FROST & SULLIVAN

THE SENTE GROUP®
What's next in test.®

2017 North American
Test Resource Management Software
Customer Value Leadership Award

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Background and Company Performance

Industry Challenges

Increasing product complexity combined with industry consolidations that have taken place over the last 10 years have led to their own set of challenges for test operations. In a marketplace environment that is changing rapidly and where competitive pressures dictate the importance of quick responses, test operations are becoming overly burdened by their complexity, involving multiple systems that would better serve their users tactical requirements, management's strategic interests and the requirement of speed achieved when integrated. Most of these systems, were developed for another groups' purpose, for instance property management, project management or facility maintenance. Nothing is really purpose built for managing large test organizations and none of the systems that have been developed are connected; they do not share data or have common workflows. No singular process unites them. Users of test equipment are inefficiently managing the complexity of their test operations, which is often costly and slows down their business processes. These disconnected systems reflect and reinforce organizational silos and lead to a culture of "hoarding" and "me" versus a culture of collaboration and "we". Incentives that are meant to control costs actually add cost and further slow down processes. Therefore, all these historically organizationally dispersed and disconnected systems must connect to each other as well as interact and coordinate with the systems of third-party test companies, such as test equipment original equipment manufacturers (OEMs), rental companies, calibration and repair service providers as well as third party test companies.

In addition, supply chain management requires refinement. Companies need to find ways to become efficient and standardize their processes and tools across test departments and locations. Companies need a way to ensure cooperation and remove organizational silos to connect divisions including research and development (R&D), manufacturing, and field service in the value chain. Users of test equipment across locations frequently have to access different systems for capital, budget, asset management, project management, work requests, and procedures—a daunting task especially for large, dispersed companies with large test organizations spread across multiple sites.

Every place a manual process is used to share data or coordinate test activity between organizations barriers to collaboration are erected and cost is added. On one end of the spectrum is the opportunity cost of poor resourcing decisions because of data that is inaccurate, incomplete or too late arriving to be relevant for key decisions followed by manual and ineffective workflows. In this scenario "just in case" excess capacity of people and equipment is built so schedules aren't negatively affected.

The other end of the spectrum is keeping your operating costs relatively lower by not building JIC capacity but then ultimately missing schedules because the complexity of the environment make planning difficult. Both scenarios are unacceptable.

A digital thread is needed to manage the complexity of test operations working with different processes and systems. Moreover, a means to efficiently collect and analyze the data that comes from disparate systems must be executed efficiently. Currently, test engineers lose significant time collating data because the information is available in different formats including notebooks, spreadsheets, and various disconnected databases. The combination of non-standard and manual processes in the context of a high demand to meet program schedules and milestones leads to a culture that hoards equipment, services, people and schedules driving costs high and leading to a very frustrating workplace. Without an alternative, from a process or tools perspective, hoarding is the lowest cost option - which is why cultures have evolved this way.

In such a scenario, the primary concerns for large test organizations developing complex products include the ability to deal with unique company cultures that have evolved from these various practices and incentives. They need solutions that enable them to: forecast future demand for test equipment and services, leverage data and workflows from various systems to drive faster and more effective decision making and identify and eliminate the causes of delay in their tests, whether stemming from an asset performance issue, a flawed procedure or a failure of the unit under test. A key challenge is to find ways to manage highly complex and non-standard sets of processes. While companies are striving to reduce their overall costs, many end up using inefficient, common solutions like asset tracking software to drive costs down and sometimes actually drive cost up. The need is critical for solutions that go beyond asset tracking capabilities and allow companies to work more effectively, strategically, and competitively. An ideal solution will help them manage the complexity of their test operations reducing the cost of multiple non-standard processes and software tools and amplifying test operations full capability as a competitive advantage. It will enable a team to quickly assess their constantly changing situation and adapt to the environment. The system must enable a level of teamwork previously not achievable. Ultimately, a sound understanding of organizational dynamics and effective systems integration with important value stream processes is the key to transformative change and improved efficiencies.

Complex test operations must eliminate silos by adopting a system that transcends those already in use. Connecting the digital thread in test enables digitization and performance measurement of the whole operation. This brings forth a large opportunity for the company's supply chain or procurement function to reduce costs by using their supply base more strategically. Instead of using the supply base for overflow when internal capacity is eclipsed, they can be used to strategically place non-core activities with strategic suppliers. This growth opportunity for service providers also leads to significant cost reductions and adaptability of the test organization. They can expect improved utilization rates, reduced downtime, and improved project scheduling, user assignments, measurement data collection, and future assignment of test equipment. This translates into clear savings, standards definition, and operational improvements. Companies with comprehensive service offerings will be able to successfully differentiate themselves and increase their market share.

