

TRANSFORMING THE BUSINESS OF TEST

# SENTE



## MANAGING YOUR TRANSFORMATION PROCESS

How critical is getting this right to your success? Do you have the strategies and tactics you need?



## NAVIGATING THE 4TH INDUSTRIAL REVOLUTION

Do your teams have the mindset and technology required to compete



## ARE YOU UTILIZING YOUR EQUIPMENT PROPERLY?

Are your costs two to four times higher than they need to be?

FROST & SULLIVAN

BEST  
2017 PRACTICES  
AWARD

NORTH AMERICAN  
TEST RESOURCE MANAGEMENT SOFTWARE  
CUSTOMER VALUE LEADERSHIP AWARD

THE  
SENTE  
GROUP

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WELCOME

# Hi,

Thank you for taking the time to check out The Sente Group, Inc. and to see if we can help you produce the outcomes you are after in your business.  
Speed. Lower Costs.  
Innovation.

We are living through a time of unprecedented change in technology and those changes are having profound impacts on the way we live and work. For the first time in my career almost every established enterprise is in the midst of a “transformation” effort. It used to be that if a company was in the midst of a “transformation” everyone knew why. It was obvious from financial statements and stock prices. This is not the case today. Many historically successful companies know they need to move faster, reduce their costs and increase their innovation or they risk becoming the next Blockbuster Video, Inc.

For over 20 years The Sente Group has focused on making

breakthrough improvements in the complex and costly test environments of companies that manufacture similarly complex products. These environments include everything from development and qualification test to manufacturing test and tests done as part of maintenance and overhaul operations. In these environments we’ve reduced capital budgets and associated equipment costs by over 50% while increasing the responsiveness and resilience of processes by 30%. We do this using a set of practices we call Connected Test.

Connected Test uses our award winning software suite, Scireo® which works

symbiotically with our strategic services to shift your culture away from old ineffective habits that are produced by historical structures and incentives and drive up costs – like hoarding – and toward practices that transcend organizational silos creating a resilient network of test capabilities that are responsive to changes, affordable and open a space for innovation of new practices.

At The Sente Group we are passionate about helping our customers produce significant results that have real impacts on their business and career. We look forward to seeing how we can help you.



**PAUL MCNAMARA**  
FOUNDER/CEO

Paul's work with Fortune 150 companies has helped those organizations achieve significant improvements in test-related cost and cycle time, while shifting unproductive cultural barriers along the way.



## TEST RESOURCE MANAGEMENT, WORKING TOGETHER BETTER

Test Resource Management is a new category of solution focused on helping organizations significantly invested in test (knowledge, people, processes and equipment) become a source of competitive advantage to their enterprises

**T**est Resource Management (TRM) is a set of practices pioneered by The Sente Group with our Scireo solutions enabling test organizations (i.e. those organizations significantly invested in test knowledge, processes and equipment) to move with greater velocity, higher quality and lower cost.

We developed TRM to help our customers compete in their market

space. They have always been after lowering costs, but in the last 5 to 10 years their focus has increasingly shifted to moving with greater velocity. When we speak with them about their dissatisfaction with their current organization performance, what is always revealed are: old practices and methodologies, that, while once competitive, are now not sufficient for the pace of the markets and are deeply embedded in their organization.

Time has institutionalized these out-dated practices and methodologies and made them invisible to everyone in the test organization. They are “...how we do what we do...”

Unquestioned by all but the most inquisitive. These old practices and methodologies perpetuate the “over the wall” coordination, incomplete communication and equipment hoarding that are at the root of

the organization's lack of velocity. Independent, single purpose tools and spreadsheets have developed around these practices reinforcing them while increasing costs and delays.

To increase speed and reduce cost requires processes working together seamlessly - integrated. Not the independent tools with disconnected data sources and workflows, that make the enterprise rigid when today's marketplace requires resilience and speed.

Test Resource Management practices and tools integrate functionality across historical organizational boundaries that span the larger enterprise.

With TRM, changes in project schedules will show cascading effects on test resources (employees, suppliers, assets etc.) that must be understood so constraints can be identified, contingencies planned and unnecessary costs eliminated. Conversely, equipment downtime

issues require a quick assessment of potential schedule impacts now and in the future as well as analysis of same or similar equipment availability across departments, divisions or the enterprise to maintain or improve schedule outcomes.

This integrated tool suite becomes a new structure that makes increasing operational velocity possible - but it's not enough.

The TRM software tools help you lead a transformation across your organization because you now have access to an integrated, multi-purpose, ubiquitous tool set that contains the "single version of the truth" you require to build the trust and collaboration that leads to speed and growth.

Users of the new software will require training in the new tools, to understand what they make possible - outcomes that previously couldn't be achieved. We can help you with this. Successful adoption of Test Resource Management practices and tools will mean your test organization is beginning its journey to increased competitiveness and will become a source of competitive advantage to your organization by increasing speed to market, lowering costs and freeing up capital to be invested in new products and capabilities.

Typical results are improved responsiveness and cycle time by 25% to 30%, reduced investment capital requirements from 35% to 75% with up to 50% reduction in operating capital required to support test, improved customer and employee satisfaction.

With these results employees are more capable of innovating and with resources freed up investments can be made to turn those ideas into growth for the company and individuals.



**30%**

improvement in  
responsiveness

**40%**

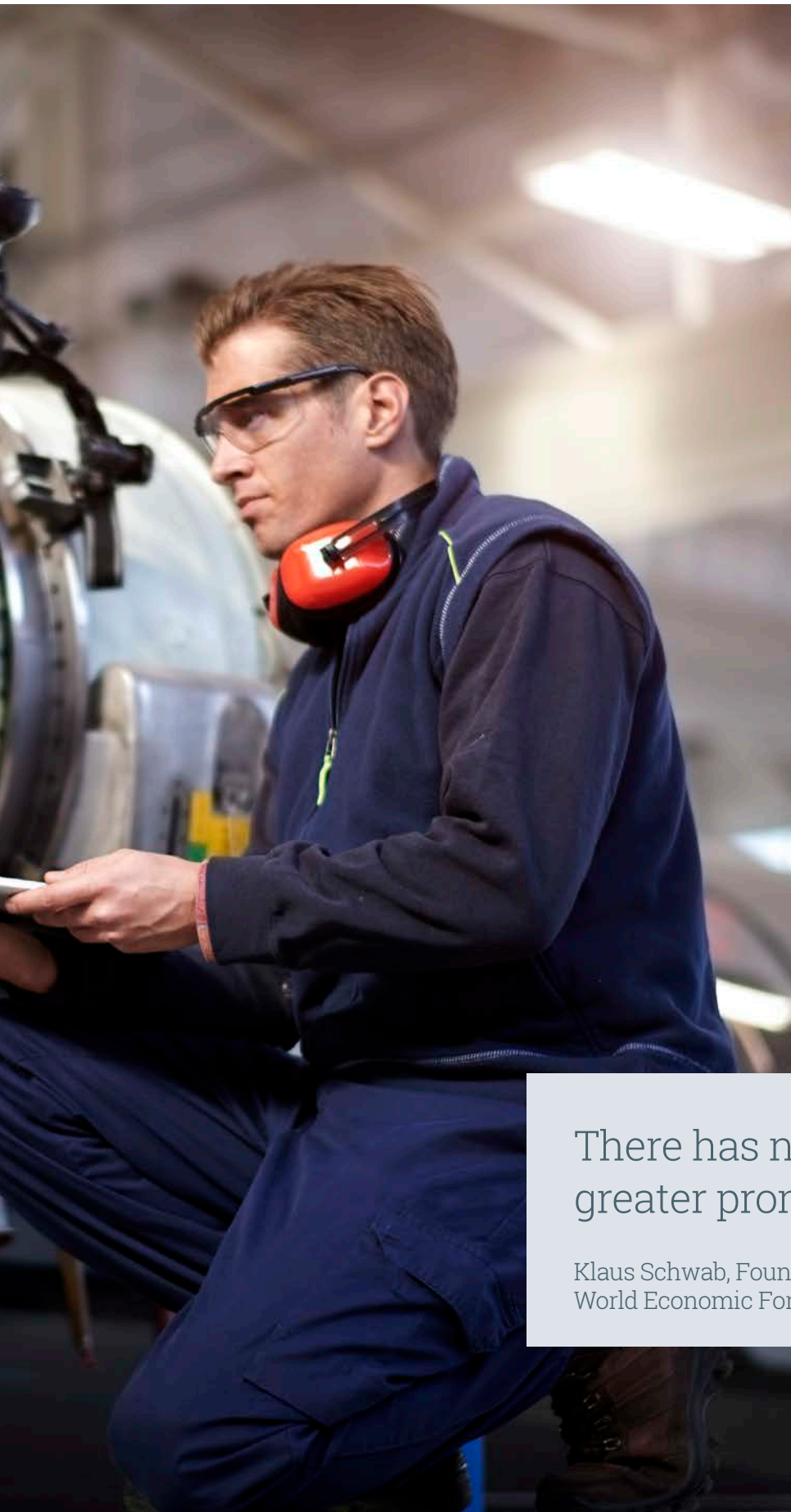
reduction in  
equipment  
obsolescence risk

