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# BEST PRACTICES

AWARDS

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2019

BEST  
PRACTICES  
AWARD

Capgemini 

2019 GLOBAL  
SOFTWARE TESTING SERVICES  
COMPANY OF THE YEAR AWARD

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## Background and Company Performance

### *Industry Challenges*

Global Mega Trends and rapidly evolving business requirements are driving companies to move from insourcing to outsourcing so they can collaborate with different vendors for their software testing needs. With software driving nearly every aspect of business, testing is an essential component, without which, critical errors could be overlooked and result in loss of money and reputation. With an abundance of active testing vendors and with the rapid evolution of testing tools and associated technologies, customers often find it challenging to navigate the market landscape, in terms of identifying the testing vendors that can effectively meet their business needs.

A key challenge for testing vendors is that customers' have been reducing their traditional testing spending as a portion of their overall IT budgets because of transformational activities and newer initiatives. With customer preference shifting toward specialized testing services, testing vendors are challenged to speed up test cycles, increase quality, and provide smarter defect identification tools. Entailing investments in resources, infrastructure, and technology, this dichotomy challenges testing vendors to retain or improve their own margins while improving cost optimization for their customers. With time and money proving valuable, testing vendors are resorting to automation and flexible pricing models to acquire new customers and to retain and enhance their relationships with existing ones.

However, despite being around for over 15 years, real-world test automation levels remain low, at an average of 15%, mainly because of constantly changing requirements and test environments, rendering it difficult for testing vendors to build an adaptable test automation solution. Within the context of pricing, specialized testing services necessitate flexible pricing models to optimize and reduce the burden from large capital outlays, which would otherwise be necessary to develop the infrastructure and tooling required to implement advanced solutions. However, long-term contracts and the promise of a steady revenue stream would require an increase in the share of testing and quality assurance (QA) spending.

Another major challenge for testing vendors is finding skilled workers to implement advanced solutions. With customers unclear about the benefits from these solutions, engineers and executives with greater digital skills are in high demand and could be a major differentiating factor among competitors. Furthermore, companies that have historically relied on off-shore delivery are being challenged to provide more near-shoring solutions as end users find it easy to connect with personnel who are based out of their region. With the market mainly consisting of both pure play testing service providers and IT system integrators, collaborations between different vendors are on the rise as well, and solutions that are easy and quick to integrate are finding favor in the marketplace.

With many testing vendors specializing in specific segments, testing service providers with the broadest range of core competencies will increasingly win more deals in this dynamic industry.

## *Visionary Innovation and Performance/Customer Impact*

Founded in 1967 and headquartered in Paris, France, Capgemini is a multi-national corporation that provides IT services, consulting, and other related services. With more than 200 offices in over 40 countries worldwide, Capgemini has a truly global footprint. Within the context of software testing, the company has one of the largest dedicated testing practices in the world, with over 23,000 testing professionals and an additional 14,500 application specialists.

### **Capgemini's Investment in Innovation Drives Customers' Digital Transformation**

In the global software testing industry, multiple tiers of customers can result in some end users preferring single vendor engagements and others choosing to employ multi-vendor initiatives, where end users contract with different developers, different testing vendors, and different build-automation companies, or, in some cases, end users utilize their own in-house build automation teams. In the case of single vendor engagements, unlike some competing solutions, Capgemini's solutions are autonomous and self-contained. Various aspects such as development, build automation, environment management, data management, and provisioning of the test environment are handled in-house, and if a downstream QA environment is required, Capgemini can create, manage, and dockerize this environment faster than most competitors.

On the other hand, with many customers preferring to contract with multiple vendors for different IT services, the integration of QA and quality engineering engagements, mainly driven by the trend of Agile and DevOps adoption, warrants a collaborative community with smooth integration and interoperability among multiple stakeholders. To this end, Capgemini has decades of experience collaborating with multiple IT vendors and offering a number of smart solutions to drive intelligent test automation and to increase quality. These solutions leverage the power of artificial intelligence (AI), machine learning (ML), natural language processing (NLP), and even robotic process automation (RPA) to provide excellent value to customers. Every customer that Capgemini serves benefits from testing process optimization, where questions such as what to test, what not to test, when to stop testing, what defect forensics to focus on, and what defect predictions to focus on are all answered early in the process. With descriptive, prescriptive, and predictive capabilities, Capgemini's impact-based, insights-driven solutions allow automation, even in legacy systems.