Customer Impact and Business Impact

Performance Value

The Atlanta-based Sente Group (Sente) leverages its technical expertise and resources to deliver the timely Test Resource Management™ (TRM) solution that is radically changing the management of systems and operations in organizations that use test equipment. Focused historically on the aerospace and defense sector, the company continues to extend from its asset management capabilities providing a more comprehensive system to customers who need of a solution of this caliber. Sente's advanced and holistic approach delivers test resource management capabilities covering the management of equipment, technical staff, test knowledge, project management, supplier integration and knowledge sharing while retaining its core asset management component. In other words, the company works closely with its customers to eliminate waste in their individual test environments by optimizing the cost of operations where test equipment is used.

Sente's focus on company culture contributes to many of their successes. Their study of cognitive science, micro economic principles and language/narratives leads to a more scientific approach to culture than most think possible and that approach leads to ground breaking results. Sente's software tools both measure cultural behaviors and provoke new, more effective cross-silo behaviors. As a result, Sente's services have translated into higher labor productivity and operational efficiency for customers, saving them millions of dollars while making their operations much more effective and adaptable. These savings and improved outputs are made possible by enabling high levels of trust to develop between previously siloed organizations increasing their cooperation and sharing, by making personnel more productive through the elimination of non-value added tasks as well as optimizing the asset base and augmenting it with relevant equipment and test knowledge. The collaboration and feedback up and down the value stream, from project management to test labs also leads to increased first pass yield on tests reducing the cost of having to re-test products.

Moreover, the company helps clients better assess test equipment rental requirements, understanding how much non-core testing they should outsource and optimizing equipment service levels by, among other things, gauging mean time between failure (MTBF) data. Part of this customer-focused process involves helping clients identify opportunities for increasing the coordination of equipment and using third-party test companies more strategically. The company works closely with third-party service companies' systems to ensure customers gain new value and can better manage the complexity of their test operations.

There are two examples that highlight the evolution of Sente's solutions over the years to be more complete and holistic. The first is their eLab Log module. The output of test organizations is typically in the form of reports that summarize test results and provide the artifacts supporting the reported outcomes. Often times, the data required for those

deliverables come from multiple systems, spreadsheets and hand-written log books. Engineers put in an inordinate amount of time in creating data packages and when testing is complete and customers are waiting for the report, the data collection process is frustratingly long and inhibits responsiveness to the end customer. This new method of data collection is particularly valuable when new problems show up in the field and historical data needs to be reviewed again. Its immediate availability and digital format can virtually eliminate the potential for thousands of hours of searching and collating. If users want to know exactly what assets were used on the test, their calibration/maintenance status, who performed the test, on what units, for which programs and what the results were the eLab Log integration with other modules makes this query simple - reducing the time from test completion to report generation by 50 percent. A side benefit includes that technical labor working in one facility or location can easily be shared with another facility or location and know exactly where to find things and how to perform the job on that site as it will have been standardized across departments and locations.

The second example is CoordinateTRM test coordination software. This tool enables the management of program schedules and milestones with test assets, technical personnel and the support services required to complete the test. Many companies manage program schedules and test schedules using different tools that aren't capable of effectively sharing data, like MS Project, White Boards and spreadsheets. This means performing capacity analysis and assessing historical performance is difficult. Disconnected calibration, maintenance, facilities and asset databases only exacerbate the difficulties. In this environment, companies pile up "just in case" capacity of equipment and people so that they can cope with changing test demand. CoordinateTRM enables real-time analysis of capacity and availability in the context of multiple and constantly shifting program schedules for testing. When applied to large test capabilities like: wind tunnels, EMI chambers and specialized test cells or test stands, a much more efficient and broad sharing of resources and reduction of cost per test and cycle time is possible. Consolidation of these large test capabilities also leads to significantly reduced facility footprints - virtually eliminating tactical overflow testing costs that historically have been outsourced to third parties in lieu of a more strategic working relationship.

Frost & Sullivan lauds Sente's ability to save customers significant engineering personnel time and effort.