**50%**

reduction in  
operating capital



# WHY TEST RESOURCE MANAGEMENT?



There's no denying it; we are living in the largest, most technologically advanced and fast changing global marketplace in human history. The World Economic Forum calls this time the Fourth Industrial Revolution.

The Fourth Industrial Revolution is a new competitive situation that will require new practices and new ways of thinking in order to stay competitive. The positive and negative consequences are clear when you compare companies like Apple, Google and Facebook with Blockbuster, Motorola and Kodak. Companies and individuals can refuse to change, but they can't refuse the consequences.

Today CEOs and senior executives are being ousted for not moving their companies forward fast enough, and almost every major company is in the middle of a major transformation effort. The business of test is no different. Executives responsible for test processes in engineering, manufacturing and repair/maintenance functions have a daunting task.

There has never been a time of greater promise, or greater peril.

Klaus Schwab, Founder and Executive Chairman,  
World Economic Forum



The test function is almost always the last step before product launch and often gets a fair amount of unwanted attention when schedules are missed or costs are above budget. In order to deliver on time and under budget, test processes and organizations have to be able to cope with:

- Constantly changing schedules and priorities
- A complex set of resources (people, equipment, facilities and services) that lead to unforeseen delays
- A non-standard test infrastructure that is prone to downtime
- Disconnected software and processes that reflect and reinforce the organizational silos of the business
- Incomplete and inaccurate resource data
- Cultural behaviors that are no longer competitive or effective
- An organization skilled at and busy with test that has difficulty imagining a new way

The key to success is to establish, build, and mature a resilient network of test capabilities (people, knowledge, facilities, and equipment) that transcends the silos and enables significant increases to speed, innovation, cost savings, revenue recognition, and growth.

By utilizing Scireo®, the expert test management platform we developed, you'll gain ubiquitous access to pertinent data and workflows, enabling you to make fact-based decisions.

## FOCUSED ON RESULTS

The Sente Group is completely focused on transforming test organizations into high-performing business operations. When you partner with us, you can expect tangible, breakthrough results. No organization in the world better understands the complex and costly nature of test organizations. For more than 20 years the world's leading high-tech companies count on us to produce transformational results that grow as practices mature helping to free resources to accelerate strategic projects. If you're ready to achieve success without the disruption and drama, we're ready to transform your organization.



## RESULTS

### 50% TO 75% CAPITAL BUDGET REDUCTIONS

Stop spending money in areas that don't truly need it.

### 30% IMPROVED RESPONSIVENESS

Make issues visible, evaluate contingencies and act quickly.

### 400+% EQUIPMENT UTILIZATION

Get the most out of your equipment.



# SENTE HELPS A FORTUNE 150 DEFENSE CONTRACTOR ACHIEVE DRAMATIC IMPROVEMENTS

THE PRESSURE IS ON FOR AEROSPACE & DEFENSE COMPANIES.



Demand is driving many defense contractors to develop strategies to reduce their costs while cutting their program schedules and time to market. That's why every company must make the best possible use of existing resources. This is the story of how one business is winning the battle . . . with the support of The Sente Group.

## THE CHALLENGE

A corporate-wide assessment of capital assets uncovered a big problem: much more test equipment than anticipated in the customer's engineering labs. A deeper dive brought the issue into sharper focus:

- 24 separate, localized spreadsheets used to track test equipment in 30+ labs.
- Nearly half the equipment was no longer supported by the OEM, putting a number of projects at risk.
- No standardized test equipment across the labs, decreasing the likelihood of equipment sharing.
- No standard method for scheduling over 30 test labs.
- Equipment utilization was an unacceptable 9%.

Facing increasing demands for new solutions at lower costs, company leaders knew they needed to act immediately. Engineering productivity and capacity was on the line.

## THE SOLUTION

Sente performed a Quickstart Blueprint, a rigorous yet efficient process for applying our Scireo® software and test management insights to effect rapid change.

Any changes would have to overcome engineers' fears that efforts to more effectively manage their equipment would leave them with less than they needed to do their jobs. That's why Sente's approach incorporated:

- Equipment management tools tailored to fit the needs of the engineering labs
- A broad, enterprise-wide approach that encompasses people, processes and infrastructure
- Identification and training of internal champions to accelerate the transformation effort
- Rigorous operational as well as financial metrics

## THE RESULTS

While the customer's business was growing by 10% year over year, the solution delivered immediate and increasing results. In the first year the following results were produced:

- Utilization nearly tripled, from 9% to 26%.
- Total inventory was reduced by 35%.
- Inventory of unsupported equipment dropped 50%.
- Calibration non-compliance reduced from 8% to 0.3%.
- Engineering workforce increased by 10% to handle new projects—without needing new equipment.
- TRM continues to deliver great results, year after year:
  - Overall utilization has exceeded 55%.
  - Inventory count is still down by 45%—even though business has more than doubled.
  - All laboratories share standard processes and tools for scheduling capacity.



THE FUTURE

# TRANSFORMATION: HUMAN-CENTERED, TECHNOLOGY ENABLED

TRANS·FORMA·TION (NOUN):

A THOROUGH OR DRAMATIC CHANGE IN FORM OR APPEARANCE

So many strategic initiatives are overwhelmed by “cultural inertia” and “poor communications” but nobody really knows what those distinctions mean or what to do about them. Engineers can’t tell you what culture is or what a complete narrative is that avoids “poor communications” the way they can exhaustively

explain how a jet engine or GPS works. The proof is in the results: the devices they design work a very high percentage of the time while their change strategies and communications do not. Success in either endeavor requires knowledge and we are ready to help with ours so you can keep yours focused on the innovation valuable to your customers.

## OUR APPROACH

Humans are creatures of habit. Any person who has tried to break a bad habit knows how difficult change can be. We take a human-centered approach supported by technology to drive changes that have real and measurable business benefits.

Starting with our Scireo® software, we identify habits that need to be changed and create relevant, meaningful incentives to motivate individuals and reinforce new behaviors.

Working together better, your teams can change and compete and survive in today’s fast paced world.

- Fundamental similarities in test organizations have enabled us to develop “tailorable” change strategies.
- Common approaches to engineering and manufacturing provide ways of thinking that can be anticipated.
- Many of today’s habits, traditions and practices are the result of outdated mindsets, that undermine change
- Transformations are complex to undergo, but broader threats in the marketplace require companies to change in order to succeed.
- Employees need a vision of where the company is headed and how change will positively impact them. Once they have the vision they need the coaching to develop and sustain new practices and habits.