While test automation has been a feature in the software industry for over 15 years, real-world adoption remains low because of various implementation challenges associated with rapidly changing requirements. With Capgemini's solutions, major customers, such as those in banking and financial services, have realized rapid automation and continuous testing with a minimum of 80 to 90% automation of the testing process, which marks Capgemini as a clear leader in this space. Another major advantage is that customers do not have to wait for an environment to be available during the development phase, unlike with some competitors' solutions.

Using code generators and code analytics, application programming interfaces (API), testing services, and even microservices can be automated in parallel to bring about real-world component automation. With these pre-tested components, integration is significantly quicker, enabling Capgemini to deliver higher value to its customers. Capgemini's testing solutions, which include end-to-end testing and system integration testing, penetrate different heterogeneous systems as well, enabling customers to benefit from intelligent portal automation; smart scheduling; and bot-driven, one-touch, and zero-touch execution. This end-to-end testing solves a major industry challenge, where many of Capgemini's competitors that embark on continuous delivery and testing do not have an environment available, either upstream or downstream. This scenario stifles the execution of these solutions because end users have to wait for a few days or even weeks for the environment to become available, followed by an additional wait time for data provisioning.

While this entire competing process typically takes three months of the release cycle, Capgemini's homegrown, on-demand provisioning solution, Smart Foundry, intelligently makes the environment ready well in advance at the click of a button and enables data provisioning in a virtual environment. Furthermore, to help customers achieve rapid transformation and continuous quality engineering, Capgemini's accelerators use the Quality Blueprint™ framework, which is built on Capgemini's homegrown Test Process Improvement (TPI) model. This model integrates with connected ecosystems and common automation frameworks that work on multiple tools. By creating the model once, any type of script can be subsequently generated, significantly reducing the time and cost of implementation. Capgemini has already achieved over 160 implementations with more than 75 customers and continues to invest in these accelerators because they enable a 30 to 40% improvement in efficiency within a span of two to three years. These implementations further help the company stand out among the competition, win new deals, and drive transformation across its customer base.

A skilled workforce is needed to implement Smart Testing solutions and demonstrate New Ways of Working flawlessly, and in this regard, many companies are constrained by traditional QA engineers. To this end, Capgemini is onboarding only Quality Engineers and SDETS, has invested time and effort in reskilling its existing workforce and in training new recruits in full-stack development so that they may be suitably assigned wherever their skills are required. Capgemini benefits from these investments because over 40% of its current workforce is estimated to be digital ready, which is higher than the industry average of less than 20%. This training investment further facilitates knowledge transfer between the company and each client's workforce, thereby transforming clients' business.

### **Driving Growth on All Fronts**

While test vendors have developed smart testing solutions in response to global Mega Trends, many competitors find it challenging to convince customers because they are unaware of the value add to their business cases. Capgemini's AI solution, Cognitive QA, combines Intelligent QA automation and Smart QA analytics to allow Predictive QA dashboards and Cognitive QA platforms. With this Cognitive QA solution, Capgemini offers

many features, such as test case deduplication and prioritization based on a risk index. Capgemini has already implemented this solution for more than 15 customers, with over 30 additional customers viewing demonstrations and in the process of adopting this solution. Similarly, even though most companies view RPA as a business process management (BPM) solution, Capgemini employs RPA to solve complex challenges in software testing. One of Capgemini's prospective Telecom customer, , found that its existing system needed four days to create test reports. Using a completely automated, bot-driven RPA solution, Capgemini reduced this period to nearly 15 minutes, enabling more than 30 such reports to be created in a month. Through this solution, Capgemini improved the customer's testing process efficiency while reducing testing spends.

These capabilities further strengthen Capgemini's relationships with its long-term customers. For example, Capgemini recently renewed some of its long-term testing engagements that have been active for over 12 years, where Capgemini retained all traditional testing activities and added some newer features and additional testing work to these deals. Within the global software testing industry, some of Capgemini's competitors have different strategies to drive growth. For example, while some competitors are dissolving their center of excellence (CoE) model in favor of headcount-based activities, other competitors are investing in advanced technologies and newer ways to manage testing engagements. In contrast, by providing customized solutions based on its managed services model, Capgemini continues to invest in innovation, advanced technologies, and next-generation services to improve existing processes and enable customers' rapid and high-quality digital transformation.

