their initial application.

Visionary Scenarios Through Mega Trends

One of the key success factors of CyanConnode is its ability to envisage visionary scenarios by constantly analyzing mega trends and creating revolutionary solutions to address those developments. The company has a clear understanding of the evolving market needs and continually innovates to ensure that its product offerings are state of the art. The launch of Omni IoT platform is a testament to the company’s unwavering commitment towards achieving its long-term strategy to address communication challenges in a rapidly evolving environment for energy networks – this unique platform is a significant step forward in the right direction as it is communication protocol, network and device agnostic and offers the flexibility to integrate both legacy and new applications on the same platform, a perfect way to address the historical siloes. This revolutionary platform is designed to manage multiple systems through one network management system and it incorporates all the elements required to deliver multi-network, multi-application IoT solutions, significantly reducing complexity and integration costs. It allows users to mix and match multiple communication systems on a single network management system to balance application requirements, coverage, capacity, bandwidth, throughput, capital expenditure (capex), and operating expenditure (opex). Furthermore, its highly transparent Application Program Interface (API) enables seamless and rapid integration with Enterprise Resource Planning (ERP) systems such as a Meter Data Acquisition System for smart metering applications.

In essence, the Omni IoT platform acts as a command and control system that performs network management, security and protocol conversion functions. It provides a full-service solution for machine to machine (M2M) communication enabling cost effective communications for long range low power IoT applications. On the other hand, it fully supports incremental rollouts, hence enhancing cash flow, deployment, and end-to-end verification efficiencies. It is Frost & Sullivan’s finding that there are three critical feature

sets incorporated in the Omni IoT platform that will dramatically enhance customer ownership experience; Security, Ease of Deployment and Cost Effectiveness.

Implementation of Best Practices

CyanConnode places tremendous emphasis on four core aspects of its product development process – simplicity, efficiency, robustness and cost effectiveness. 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 in terms of mesh network topologies. The company's best-in-class strategy implementation is characterized by processes, tools, and activities that generate a consistent and repeatable level of success. Its excellence in implementing best practices can be categorized in to two broad aspects – “Embracing Standards” and “Customer Agility”. A prime example to demonstrate CyanConnodes excellence in this regard is its recent launch of “Omnimesh” – a robust, futuristic, smart metering solution which is delivered as a part of the Omni IoT Platform and leverages industry recognized open standards, IPv6 6LoWPAN narrowband RF mesh technology.

Omnimesh is a cost-optimized, standards-based smart metering solution that enables utilities to operate innovative commercial models, improves customer experience and billing, rapidly locates and resolves outages, reduces distribution issues and losses, and manages demand in real time during peak periods. Furthermore, it empowers utilities to implement real time pricing scenarios and enables customers to control energy use and costs. It is also highly intriguing to see the level of flexibility it offers the utilities in maximizing smart grid investment. This is made possible by extending existing and new command and control capabilities over highly secure and dedicated last-mile communication networks. It also supports strategic energy waste reduction by reusing smart grid infrastructure to support related smart city use cases such as smart street lighting. While Omnimesh offers a vast array of value added features, functionalities and benefits, it is also equally important to note that it implements standards which span several regulated and unregulated domains, i.e. electricity metering, monitoring and control of critical national infrastructure, RF communication, internet communication, and information security. CyanConnode strongly believes that every utility is unique in its own way and it truly appreciates that the internal processes such as procurement, meter replacement and rollout, consumer billing scenarios etc. may vary widely among different utilities. Keeping this in mind, the company has designed Omnimesh to be process agnostic and highly flexible so that it is uniquely adaptable to individual utilities' existing practices. Frost & Sullivan finds this highly commendable; apart from its technology excellence, this is one of the other key traits that will further elevate CyanConnode's leadership position in the global smart meter market.

Blue Ocean Strategy

CyanConnode constantly strives to be a step ahead of its competitors with respect to technology and innovation and has been successful thus far. This is primarily driven by its futuristic approach with high focus on tracking and analyzing mega trends. By anticipating a growing requirement for communication capabilities that are not only cost effective but are also more efficient and resilient, CyanConnode has incorporated further technology attributes to its narrowband RF mesh topology to come up with the highly advanced Omnimesh system. It's extremely focused R&D efforts involving heavy investments have resulted in the company achieving micro-granular capabilities in its communication systems. There are two facets to CyanConnode's blue ocean strategy; the first one is technology and innovation, the second one is its unique market approach. The typical approach of market players in this space is characterized by a product-push while engaging purely at a technical level. As a stark contrast, CyanConnode engages with customers and the market at all levels. Even though the company has focus on selling technical AMI solutions, it places higher emphasis on establishing a dynamic bond and rapport with the CXO level utility officials and top national and regional government officials, standards bodies, and regulators. By gaining the full support of bodies that direct AMI policy and make project funding decisions, CyanConnode's ability to shape policy and its thought leadership position are highly strengthened – A masterstroke that provides the company with a staggering competitive edge.