# FORTUNE 150 AEROSPACE MANUFACTURER SAVES MILLIONS WITH SENTE TEST RESOURCE MANAGEMENT

THE PRESSURE IS ON FOR AEROSPACE COMPANIES.

Budgets are tight. Quality and delivery demands are tougher, and the pressures of today's global marketplace are growing by the day. That's why every company must make the best possible use of existing resources—and do so immediately. This is the story of how one business is winning the battle... with the support of The Sente Group.

## THE CHALLENGE

1,600 engineers. 140 different projects. All on tight schedules. And always somebody who didn't have the test equipment they needed, when they needed it.

What to do? For many individual engineers, the answer was to stockpile any equipment they could get their hands on—"just in case." But hoarding only created more problems:

- Time wasted searching for equipment
- Unnecessary equipment purchases
- An abundance of obsolete equipment
- Equipment past due for calibration
- High value space wasted storing assets
- Time and resources taken away from high value work like developing and bringing new products to market

Equipment sat idle in nooks and cabinets across the company, pushing utilization down to 15% and costing the company as much as \$10M per year in excess costs.

At a time of strained budgets, the situation became urgent.

## THE SOLUTION

The only way to raise that utilization rate and cut those related costs: Start getting engineers the equipment they needed on time by enabling them to share effortlessly. It took the holistic approach of a Test Resource Management™ solution from Sente, including:

- A refined set of practices for coordinating equipment between projects and programs.
- Sente's sophisticated Scireo® software that enabled the process workflows and put important decision

making data at users' fingertips.

- Accountability practices to track where process breakdowns occur and provide closed-loop feedback to resolve those issues—thus injecting trust into the new processes. So engineers know they'll get what they need when they need it, and cooperate more fully as a result.
- Real-time metrics that drive incentives at all levels of the organization to eliminate waste.

Implementation was quick, driving rapid results while allowing engineers to provide feedback and make sure the solution fit their needs.

## THE RESULTS

By getting engineers the equipment they need when they need it, the customer quickly reduced engineers' "just in case" stockpiling of equipment, freeing up equipment capacity company wide.

Within three months, the customer had:

- Increased data accuracy to over 95%.
- Decreased engineers' wait time for equipment requests from 16 weeks to less than 1 day and often less than an hour.
- Reduced past-due calibrations from 10.5% to less than 0.2%.

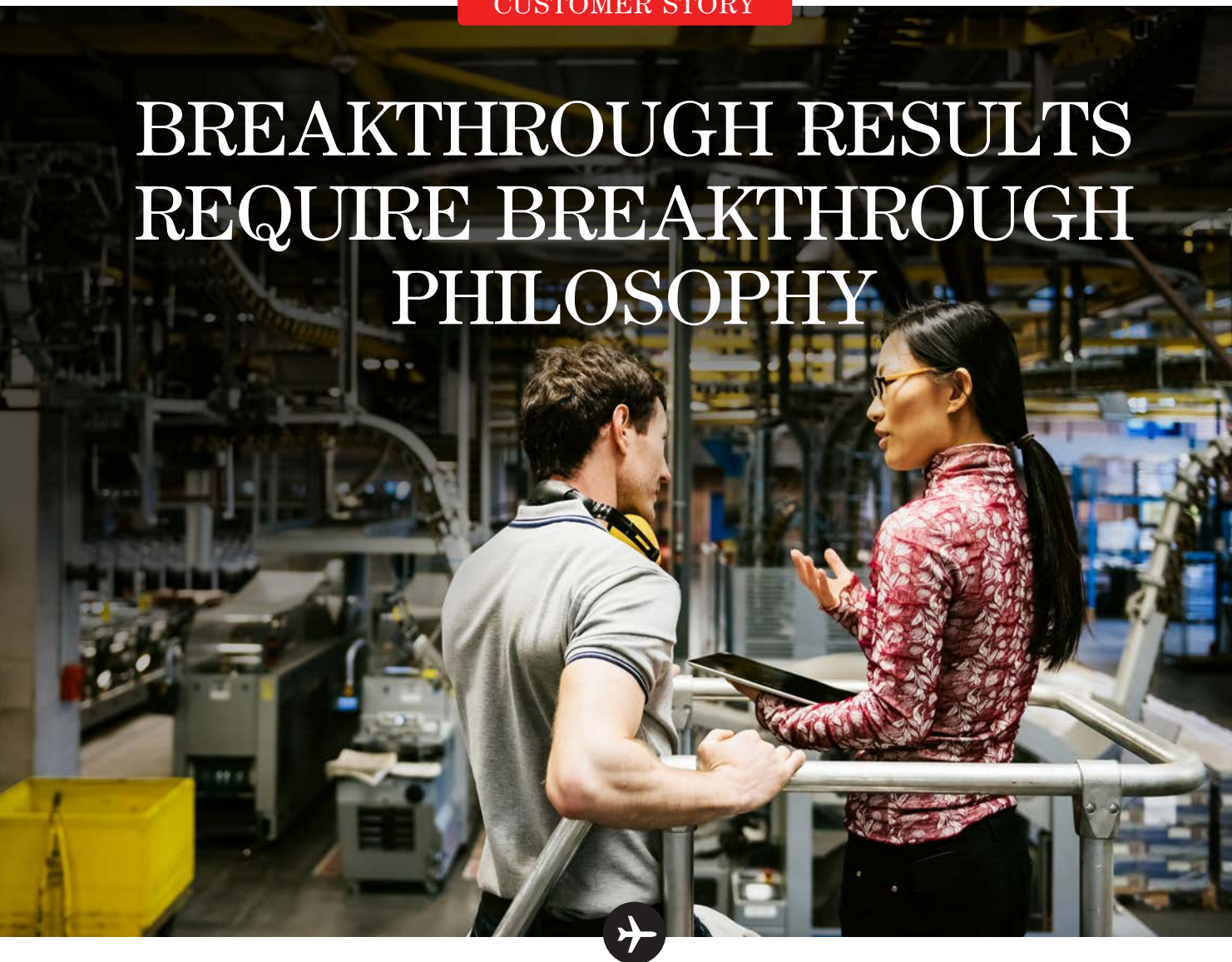
Within one year, the customer had:

- Cut its capital budget for test equipment by 50%.
- Used that savings to reinvest into business growth that's now producing over 100 times that first-year savings in additional revenue

The company ultimately:

- Boosted utilization from 15% to 65%—a 4x increase.
- Cut test equipment assets in half—while doubling its business.

# BREAKTHROUGH RESULTS REQUIRE BREAKTHROUGH PHILOSOPHY



Competing effectively in the Fourth Industrial Revolution requires a new philosophy, mindset and knowledge to produce what really matters: effective, strategic and competitive outcomes.

**T**wenty years ago while trying to explain how we were producing the results we did with our “asset management” service I tried to explain the philosophy that lead to the results. To our customers at times our results seemed like magic. They weren’t, of course, so I tried to explain our philosophy. Frustrated, trying to understand, my customer kept saying, “But you manage test

equipment, right? You save us lots of money on our test equipment, right?” It was true. We had cut their capital spend by over 50% and through the first year had reduced calibration support expenses significantly as well. They took these savings and invested in growth and over time doubled in size as we eventually whittled their asset base to half where it started. Twice the revenue and half the assets was a 4X improvement in utilization

that dropped to the bottom line. Our success was fueled by a scientific understanding of what drives social behaviors – like hoarding -- which lead to what knowledge we needed to have to shift those social behaviors. While we certainly needed to understand the technical capability of the equipment used by our customers to make them successful, the big strides in productivity and speed had little to do with the equipment. They had more

to do with a cultural change across our customer organizations provoked by our practices and tools.

As our equipment becomes more and more communicative through network capabilities and the Internet of Things, people will have a tendency to make the solution all about the equipment again. All about the assets. While we will leverage some of this new technology it's still not about the assets, and never has been. I've been around this marketplace for 20 years, and the problems that existed 20 years ago still exist today. It's because companies are still overly focused on "managing" their assets instead of focusing on what is truly important. So much of excess asset cost comes from human behaviors like hoarding equipment. I knew that success would require a human centered approach enabled by technology to create change at scale.