Capgemini offers other flexible delivery models, such as a pay-per-use model for on-demand services and outcome-based engagements that rely on specific outcomes to be achieved. With a high number of architects driving these activities, Capgemini is winning newer quality engineering deals that drive fundamental changes in the way organizations operate. Because Agile and DevOps transformation necessitates a shift in culture, mindset, and the way customers adopt services, successful integration within the collaborative community is a prerequisite, and Capgemini is well positioned to lead in this regard. Capgemini's Rightshore™ philosophy ensures a good mix of near-shore and off-shore resources to accomplish the desired tasks. In addition, by not offering a one-size-fits-all solution, Capgemini can start its due diligence and process validation while the transition is already in effect.

Whether the engagement is a quick venture, a short-term engagement, or a long-term engagement, Capgemini ensures that both service provider and customer are aligned with the vision because they jointly create the transformation roadmap. While the trend is changing rapidly though some of the customers in 2018 were either not investing enough to automate their testing processes or automating only few select areas to drive values. Capgemini accelerated that process using its assets and homegrown solutions to drive automation levels by upwards of 40% in a short period of time. Most transformation roadmaps are set for a three-year period; however, Capgemini's plan is dynamic rather than fixed because dedicated transformation offices run in parallel with the delivery. Each

office is run by a transformation champion who understands and brings in new best-of-breed solutions that are industrialized and applied to ensure rapid implementation. With a periodic governance of six months or even less, value-added benefits and savings generated by implementing Capgemini's solutions are regularly presented to each client. By constantly comparing the implementation to the pre-desired targets, Capgemini tracks the progress of the transformation to ensure successful outcomes. In this manner, potential challenges are identified early and rectified to ensure the implementation process remains aligned with the overall vision.

For instance, while implementing Cognitive QA for a customer, Capgemini encountered abysmal data quality. By identifying, understanding, and reviewing this challenge early in the process, Capgemini ensured that the implementation schedule was not disrupted, which is vital for Agile and DevOps execution. Capgemini reviews the progress with customers at the end of the year because visions can be changed or upgraded every year. Some activities may be stopped if they become irrelevant, while newer initiatives can evaluate other parameters or upgrade the testing process in line with the changing vision. Capgemini supervises these customer relationships by assigning a vice president (VP) to one or more customer accounts. These VPs have an independent view of each contract and commitment and periodically review both the work being conducted and what is being conveyed to the customer. With these various safety nets in place, Capgemini can adapt to changing customer requirements and further deliver superior customer value.

For example, large global bank engaged with Capgemini on a quality improvement initiative in 2018 and wanted to accelerate its vision while reducing the cycle time. All of Capgemini's solutions have allowed Bank to automate rapidly and optimize the testing process, thereby reducing the required headcount by 245 people, who were then repurposed to other engagements. For 2019, this testing engagement has been upgraded to include zero defect delivery, zero touch execution, and near-zero quality assurance because of the implementation of Capgemini's AI and ML solutions. In this manner, Capgemini is well positioned to manage its resources while helping customers transform digitally. Based on these capabilities, existing customers continue to remain loyal to Capgemini, and prospective customers are more easily convinced to contract with the company.

Frost & Sullivan research indicates that Capgemini's customer base, which includes over a third of the Financial Times Stock Exchange (FTSE) 100 and Fortune 500 companies, highlights Capgemini's expertise in this industry and marks it as a superior value provider to customers. In addition, the company's exceptional achievements are reflected in its financial performance. For example, the company realized a testing services revenue growth of approximately 12% in 2018, posting revenue of over \$1.2 billion. The company continues to achieve success with its homegrown digital solutions in 2019, posting half-yearly revenue growth in all regions, and continues to increase its operating margins, despite major geo-political headwinds. This growth in major financial metrics clearly highlights Capgemini's strengths and capabilities in this global market.

## *Conclusion*

Capgemini has one of the largest dedicated software testing practices worldwide, with over 200 offices, 12,000 professionals, and \$1.2 billion in revenue. With the advent of AI- and ML-based testing solutions, many customers have difficulty navigating the large sea of testing service providers. Against this backdrop, Capgemini's capabilities stand out because its industrialized homegrown solutions provide real-world benefits to customers, with efficiency improvements, reduced time to market, and lower cost of implementation. Through its wide breadth of testing service options, flexible delivery models, and flexible operating processes, Capgemini provides superior value to both its existing and prospective customers.