Customer Ownership Experience

In a testing landscape where companies struggle to coordinate their numerous and disparate groups, processes and systems, Sente takes pride in the efficiency and effectiveness that their software and practices produce for customers so their customers can focus on core competencies and no longer waste time on administrative tasks such as reproducing project schedules or managing equipment calibration. The Sente Group's primary goal is to help customers save time, money, and manpower by digitizing their test operations. The comprehensive TRM solution includes initial capacity and demand planning,

and is best thought of as a holistic solution connecting people, processes, data, and test equipment. In particular, the TRM solution is organized to provide people in various roles the tools relevant to them: the PracticeTRM™ Practitioner Suite for people managing the test resources, the AccessTRM™ User Suite for people using the test resources, the ManageTRM™ Manager Suite for those specifying and managing the desired outcomes, as well as additional test equipment management tools. The company is currently working on its next-generation solution, Scireo which will be offered as SaaS enabling their enterprise system to be useful in both large and small environments.

While competing companies provide test asset management solutions that offer simple inventory tracking capabilities to customers, Sente focuses on providing a variety of integrated solutions that bring efficiency and effectiveness to test operations and that enable improved alignment with the supply base. Sente's TRM tools have improved utilization rates of test assets (with cases using Scireo exceeding 50%), reduced downtime caused by unnecessary equipment requests—in some cases customers have pared down from 16 weeks to less than 1 day—and enhanced program schedules.

Frost & Sullivan finds that Sente's TRM solution sets a new benchmark in customer experience by increasing collaboration and communications among all participants of a test program they drive cycle time and cost efficiencies, optimizing asset utilization and technical labor productivity, and applying best practices in knowledge management to increase speed and drive standardization of test resources.

Customer Service Experience

Sente provides a unique customer service and support experience by delivering a solution that empowers customers to streamline data from various systems and databases—including asset databases, calibration databases, and project management databases—and access it from one place to optimize strategic sourcing management. Frost & Sullivan commends the company's differentiated service that provides a comprehensive customer service experience through the entire test equipment lifecycle, including support in demand planning, resource management, reduction of maintenance costs, disposal of the test equipment, and management of human and organizational dynamics. Indeed, Sente is disrupting the market by offering a unique service in which customers have access to all the information they need in a single system that delivers powerful decision making capability when it comes to both physical and human resource capacity planning.

Sente's distinctive process framework helps its customers focus on their core competencies rather than spend time on support test functions and administrative tasks. The TRM solution relieves engineers from taking on administrative non-value added activities by automating those tasks in its systems, thereby increasing its customers' cost-savings and competitiveness. Sente's TRM solution sets a new standard in customer experience with clients already enjoying capital budget reductions of 50 to 75% and maintenance and support cost reductions approaching 50%.

Customer Acquisition

Founded in 1997, Sente is a leading solution provider for the aerospace, defense, and semiconductor industries and is looking to expand into medical device companies as well. The company is differentiating itself by going beyond offering traditional test asset management and tracking capabilities, enhancing its value proposition by offering deep expertise in and tailored solutions for their customers' operations that use test equipment – from development to qualification and manufacturing test as well as processes where test supports the mission but isn't the mission like repair and overhaul facilities or failure analysis labs. In this way, Sente provides customers a sense of reliable and trusted performance, which is reflected in the company's increasing customer acquisition rate.

One of the key factors contributing to Sente's success is its strategic orientation to its mission of driving productivity in its customer's test environments. While many in the industry would have labeled them as an "asset management" company, strong focus on their mission has lead the company to evolve to much more than an asset management company. The company helps clients manage the complexity and cultural challenges they face by having solutions that support an entire test program focused on planning and coordination with all stakeholders in the customers' test environments. Its approach leads to the development of an integrated solution with superior resource planning, execution and reporting functions. That said, Sente, through their unique software solution, Scireo™, delivers a clear simplification of processes under a test program - generating major productivity improvements for organizations, which has resulted in a strong new customer base.

Growth Potential

Most of the existing asset management solutions available in the market are limited, and a number of users approach Sente from a thought leadership perspective to help them understand what their requirements should be to produce the significant outcomes Sente produces.

Sente caters to the unique requirements of many test equipment users and is ideally positioned to deliver a best-in-class test resource management software solution. Sente will continue to focus on the 3 key areas it has identified: test resource management, knowledge, and program coordination, directed toward making an impact on the cost-savings and effectiveness of large organizations using test equipment. However, Sente's attention has expanded from focusing on reducing the cost of equipment with their asset management solution to other areas such as reducing facility footprint, improving labor productivity, reducing cycle times and improving responsiveness. Integrating these new capabilities yields much higher total savings for customers and increased effectiveness of the test process.