Our first customer had a ROIC problem, and low utilization of their assets didn't help. We designed a solution for that issue that increased asset utilization, and dropped costs by 50%, and made them significantly faster. Our solution was labeled "Asset Management." When I looked at other "asset management" programs, they weren't producing the same results we were. They were all about not losing assets, and saving money as a result of reduced write-offs. Our offer was about significant improvements to cost and speed and we achieve over 50% reductions in cost and 25% increases to speed. Regardless of our results, because part of our practice included barcoding assets, we were lumped into the category "Asset Management".

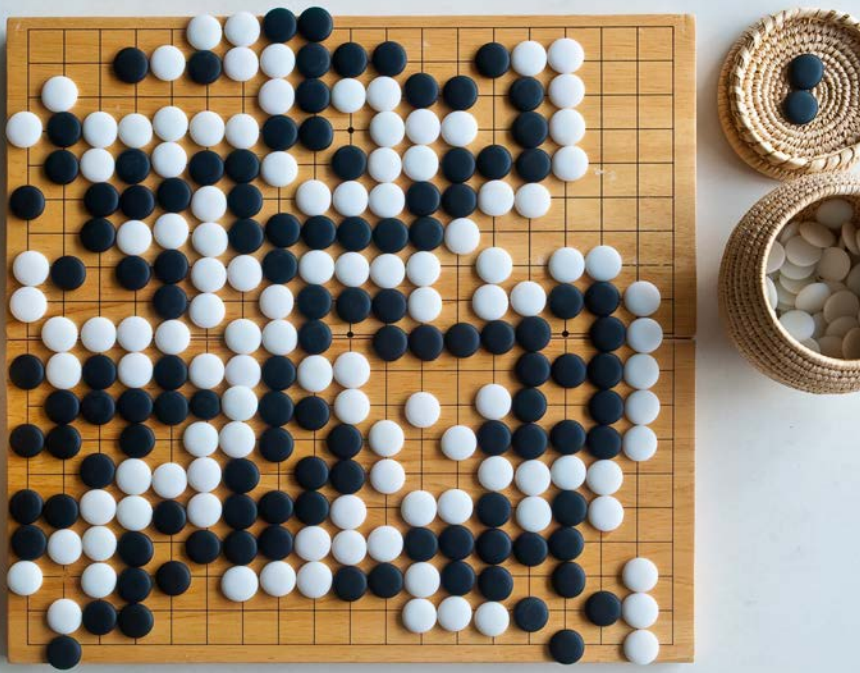
The label "asset management" disguises what is really going on. "Asset" costs are mostly the results of human behavioral issues that begin with distrust, and one of the things that leads to is hoarding. Hoarding equipment, budgets, services, labor- you name it. Organizational distrust thwarts efforts at speed and competitiveness. A solution orientation of "managing assets" will never produce the trust required for truly groundbreaking results.

I like to joke that assets never have a bad day, never complain about other assets, and never ask for more money. They don't need managing and governing. Humans need managing and governing. While trying to explain our philosophy to a set of our customers almost 20 years ago, I famously and frustratingly spouted, "Forget about test equipment." It confused the hell out of my customers, so I changed the subject and moved on. My employees thought it was funny and made a button to commemorate the occasion, which I keep in my office to this day. It reminds me of how important communication is, and in particular as you craft your messaging, how well you have to be able to anticipate how your listener will hear your message. In those days I'm not sure it mattered that my customers understood our philosophy and how it was different. They liked the results. Today, with most companies in the midst of "transformation" efforts, that philosophy needs to be at the core of the way they operate; not just in their test organizations and with their assets. Once this philosophy is fully implemented, it will work its way into all other facets of the organization.

Our breakthrough results have been recognized by numerous customer and industry awards, but they aren't the result of anything we do with assets. We increase utilization of assets and speed by working on trust. Trust will make people want to share, collaborate, and invent with each other. Once you start looking past the assets and see the people behind them, you learn that trust and people's intentions are more important than any other element.



"It confused the hell out of my customers... my employees thought it was funny and made a button to commemorate the occasion, which I keep in my office."



HISTORY

# THE SENTE GROUP

20 years working in the test environment with award winning results from our customers and Frost & Sullivan

Our mission is helping companies that have large investment in test resources significantly improve their competitiveness and speed. We've won numerous customer and industry awards. Frost and Sullivan, a leading market research firm, awarded us their Customer Value Enhancement Award and seated us on their Hall of Fame panel saying, "While other companies provide asset management solutions that offer tactical assistance, Sente focuses on delivering solutions that have a strategic and long-term

impact on customers' test environments." In recognition that we'd gone well beyond our asset management solution, Frost and Sullivan later awarded us their Customer Value Leadership Award for Test Resource Management Software. Scireo® is Sente's smart system for managing test resources from equipment to people, knowledge, services and facilities.

Our employees have a passion for producing

superior customer outcomes and we are committed to lifetime learning so those outcomes continue. In recognition of our culture one customer said, "We hired Sente because it felt like they were going to do something with us, not to us."



The term "sente" captures the promise we make to our customers.

## WHERE DOES THE SENTE GROUP NAME COME FROM?

- Sente comes from an ancient board game, "Go", invented over 2500 years ago in China. It was invented for use by Generals to develop strategy.
- Go has been studied as a metaphor for business
- It is played on a board with white and black "stones" that are used to capture "territory".
- Arrays of stones called "Groups" capture territory and if designed and executed effectively can't be killed.
- The winner captures over 50% of the board using their limited resources (stones) to capture territory at the lowest possible cost.
- Sente is a situation in Go where one player "has or takes the initiative". This means that they have the resources to go on the offensive to take territory without concern for counterattack and loss of existing groups because quality defects in their structure have been eliminated.
- When someone "has Sente" their opponent must react to them and usually in a costly way
- This is where "Sente" and "Group" come from
- **Sente enables you to go on the offensive, effectively developing and coordinating your groups and teams to win the game.**

# FROST & SULLIVAN

## WHY DO SENTE SOLUTIONS WORK?

Frost and Sullivan has recognized The Sente Group for the value we've produced for our customers, and the completeness of our solutions. This includes our software modules, various templates, over 250 integrated process maps and our proprietary implementation methodology -- all of which ties back to expected financial results.

To understand what differentiates Sente, you must first look at our approach from a philosophical perspective. One example in our asset management capability is we don't organize around managing assets. Assets are easy to manage; they never have a bad day, they are never dissatisfied with their work, and they never have hidden agendas. Being successful with asset management requires the capability to manage the human dynamics that drive it. Sente's solutions organize

around managing commitments and building trust because those commitments drive critical value streams that just happen to use test equipment and highly skilled technical personnel in the process. Unless you understand people's challenges, you won't solve the "asset" challenges.

We interpret the test environment as a complex adaptive system in which stimulus produces a dynamic set of interactions of the organization in response.

Hoarding is one of these responses. To design a successful solution requires knowledge that goes beyond equipment to include economics, incentives, finance, total costs, language, communications, organization design and systems thinking. We have the knowledge, we have the solutions, and we have the results to show for it.



# RESULTS WE PRODUCE



Where do Sente's Software and Services  
Fit in the Marketplace

## REDUCING TOTAL-COST- OF-TEST WHILE ENABLING THEIR TEAM TO FOCUS ON VALUE ADDED ACTIVITIES.

We aim to produce measurable results that help our customers to be successful. These results help our customers because they produce significant savings, enabling them to invest in new missions, and compete in an increasingly competitive marketplace. Sente's services produce an ROI with contributions from both bottom line savings and top line growth. We aim to have results that are differentiators, offering solutions and approaches that work by delivering measurable and uncommon results.



