2015 North American Utility Grid Intelligence Competitive Strategy Innovation and Leadership Award
Background and Company Performance

Industry Challenges

Growing cities must optimize operational efficiencies in an effort to steer funds to long-overdue infrastructure upgrades that are necessary for managing denser population and changing demands.

A long-term customer demand change is likely to arise from the increased adoption of electric vehicles and the popularity of distributed power generation. While current electric vehicle adoption is small, it could pose a threat to grid operations with overheated distribution transformers or peak load power issues. Net metering for distributed power generation such as solar photovoltaic rooftops can benefit from meter automation in the form of grid and consumption oversight for the utility. Situational grid awareness is an added benefit for many utilities.

Close to 2,000 U.S. municipalities operate their own electric utilities and many are evaluating metering infrastructure upgrades that would reduce manpower and automate billing.

Investor-owned utilities have been on the forefront of adopting this strategy and account for the majority of deployed smart meters. Frost & Sullivan estimates that approximately 45.3 million units have been shipped in the United States since 2011. In addition to recording customer load for billing, smart meters can manage supply during peak load demand periods and enable demand repose programs.

Key challenges for municipal utilities arise from the lack of bandwidth to manage projects. This requires tackling the complexities of data analytics and providing the basic communication infrastructure needed to support advanced meters. Companies with a comprehensive understanding of products that address these challenges give municipalities a compelling value proposition as they try to modernize their grids.

Strategy Innovation and Customer Impact

Strategy Execution

Verizon, a company specializing in wireline and wireless technology, has been on the path to grow in the utility grid sector for the past five years. For years, Verizon has worked behind the scenes through its wireless service offering. The company has developed an scalable, enhanced intelligence platform to modernize the grid.

It formed Verizon Enterprise Solutions to consolidate its business solutions into one group and to expand into new areas including energy and utilities. The company acquired Terremark Worldwide Inc. in 2011 to grow its cloud and hosting-based service.
The company’s cyber security focus includes its annual Data Breach Investigation Report, that help enterprises assess cyber security threats and determine the most appropriate solutions. A secure communication network is essential as utilities migrate to more cloud- and Web-based offerings.

Frost & Sullivan estimates global market revenue for smart grid data analytics to be about $379 million in 2015; it is projected to increase at a compound annual growth rate of 8.7% from 2015 to 2020.

**Strategy Effectiveness**

Verizon developed a managed service offering in 2015 specifically for the untapped municipal and cooperative markets: Grid Wide Utility Solutions. This is a pre-built cloud-based service model that contains preconfigured data and an analytics dashboard. This cloud-based service is offered on a monthly and per meter cost basis. The service allows utilities to communicate directly with its meters via Verizon’s 4G LTE wireless data network.

Municipal and co-op utilities typically have limited capital budgets and resources. Grid Wide Utility Solutions enables them to consume service as needed. The utility does not have to invest in networks, routers, switches, head-end services, or meter data management systems because Verizon manages those elements.

The Grid Wide Utility Solution consists of the following\(^1\):

- Grid Wide Smart Metering: smart meter hardware and software offered on a single platform, meter reading and control, outage and restoration notifications, access scheduled and on-demand data
- Grid Wide Demand Response: load control and consumer alerts
- Grid Wide Meter Data Management: validation, estimation, and editing (VEE) and billing data management
- Grid Wide Distribution Monitoring and Control: grid monitoring and control, fault location, isolation, and service restoration (FLISR), and asset management

**Competitive Differentiation**

While managed services for utilities remain in the nascent stage, Verizon has been able to carve out a competitive edge with its high performing 4G LTE network combined with its enterprise class, cloud hosted data centers. This vast infrastructure has helped the

company win the confidence of several prominent utilities. Verizon, further has a group of industry experts dedicated to utilities sector to support growing customer demand.