It is a known fact that that CyanConnode's solutions represent the next generation of communication systems that are not only simple, reliable and efficient, but are also deeply integrated with the network, making it a comprehensive end-to-end solution. The preceding sections clearly indicate the leadership position of CyanConnode in narrowband RF mesh technology and the unique value additions brought to users by its highly innovative Omni IoT platform and Onmimesh systems. This is a true testament to its unique competitive edge and development of an uncontested market from a technology and innovation perspective. In addition to this, the other intriguing aspect of its blue ocean strategy from a technology and innovation perspective is the two pronged value addition approach of Ominmesh. The first one as discussed in the above sections is the fact that it is that it is a highly effective last-mile communication system. The other value addition is in hiding the last-mile communication system and physical meters. Since its API is meter-manufacturer-agnostic and meter-protocol-agnostic, it essentially is a virtual metering API that is capable of reading, configuring and controlling the in-field meters. This unique approach of Omnimesh lends itself to fast, step-and-repeat delivery; this is a true industry first – as opposed to the traditional communication-only solutions that leave the complexities of metering, meter protocols, and meters in the hands of enterprise application developers and System Integrators (SIs).

Industry Leading Price/Performance Value

CyanConnode's solutions offer the best value for the price, compared to other offerings in the market. Since its inception, the company's smart meter offering and associated communications systems have been topping the price vs value equation. Its expertise in providing narrowband RF mesh communication platform, providing highly efficient, scalable device-to-device communication, make it highly competitive with respect to price/performance value. While CyanConnode's meticulous R&D efforts have resulted in smart metering solutions that are able to work even under extremely challenging conditions in emerging regions, they are also manufactured at a price point suitable for these markets. For instance, it outsources manufacturing to tier 1 contract equipment manufacturer in India in order to cater to direct customer orders in the country. Its end-to-end solutions support each component of smart grid implementations and are designed to provide excellent urban penetration and connectivity at a price point suitable for next-generation economies, such as India. Furthermore, the Omni Iot platform and Omnimesh system offer a range of cost benefits to the users. Given that Omnimesh is self-forming and self-healing, it significantly reduces deployment costs and it supports spectrum diversity and operates in any suitable sub-GHz free, unlicensed ISM bands. On the other hand, given that the Omni IoT platform supports the deployment of multiple communication technologies, it is uniquely placed to minimize complexity and cost by optimizing the mix of these communication technologies.

Outstanding Customer Purchase/Ownership Experience

It is Frost & Sullivan's finding that CyanConnode 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. CyanConnode excels at both. It has established a strong partner eco-system including multiple meter manufacturers and system integrators to support the transfer of skills and experience to facilitate customer ownership and generate local wealth. 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. On the other hand, CyanConnode has developed a range of innovative in-field commissioning tools to further empower its partners to rapidly deploy smart meters enabled by its technology. CyanConnode offers a licensing model to its other partners (such as mobile operators, telecom providers etc.) that allows them to "white label" its Omnimesh technology to be integrated with Industrial IoT applications. Moving forward, it has plans to offer its partners, such as meter manufacturers, with a licensing model that enable them to take control over local manufacturing of the hardware and license the software.

Conclusion

CyanConnode's Omni IoT platform and Omnimesh are revolutionary systems that are not only unique and visionary, but are also likely to be disruptive to existing technologies. The company's aspiration for continuous development of best-in-class products through visionary innovation has provided it with a unique edge in the market. CyanConnode has exhibited excellence in enhancing customer value by leveraging technology and innovation. Its track record with many of the world's leading utilities and smart meter roll outs signifies that it is positioned to be the safe pair of hands to ensure the project is a success.