## WHY DO EXECUTIVES USE OUR SCIREO® SOLUTIONS IN THEIR TEST OPERATIONS?

- To leverage their existing infrastructure and their supply base to contain costs
- To improve visibility of capacity constraints as they develop to assess risk to schedule and budget
- To improve responsiveness to new requests or changes in project or program requirements
- To continually improve the accuracy of program cost and schedule forecasts
- To enable targeted investment to reduce obsolescence, fill capacity gaps and reduce risk to schedule performance

*We don't only partner with our customers; we partner with their employees to make them successful too.*



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# GROUNDBREAKING RESULTS

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1

4X

improvement in utilization, measured using our proven methods and algorithms

2

25 - 50%

reduction in operating costs (including calibration expense)

3

40%

reduction in equipment obsolescence risk

4

30%

improvement in responsiveness to Issues

5

75% - 95%

reduction in unproductive user time





THE ROLE OF TOOLS

# MANAGING CHANGE

Most companies that have tried to install asset management in their test organizations will tell you that the largest barrier is behavioral. It's the people with deeply embedded habits that conflict with the new set of practices to be installed. Sometimes they intentionally thwart the new processes, but most often they are blind to how their actions cause breakdowns in the new process while unintentionally driving cost up. For them to change, they need to be shown a better

way, they need to believe it and then they need to be reminded and coached away from their habits as they surface. Finally, the change needs to happen at the rate humans can change; as an evolution, not a revolution. High performance teams are built and matured over time through education, coaching and discipline with their practices and tools. This team is no different. As the team matures, utilization increases over time, from below 15% typically to over 60%.

The companies that offer asset management solutions say that cultural change must be driven by people, and that tools are unimportant in the organizational change game. This is a common notion, but it is dead wrong. Tools amplify human performance, and they can amplify it in the change game as well. It's important to measure elements of human behavior using data captured in tools, as organizations can't start to make measurable differences in behavior if

they aren't measuring it in some concrete way. Companies need to know if people are engaged in the process or not, and if they are operating in a largely reactive or proactive way.

Information about organizational behaviors then needs to be acted on to establish a set of measurable goals and objectives that incent the necessary behavior. Communications plans must be in place, targeted to specific roles, designed to establish alignment between the goals and objectives of the resource management team, their customers and suppliers. In addition to these plans, they also need to be executed well for the overall plan to be successful. Our experience and expertise allows us to install these plans in effective and meaningful ways, giving our clients the results they need.

“

Change needs to happen at the rate humans can change; as an evolution, not a revolution

# HOW ONE AEROSPACE COMPANY FREED UP HUMAN & OPERATING CAPITAL FOR MORE STRATEGIC PURPOSES

THE PRESSURE IS ON FOR AEROSPACE & DEFENSE COMPANIES.

Today's competitive pressures mean companies must get products to market faster to beat the competition. That's why every company must make the best possible use of existing capabilities – equipment, facilities, knowledge and people – and do so immediately. This is the story of how one company is winning the battle . . . with the support of The Sente Group.

## THE CHALLENGE

The customer's Aerospace division met today's intense competitive pressures through a major reorganization, consolidating facilities and reducing costs.

What they hadn't fully explored was how to improve resource management within their test organizations.

- Over 150,000 assets
- 15 facilities in North America
- Multiple legacy cultures and process
- No comprehensive data about their assets, who used them, their condition and related maintenance costs

These unknowns were anathema to the company's data-driven, engineering-focused culture. Company leaders realized that not knowing the answers quickly translated into excessive hidden costs of ownership – equipment purchases, property taxes, storage space, calibration & maintenance, rental & lease costs, distractions of key technical staff, etc. – as well as downtime associated with obsolete equipment and program delays.

With demand for capital out-stripping supply, there was a clear need and plenty of room for dramatic improvement.

## THE SOLUTION

A Blueprint defined the essential elements of the solution which included an implementation plan and financial pro-forma against which the team would measure future success. The goal was to launch and test the Sente test resource management software Scireo® at one location, then implement it across the company.

Sente and the company's in-house equipment service team worked together to audit existing equipment, set up the resource management structure – tailored processes, refined roles with metric responsibilities and Scireo® integrated software tools – and introduce it at the beta site in just two weeks.

It didn't take much longer for company leaders to see that the new system was working, leading to a rapid rollout:

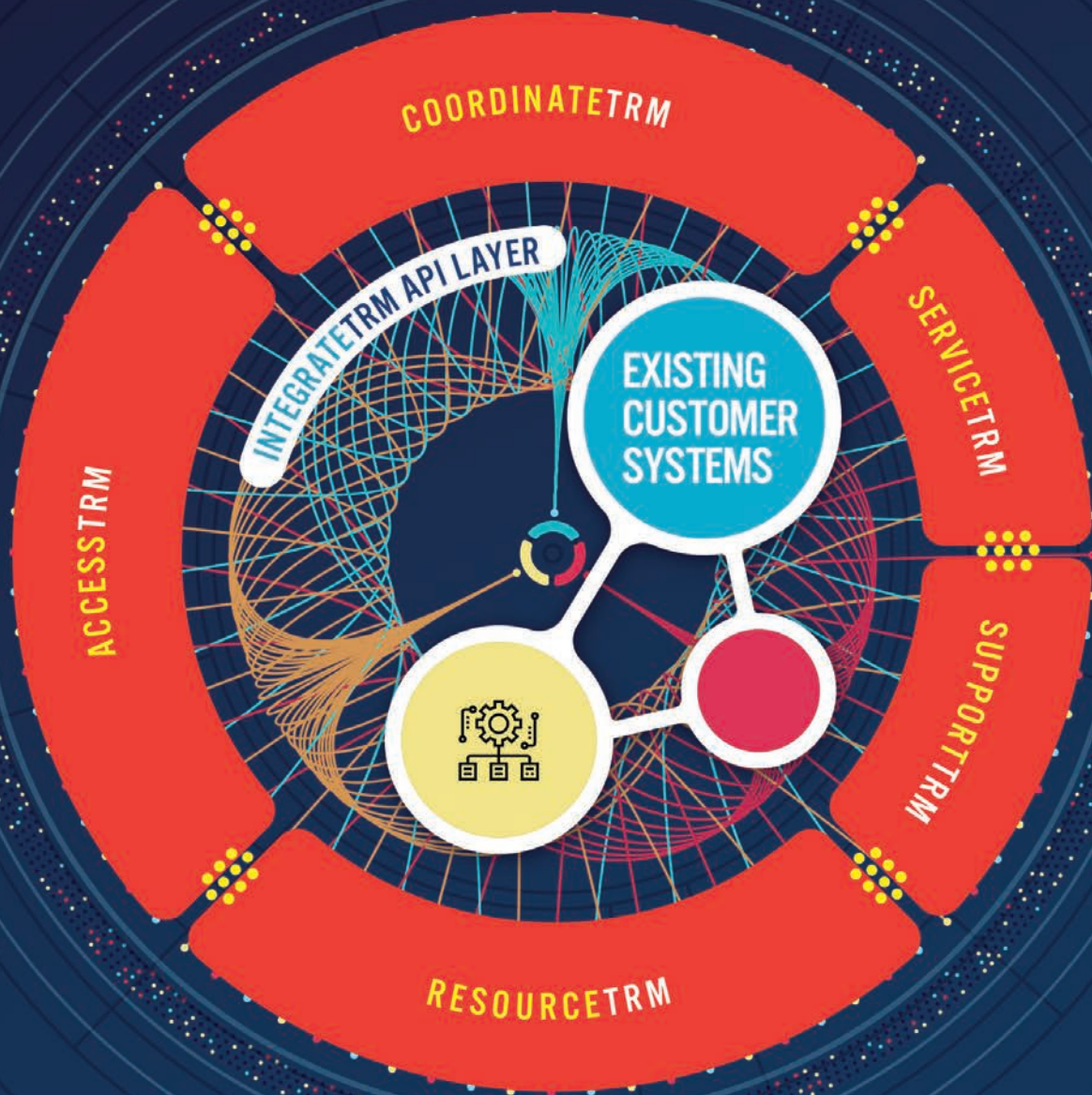
- 14 additional locations
- 9-month implementation
- Total of 90,000 assets brought into the system

The keystone of the solution is Scireo®, software that measures utilization and provides real-time information on specific pieces of equipment – leading to smarter, more cost-effective decisions about every asset. In addition, Sente's detailed knowledge of the cultural dynamics that needed to be overcome led to quick adoption by labs and middle management as a mechanism to reduce costs.