**Customer Ownership Experience**

Smart meters are important tools for efficient operation. Shrinking tax revenues make it difficult for municipalities and co-ops to finance infrastructure projects while higher operational efficiency gives cities a higher return on investment, freeing funds for more critical projects. Smart meters not only send and receive data but detect tampering, offer accurate readings, monitor power quality and remote management switch off/on, various demand response programs, voltage regulation, report power outages, and determine prepayment options.

Grid Wide Utility Solutions operates on a single Internet of Things (IOT) platform and runs on Verizon’s 4G long-term evolution (LTE) network. The single platform operates advanced meter infrastructure software services, meter data management, distribution monitoring and control, LTE network, pre-configured data and analytics, private IP network, and Verizon Hosted Cloud Services. Its high-speed network allows remote commands to be distributed to the meter within milliseconds.

**Customer Service Experience**

Verizon’s Grid Wide Utility Solutions architecture is designed to support policy-based end-to-end applications for current and future needs. It is easily scalable and secure. To ensure seamless deployment, the company provides a smart communication card that slides into the communication socket of a smart meter. In multi-service utilities, the meter can act as a collector via supplementary card interface that is snapped on another radio technology such as 900 MHz for water, gas or mesh gateway. According to an article published in Green Biz magazine, the company was able to increase the number of connections by 49% in 2014 as a result of its targeted IoT product strategy.

**Brand Equity**

Verizon holds a strong mindshare in the energy industry. The company has increased its market initiatives with the help of technology partners as well as through its support services offered for machine-to-machine, smart metering, and power distribution network operations.

**Conclusion**

Verizon demonstrates a clear vision for municipal and cooperative utilities to leap forward into the next generation of power distribution grid networks. The company already manages many devices on the grid and has the potential to increase its presence through its product development and improvement strategy. With its strong overall performance, Verizon has earned Frost & Sullivan’s 2015 Competitive Strategy Innovation and Leadership Award.
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 at these three things—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 Practice Award Analysis for Verizon

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 Strategy Innovation and Customer Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria 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 players as Competitor 1 and Competitor 2.

**DECISION SUPPORT SCORECARD FOR COMPETITIVE STRATEGY INNOVATION AND LEADERSHIP AWARD**

<table>
<thead>
<tr>
<th>Measurement of 1–10 (1 = poor; 10 = excellent)</th>
<th>Competitive Strategy Innovation and Leadership</th>
<th>Strategy Innovation</th>
<th>Customer Impact</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Competitor 1</td>
<td>10</td>
<td>9.5</td>
<td>9.75</td>
</tr>
<tr>
<td></td>
<td>Competitor 2</td>
<td>9.5</td>
<td>9</td>
<td>9.25</td>
</tr>
<tr>
<td></td>
<td>Competitor 3</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

**Strategy Innovation**

**Criterion 1: Strategy Effectiveness**
Requirement: Strategy effectively balances short term performance needs with long-term aspirations and vision for the company

**Criterion 2: Strategy Execution**
Requirement: Adoption of best-in-class processes to support the efficient and consistent implementation of business strategy

**Criterion 3: Competitive Differentiation**
Requirement: Unique competitive advantages with regard to solution or product are clearly articulated and well accepted within the industry

**Criterion 4: Executive Team Alignment**
Requirement: The executive team is aligned on the organization’s mission, vision, strategy and execution

**Criterion 5: Stakeholder Integration**
Requirement: Strategy reflects the needs or circumstances of all industry stakeholders, including competitors, customers, investors, and employees

**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 like 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 can 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.

**DECISION SUPPORT MATRIX FOR COMPETITIVE STRATEGY INNOVATION AND LEADERSHIP AWARD**
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 players and for identifying those performing at best-in-class levels.
Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan Awards 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.

<table>
<thead>
<tr>
<th>STEP</th>
<th>OBJECTIVE</th>
<th>KEY ACTIVITIES</th>
<th>OUTPUT</th>
</tr>
</thead>
</table>
| 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 winner | 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 |
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