With its strong overall performance, Capgemini has earned Frost & Sullivan's 2019 Company of the Year Award in the global software testing services industry.

## 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 non-industry peers) requires a company to demonstrate excellence in growth, innovation, and leadership. This excellence typically translates into superior performance in three key areas—demand generation, brand development, and competitive positioning—that serve as the foundation of a company’s future success and prepare it to deliver on the 2 factors that define the Company of the Year Award: Visionary Innovation and Performance, and Customer Impact).



## Understanding Company of the Year

Driving demand, brand strength, and competitive differentiation all play critical roles in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation and Performance to enhance Customer Impact.

## Key Benchmarking Criteria

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated each factor according to the criteria identified below.

### Visionary Innovation and Performance

- Criterion 1: Addressing Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Implementation of Best Practices
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Financial Performance

### Customer Impact

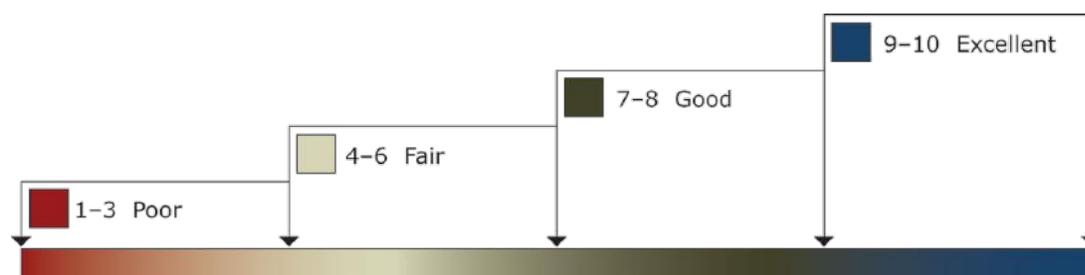
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

## Best Practices Award Analysis for Capgemini

### 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 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 considers Visionary Innovation and Performance and Customer Impact (i.e., 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, Frost & Sullivan has chosen to refer to the other key participants as Competitor 1 and Competitor 2.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
<b>Company of the Year</b>	Visionary Innovation & Performance	Customer Impact	<b>Average Rating</b>
<b>Capgemini</b>	<b>9.5</b>	<b>9</b>	<b>9.25</b>
Competitor 1	9	8.5	8.75
Competitor 2	8.5	8	8.25

### *Visionary Innovation & Performance*

#### **Criterion 1: Addressing Unmet Needs**

Requirement: Implementing a robust process to continuously unearth customers’ unmet or underserved 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 revenue, 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 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**

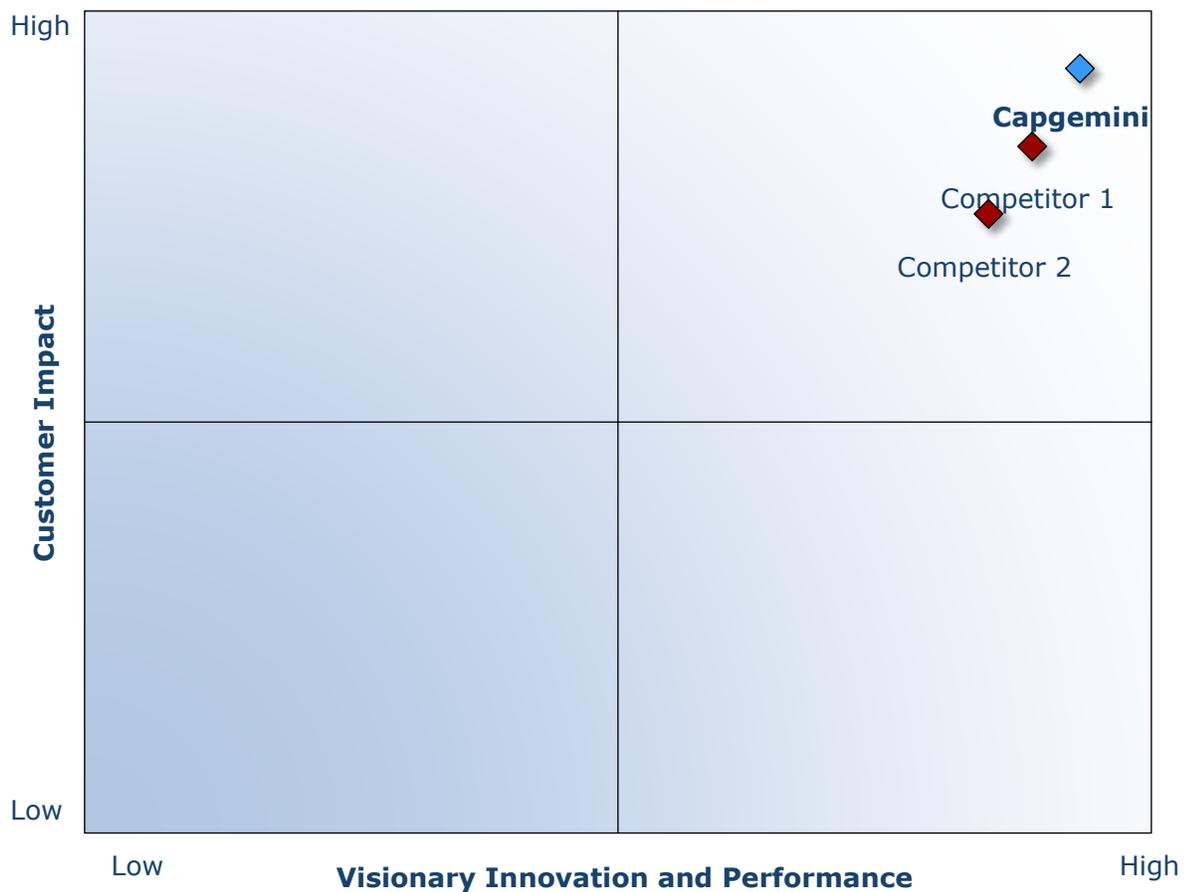
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