## THE RESULTS

The company-wide implementation of the TRM solution led to several rapid, significant improvements:

- Major human capital productivity – the labor, associated planning, executing and reporting results
- A significant increase in the ability to fund new projects in engineering.
- Greater visibility to future resource constraints and available contingencies across multiple locations, enabling proactive planning based on knowledge of resource dependencies and an increase in operational responsiveness and customer satisfaction.
- Overall utilization has exceeded 55%.
- All laboratories now share standard processes and tools for scheduling capacity.



**ACCORDING TO LEADING MARKET RESEARCH FIRM  
FROST AND SULLIVAN**

"Sente's Scireo® 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."

# POWERFUL SOFTWARE & SERVICE SUITE

## RESOURCE<sup>TRM</sup>

Repository of test resources and knowledge available across the entire platform including in depth and searchable equipment capabilities, obsolescence and market data.

## SUPPORT<sup>TRM</sup>

Break/Fix capability recovering uptime of equipment including capabilities for support group management, automated downtime escalations, Pareto of downtime issues and complete metrics on downtime, mean-time between failure, return to service

## SERVICE<sup>TRM</sup>

Software for preventing downtime including scheduling of maintenance events in multiple time horizons, documenting maintenance methods, auto scheduling events and managing service teams.

## ACCESS<sup>TRM</sup>

Capability for accessing equipment availability, making requests for equipment, assessing equipment inventory risk, planning capacity, optimizing utilization and reducing total-cost-of-ownership

## COORDINATE<sup>TRM</sup>

Capability for planning and coordinating multiple test events with the resources, equipment and associated calibration and maintenance services required to avoid unforeseen, last minute conflicts or delays.

## How Scireo® Drops Costs, Propels Schedules and Puts Millions on Your Bottom Line

**S**cireo® is an integrated set of software modules used to manage a company's complex and costly test resources to increase speed and responsiveness while reducing costs. Scireo® integrates what are often stand-alone, home-grown systems and spreadsheets into a powerfully integrated expert system for resource management.

### UNIQUE FEATURES

**Consoles:** A capability to enable quick analysis and decision making by organizing data graphically for analysis, providing “drill down” capability into specific segments of data and finally triggering workflows that drive action and improvement.

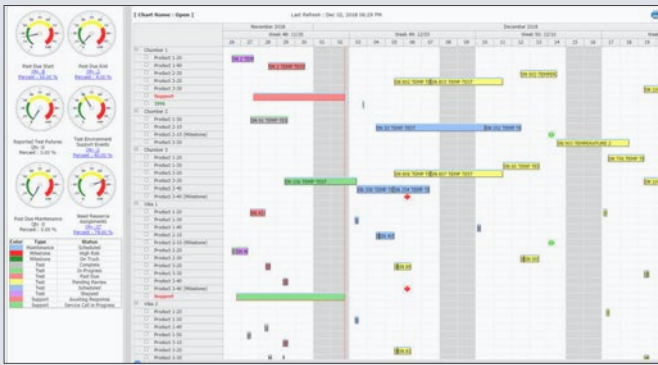
**Finance<sup>TRM</sup>:** A capability for tracking the financial costs and benefits of the applications installed enabling automated measurement of ROI using agreed upon algorithms.

### TACTICAL SERVICES

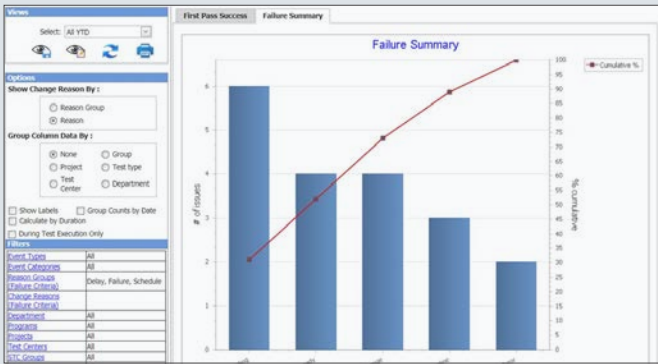
- Workshops – Focused on identifying possibilities for improvement
- Blueprints – Detailed situation assessment, required components with implementation sequencing, detailed business case/pro forma
- Tailoring – Detailed tailoring of process and tools to the end environment and outcomes targeted
- Implementation – Using our proprietary “Sente Way” technology to sequence tactics and break down barriers.
- Training – In how to perform tactics and produce important outcomes

### STRATEGIC SERVICES

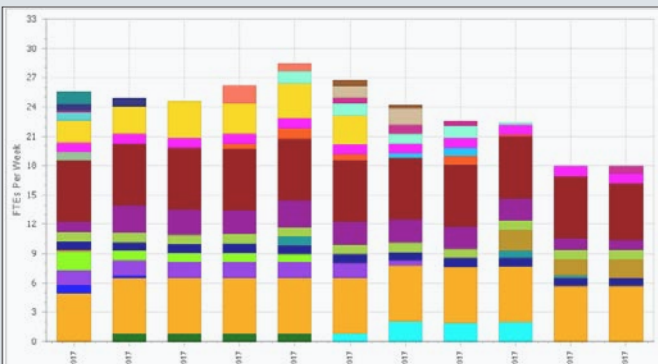
- Maturity Services - Enabling more effective, strategic and competitive use of Scireo to continuously improve targeted outcomes
- Cultural Transformation - Situation assessment, intervention plan and performance coaching
- S.E.A.L. Training – Study. Engage. Act. Learn. In depth engagement with a transformation team on skills to lead the change. Lectures and workshops.
- Governance Support – Establishing an executive Governance Board, creating strategic alignment and breaking down barriers.



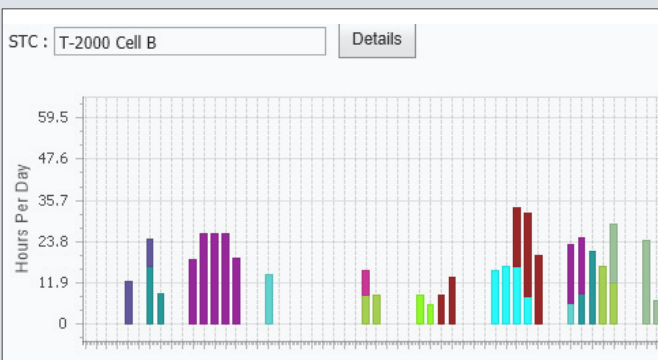
Integrated Test Environment Views in Real-time



Schedule Delay Reason Pareto Distribution



Staffing Capacity



Test Station Demand

SCIREO®

# MANAGE CAPACITY & RISK USING COORDINATETRM™

Drive more effective use of Shared Test Setups/Capabilities using CoordinateTRM™

New and extended TRM practices being deployed to help drive engineering initiatives and reduce costs. Costs include capital, service and cycle time costs.

- Improve visibility of constraints as they develop to assess risk to schedule and budget
- Improve responsiveness to new requests or changes in project or program requirements
- Drive continual improvement to the accuracy of program cost and schedule forecasts
- Target investment to reduce obsolescence, fill capacity gaps and reduce risk to schedule performance
- Leverage the internal & external network

## LAB MANAGEMENT & EQUIPMENT PERFORMANCE CONSOLES

Manage and measure the availability and performance of your test infrastructure in real time at the click of a button.