In comparison to standard software installation, major growth opportunities arise from its revenue model that will allow medium organizations to use software that otherwise they could not afford due to the high cost of licensing. Sente is evolving its business into a subscription-based approach so as to operate on a software-as-a-service (SaaS) model. Frost & Sullivan understands that by adopting this business model, users will receive the application ready for use, thus reducing the time spent on installation and configuration. Also, upgrades will become available during the solution lifecycle. The flexibility of a SaaS model means the price will depend on the size of the test organization, the number of users, and the number of projects, which makes adoption possible for a much broader customer base.

Conclusion

Sente's proprietary Test Resource Management™ solution delivers an integrated and holistic approach for test resource management with unique capabilities that allow large organizations in the aerospace and defense, semiconductors, and life sciences industries to manage and streamline the complexity of their test operations and to be more effective, competitive, and strategic. The company's customer-centric approach to tailoring its solution for individual testing needs coupled with its forward-thinking plan to offer the solution on a SaaS model support Frost & Sullivan's conclusion that this company leads the industry in placing customer value at the forefront of its success.

As a market leader with a visionary management team and an integrated service offering, Sente is well positioned to capture the huge revenue potential from such services. Sente has demonstrated success with its blooming Test Resource Management™ solution based on a 1) unique software capability to optimize the cost of operations and manage the complexity of test operations and 2) their strategic implementation approach which produces vertical and horizontal integration and leads to a highly responsive test process. Sente's proprietary Test Resource Management™ solution has no direct competition in the market. The company is committed to improve the business model used in the T&M market and dramatically change the industry with its comprehensive service delivery to provide access to all the information customers need in a single system that delivers powerful decision making capability when it comes to both physical and human resource capacity planning.

For its strong overall performance, Sente Group has earned Frost & Sullivan's 2017 Customer Value Leadership Award.

Significance of Customer Value Leadership

Ultimately, growth in any organization depends upon customers purchasing from a company and then making the decision to return time and again. Delighting customers is, therefore, the cornerstone of any successful growth strategy. To achieve these dual goals (growth and customer delight), an organization must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.

Understanding Customer Value Leadership

Customer Value Leadership is defined and measured by two 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 long shelf life. This dual satisfaction translates into repeat purchases and a high lifetime of customer value.

Key Benchmarking Criteria

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

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

Business Impact

Criterion 1: Financial Performance
Criterion 2: Customer Acquisition
Criterion 3: Operational Efficiency
Criterion 4: Growth Potential
Criterion 5: Human Capital

Best Practices Award Analysis for The Sente Group

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

9–10 Excellent

7–8 Good

4–6 Fair

1–3 Poor
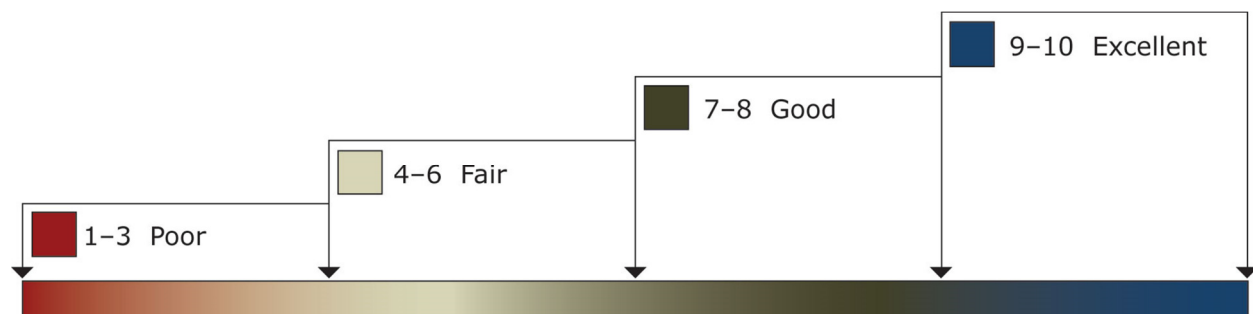
The Decision Support Scorecard is organized by Customer Impact and Business Impact (i.e., These are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard.). The research team confirms the veracity of this weighted scorecard 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.

It should be noted that we found no other companies to compare with Sente as their unique Test Resource Management software suite has capability that produce outcome so far not found in the marketplace.

Measurement of 1–10 (1 = poor; 10 = excellent)			
Customer Value Leadership	Customer Impact	Business Impact	**Average Rating**
The Sente Group	**9.2**	**9.0**	**9.1**

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.

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.

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