For its strong overall performance, CyanConnode 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

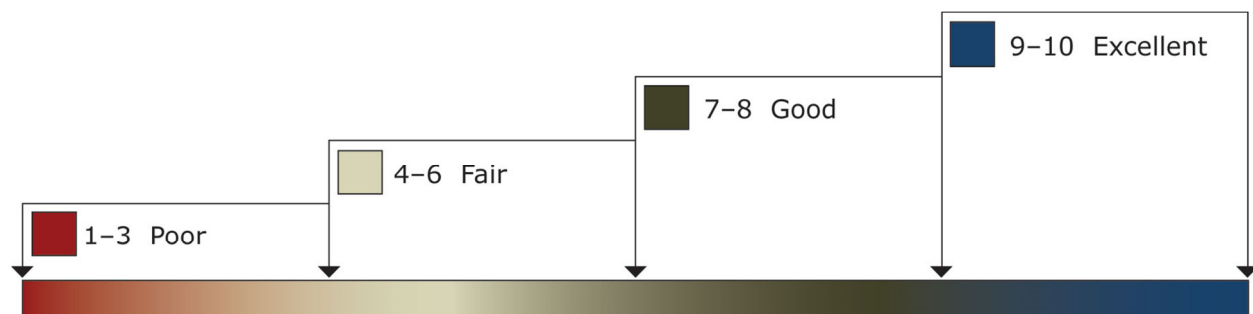
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for CyanConnode

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, we have chosen 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
CyanConnode	9.5	9.0	9.25
Competitor 2	7	6	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

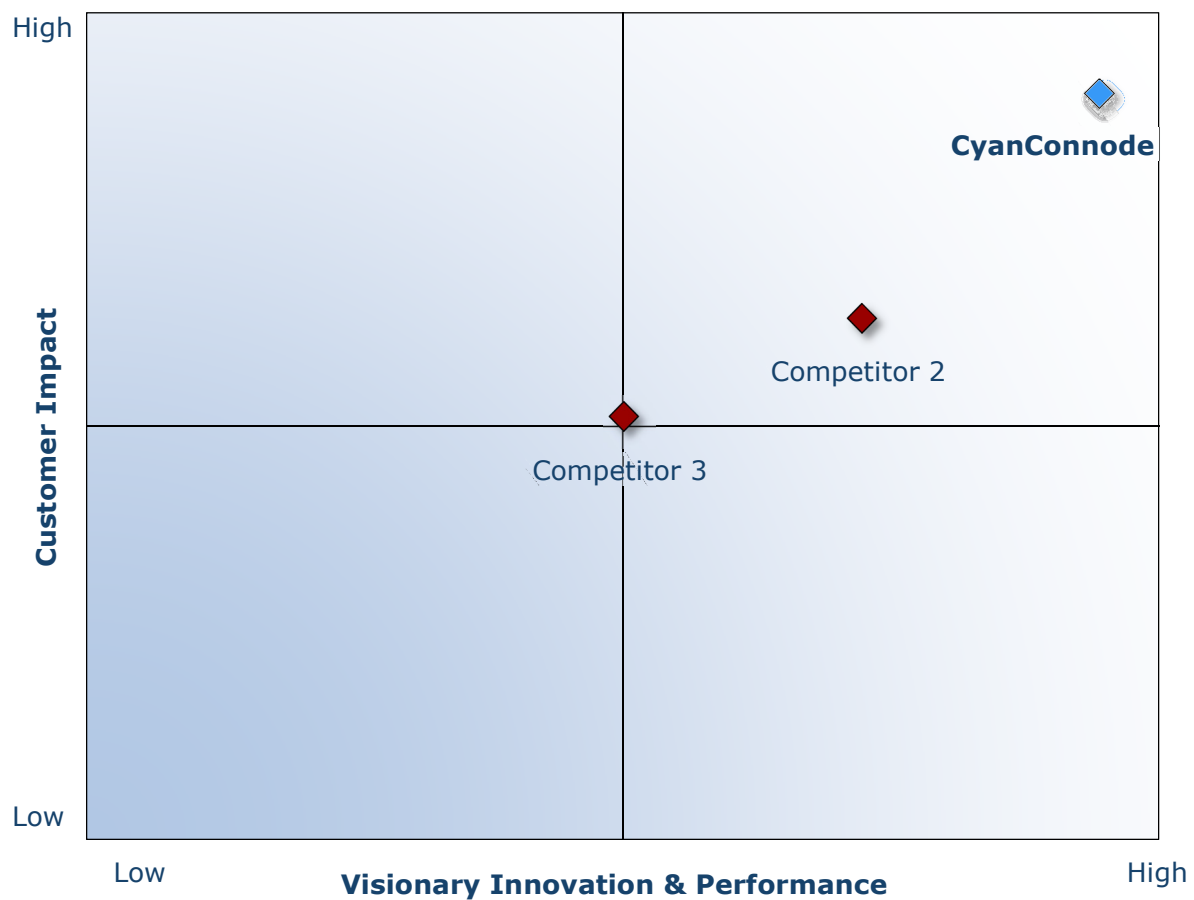
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

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"> • Announce 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 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.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



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>.