Teams that are using CoordinateTRM™ and its associated Management Consoles see the following results:

- Enabled enterprise-level footprint optimization
- Increased cross-lab collaboration by 50%
- Reduced equipment obsolescence from 80% to 30%

SCIREO®

# DRIVE AVAILABILITY USING SERVICE<sup>TRM</sup>™ & SUPPORT<sup>TRM</sup>™

Improve Uptime. Optimize Efficiency

## MAINTAINING TEST STATION AVAILABILITY WITH SUPPORT<sup>TRM</sup> & SERVICE<sup>TRM</sup>

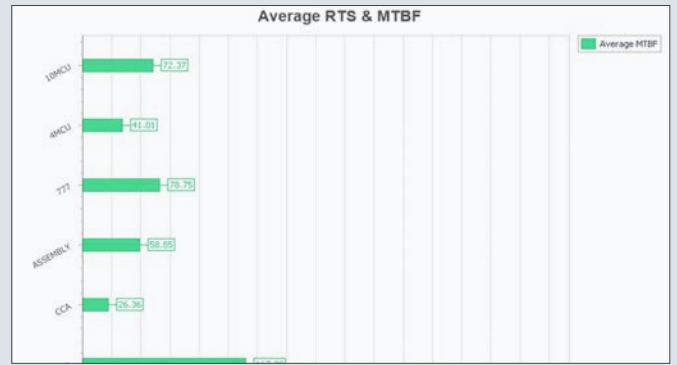
- Unplanned downtime is disruptive and costly – potentially delaying the delivery of product – disrupting customer satisfaction and negatively impacting financial results
- Without real-time, on-line access to relevant situational assertions, managers can't make effective assessments about which situation is their highest priority and take action.
- Without an on-line capability, ad hoc phone calls, in person meetings, conference calls, emails and other methods are required to understand the situation and make an interpretation about action to take. This approach is costly as information is often incomplete and time is wasted that could be focused on core, valued added activities.
- Service<sup>TRM</sup>™ and Support<sup>TRM</sup>™ are web-based tools that organize the service and maintenance assertions and their respective workflows for your test and production environments
  - Use Service<sup>TRM</sup>™ to manage the effectiveness of your Preventative and Scheduled Maintenance Plans
  - Use Support<sup>TRM</sup>™ to manage the effectiveness of your incident response and your ability to improve Test Station Availability

## LAB MANAGEMENT & EQUIPMENT PERFORMANCE CONSOLES

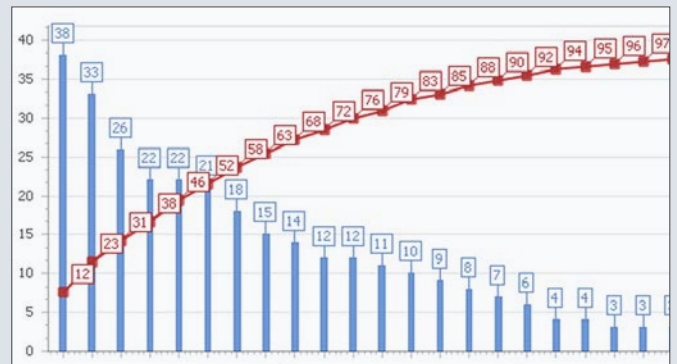
Manage and measure the availability and performance of your test infrastructure in real-time at the click of a button.

Teams that are using Service<sup>TRM</sup>™ and Support<sup>TRM</sup>™ and their associated Management Consoles see the following results:

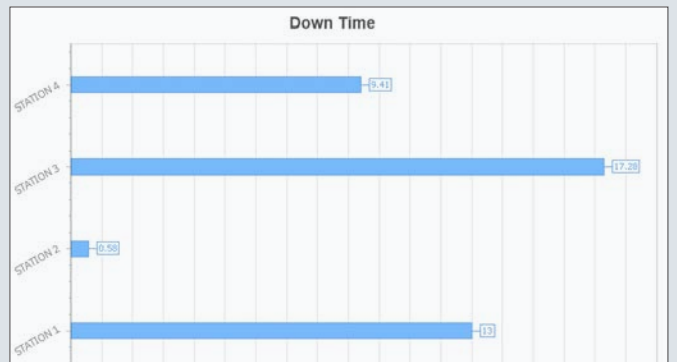
- Improved Response Times - wait time reduced by 97%
- Return to Service times improved - reduced by over 21%
- Total downtime reduced by 30%



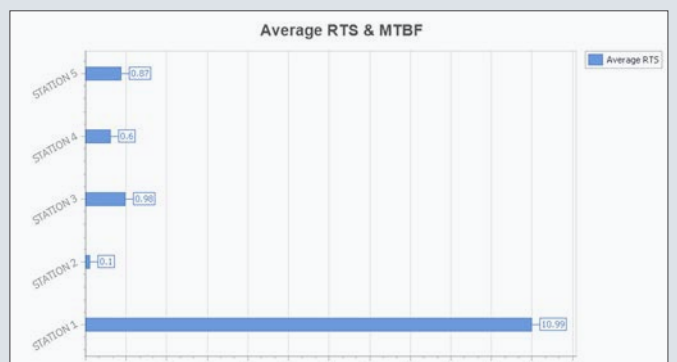
Mean-Time-Between-Failure



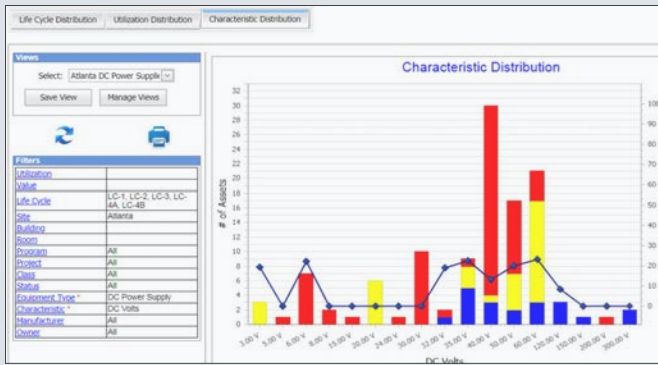
Failure Distribution



Equipment Downtime



Return-to-Service



Equipment Risk - Utilization and Obsolescence

Select View : Inventory Risk Drill Down

Detail	Life Cycle	Value	Current Utilization(%)	Equipment Type	Mfr	Model
■	LC-3	6334.00	33.00	DC Power Supply	Agilent	6673A
■	LC-3	4415.00	58.00	DC Power Supply	Agilent	6653A
■	LC-3	4415.00	17.00	DC Power Supply	Agilent	6653A
■	LC-3	6334.00	0.00	DC Power Supply	Agilent	6673A
■	LC-3	4415.00	0.00	DC Power Supply	Agilent	6653A
■	LC-4A	296.00	0.00	DC Power Supply	Agilent	E3616A
■	LC-4A	296.00	42.00	DC Power Supply	Agilent	E3616A

Equipment Risk - Drill Down Details and Workflow

Search & Request

Agilent 5475A (Benchmark DMM)

AC Input Accuracy: 0.12% to 1.24%

DC Input Accuracy: 0.02% to 1.01%

Keysight Technologies 14431A (16 1/2 Digit Multimeter)

AC Input Accuracy: 0.1% to 1.1%

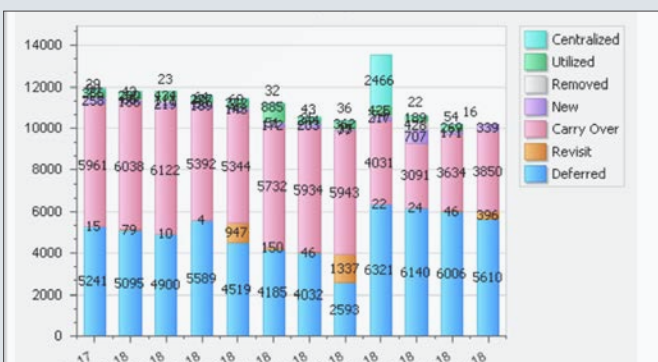
DC Input Accuracy: 0.02% to 0.9%

Benchmark Fluke 8822A (Benchmark DMM)

AC Input Accuracy: 0.4% to 0.7%

DC Input Accuracy: 0.04% to 0.7%

Equipment Search and Request



Waste Reduction Console

SCIREO®

# INCREASE UTILIZATION AND REDUCE RISK USING ACCESSTRM™

Award winning asset management solution increases availability of assets to get tests done while reducing costs and obsolescence risks.