**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 <b>Monitor, target, and screen</b>	Identify award recipient candidates from around the world	<ul style="list-style-type: none"> <li>• Conduct in-depth industry research</li> <li>• Identify emerging industries</li> <li>• Scan multiple regions</li> </ul>	Pipeline of candidates that potentially meet all best practices criteria
2 <b>Perform 360-degree research</b>	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> <li>• Interview thought leaders and industry practitioners</li> <li>• Assess candidates' fit with best practices criteria</li> <li>• Rank all candidates</li> </ul>	Matrix positioning of all candidates' performance relative to one another
3 <b>Invite thought leadership in best practices</b>	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> <li>• Confirm best practices criteria</li> <li>• Examine eligibility of all candidates</li> <li>• Identify any information gaps</li> </ul>	Detailed profiles of all ranked candidates
4 <b>Initiate research director review</b>	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> <li>• Brainstorm ranking options</li> <li>• Invite multiple perspectives on candidates' performance</li> <li>• Update candidate profiles</li> </ul>	Final prioritization of all eligible candidates and companion best practices positioning paper
5 <b>Assemble panel of industry experts</b>	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> <li>• Share findings</li> <li>• Strengthen cases for candidate eligibility</li> <li>• Prioritize candidates</li> </ul>	Refined list of prioritized award candidates
6 <b>Conduct global industry review</b>	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> <li>• Hold global team meeting to review all candidates</li> <li>• Pressure-test fit with criteria</li> <li>• Confirm inclusion of all eligible candidates</li> </ul>	Final list of eligible award candidates, representing success stories worldwide
7 <b>Perform quality check</b>	Develop official award consideration materials	<ul style="list-style-type: none"> <li>• Perform final performance benchmarking activities</li> <li>• Write nominations</li> <li>• Perform quality review</li> </ul>	High-quality, accurate, and creative presentation of nominees' successes
8 <b>Reconnect with panel of industry experts</b>	Finalize the selection of the best practices award recipient	<ul style="list-style-type: none"> <li>• Review analysis with panel</li> <li>• Build consensus</li> <li>• Select winner</li> </ul>	Decision on which company performs best against all best practices criteria
9 <b>Communicate recognition</b>	Inform award recipient of recognition	<ul style="list-style-type: none"> <li>• Present award to the CEO</li> <li>• Inspire the organization for continued success</li> <li>• Celebrate the recipient's performance</li> </ul>	Announcement of award and plan for how recipient can use the award to enhance the brand
10 <b>Take strategic action</b>	Upon licensing, company able to share award news with stakeholders and customers	<ul style="list-style-type: none"> <li>• Coordinate media outreach</li> <li>• Design a marketing plan</li> <li>• Assess award's role in strategic planning</li> </ul>	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.



### 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>.