## FEATURES

- Search capability for equipment characteristics and specs
- Capabilities for searching, assessing availability, comparing and requesting equipment
- Algorithms and workflows for optimizing utilization and availability
- Analytics for assessing inventory obsolescence risk
- Tools for planning the acquisition and disposition of equipment
- Kiosk and Mobile platforms
- Performance analytics to enable trust to build across the network
- FinanceTRM™ for measuring net cash and operating expense benefits of your program
- Algorithms and workflows for eliminating waste and reducing costs

## BOTTOM LINE RESULTS

- 200% to 400% increase in utilization
- 25%+ reduction in test project timelines
- 50%+ reduction in operating expense and capital budget
- 40%+ reduction in obsolescence risk
- 10%+ reduction in non value-added time

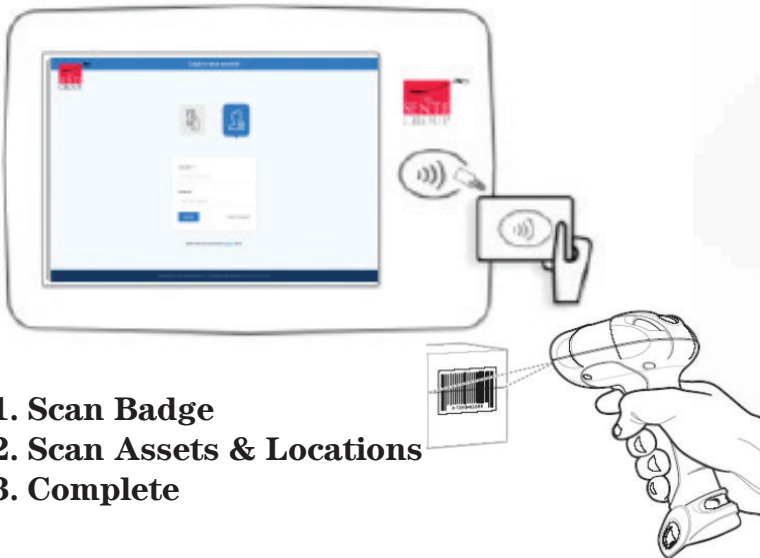


SCIREO®

# SELF-SERVICE ACCESS MADE EASY

- Tracking the locations and compliance of your test tools and equipment has never been so simple.
- Users check equipment in and out of their storage and usage areas using their company ID
- No more time consuming login activities
- Equipment locations, users and dates are recorded and become part of the equipment record
- Compliance details are available to fully assess risks for out-of-tolerance reporting and corrective actions
- Audit trails are created and maintained in a central equipment repository

## EASY USER ACCESS



1. Scan Badge
2. Scan Assets & Locations
3. Complete



## Accountability Consoles

Service Compliance

Location Accuracy



1. Monitor trends
2. Drill down
3. Take action

Asset ID	Asset Name	Location	Status
0001234	0001234	0001, Room 100	Active
0001235	0001235	0001, Room 100	Active
0001236	0001236	0001, Room 100	Active
0001237	0001237	0001, Room 100	Active
0001238	0001238	0001, Room 100	Active
0001239	0001239	0001, Room 100	Active
0001240	0001240	0001, Room 100	Active

# DISCOVER HOW A GLOBAL BROADBAND SERVICES AND TECHNOLOGY COMPANY LEVERAGED THEIR CAPITAL AND RESOURCES FOR GROWTH.

## THE PRESSURE IS ON FOR AEROSPACE COMPANIES

Today's competitive pressures mean companies must get new products to market faster and more competitively than others to sustain and increase growth. That's why every company must make the best possible use of existing capabilities, talents and resources. This is the story of how one company is winning the battle . . . with the support of The Sente Group.

### THE CHALLENGE

- The company was growing at a sustained rate of 11% year-over-year and this growth was accelerating demand for capital
- They needed to contain costs without impeding growth to enable investments in new business lines.
- Management had no facts about how effectively their equipment was being used, they just knew there was an insatiable demand for it.
- At the core of the problem was a culture that had developed a practice of hoarding the assets that they needed. This was exacerbated by annual test staff growth of 10% to 15%.
- Maintenance and repair decisions are made in a vacuum - driving costs higher as equipment was being repaired and maintained that was not required or had a suitable replacement in their existing inventory.
- Sente's initial baselining indicated utilization was 17.8%, 74% of the inventory was "one off" and non standard and database accuracy was 64%

### THE SOLUTION

- Sente performed a Blueprint and Financial business case.
- Sente installed Scireo® software across the enterprise to support key processes required to drive equipment cost savings in the labs.

- The software was implemented using "The Sente Way" methodology which produces the horizontal alignment necessary to drive cost and cycle time improvements through effective new metrics / incentives and a robust communications plan
- Trust built across the organization that these new processes for managing the labs would provide them the resources they needed when they need it and sharing and collaboration increased.
- Sente's Technology Alignment and Capacity Alignment practices were used to optimize the capability and size of the inventory to match the company's mission requirements and test schedules.
- During the first DCMA audit after the implementation of Scireo®, the property management team is completing their audits 60% faster than in the past and they are now receiving praise from government auditors for the accuracy of their inventory and the rigor of their practices.

### THE RESULTS

The company-wide implementation of the TRM solution led to several rapid, significant improvements, most notably:

- Asset Utilization increased by 3.3x (in Lab) ; 2.8x (overall)
- Break-even occurred in the first 90 days of operation/ implementation
- Average Capital Budget reductions: 37%
- Average ROI: 413%
- Average Annual Contribution to "Income from Operations": 2.4%

# DISCOVER HOW A GLOBAL AEROSPACE BUSINESS IMPROVED THEIR SERVICE TEAM PERFORMANCE AND UPTIME.

## THE PRESSURE IS ON FOR AEROSPACE COMPANIES

Today's competitive pressures mean companies must deliver high quality products on-time or risk not getting the next order. In addition, companies must focus on keeping their costs down and making sure they are getting the most out of their existing test equipment and service organizations. This is the story of how one company is winning the battle . . . with the support of The Sente Group.

### THE CHALLENGE

- Equipment downtime was causing major dissatisfaction between the manufacturing groups and the support teams tasked with keeping their lines running
- The service group was taking withering criticism and got no relief when they claimed they needed more manpower. Their customer thought they were already too expensive.
- Service team members were stressed and not sure how to change their situation

### THE SOLUTION

- Sente performed a Blueprint to specify the processes and tools that would be required to reverse this situation.
- Scireo® SupportTRM™ and ServiceTRM™ modules were installed to reduce downtime and optimize the support team capacity and costs.
- The process was instrumented to accurately measure and manage performance and cost.
- Goals were established that the team thought would satisfy the customer and Sente team members worked closely with the service teams to help them mature in the process

### THE RESULTS

The multi-location implementation was considered a great success.

- Return-to-Service days were reduced by 30%
- Mean-Time-Between-Failure improved by 330%
- The cost/service event dropped as a result of better coordination and sharing of corrective action knowledge
- The service group was able to make a case for needing more capacity

# THE SENTE GROUP

# CONTACT US



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**FOUNDER/ CEO**

Paul's work with Fortune 150 companies has helped those organizations achieve significant improvements in test-related cost and cycle time, while shifting unproductive cultural barriers along the way.

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