

FROST & SULLIVAN

BEST PRACTICES

AWARDS

FROST & SULLIVAN

2020 BEST PRACTICES AWARD



SIGNALS
ANALYTICS

**2020 NORTH AMERICAN HEALTH ANALYTICS
ENABLING TECHNOLOGY LEADERSHIP AWARD**

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Background and Company Performance

Industry Challenges

Rapid technological advances in life sciences and healthcare research have generated a large repertoire of varied data sets; however, manually analyzing such different data sets to derive clinically actionable insights is a laborious, error-prone, and daunting task. While several automated platforms are available for data processing, Frost & Sullivan's own research confirms that data harmonization across varied data sources still continues to be a significant challenge.¹ Frost & Sullivan analysts monitor the way that evolving innovations in information technology and data science have disrupted several industry sectors, but their impact on the global healthcare industry has been underwhelming to date. Automated algorithms need to be applied in healthcare settings to derive clinically actionable and accurate insights from discrete data sets in a timely manner.

Furthermore, the development time for new pharmaceuticals is too long, and traditional drug discovery approaches have high failure rates. Advanced analytics, however, can accelerate drug discovery and identify new opportunities for drug repurposing, thereby enabling significant cost and time savings. In the current scenario, where global societies have been severely crippled by the COVID-19 pandemic, accelerating drug discovery and development would translate into saving several thousand lives worldwide. COVID-19 has already claimed over 253,166 lives globally, and this number continues to increase despite country-wide lockdowns and the stringent application of social distancing guidelines. More than 30 companies are racing to develop treatments and vaccines for COVID-19, and Frost & Sullivan notes that properly tracking new developments in this space is becoming even harder. Automated analytics, therefore, need to be applied to visualize rapid developments in a more accurate and contextual manner to keep pace with COVID-19 treatment trends.

As the world moves toward adopting health and wellness trends from both the clinical and consumer care perspectives, Frost & Sullivan analysts conclude that advanced analytics are needed that can help customers and healthcare professionals make healthy and lifesaving decisions.

Technology Leverage and Customer Impact

Enabling Off-the-shelf Analytics

Signals Analytics, headquartered in New York City, offers an off-the-shelf advanced analytics platform for leading life sciences, pharmaceuticals, and consumer brands. Unlike competitors that offer off the shelf analytics that still require data collection and customization, Signals Analytics offers a configurable data platform that already ingests more than 13,000 different data sources, curated taxonomies and more than 100 analytic models, all of which can be adapted to the needs of the business. The company uses a rich natural language processing (NLP) core to facilitate contextual research insights that can drive critical business decisions in a more timely and accurate manner.

¹ Science Direct; *Drug Discovery Today*; Volume 24, Issue 9; Pages 1795-1805; Valentin Steinwandter et al.; September 2019; "[Data science tools and applications on the way to Pharma 4.0](#)"

Signals Analytics leverages the power of lexico-syntactic and semantic extraction modeling, deep learning, swarm intelligence, synthetic control frameworks, and neural networking concepts which enables deep and broad coverage into a wide range of data sources that are otherwise disconnected and completely different in structure. Also unlike most other competitors, Signals Analytics can efficiently cut the noise from the data repertoire to extract actionable intelligence. The company has packaged more than 100 analytic models in various Apps including Market Overviews, Category Deep-Dives, Daily Pulse and Predictions, and created a special COVID-19 Playbook to help researchers in pharmaceutical companies, biotechs and public health agencies surface key insights to accelerate drug and vaccine development and find existing drugs that can be repurposed to combat the Coronavirus. These Apps are used by various stakeholders across the business surface on-demand insights that feed into the decision-making process.

Frost & Sullivan commends Signals Analytics for successfully creating a novel, advanced next-generation analytics platform that is configurable to dynamic real-world scenarios.

Harmonizing Diverse Data Sources

Signals Analytics' platform can harmonize over 13,000 external and unstructured data sources into a unified data environment for automated analysis. In the pharmaceutical arena, some of the data sources that are harmonized for analysis include clinical trials data, research publications, patents, company profiles, products, and financials, among several others. In comparison to most competing solutions, Signals Analytics' differentiated deep meta data combined with the taxonomies and the analytic models helps customers contextualize insights in rapidly evolving real-world settings.

For instance, the company's COVID-19 Playbook can answer critical healthcare questions related to emerging and leading COVID-19 treatments, analyze trends that are defining drug-repurposing strategies, and identify new entities that will likely be effective treatment strategies in the future. All of these advanced insights can be updated by expanding data sources to include more information and to be visualized in a user-friendly manner to surface insights pertaining to drug developments, vaccine and clinical trial progress and ways to repurpose existing drugs. With this, pharmaceutical and biotech professionals can derive holistic clinical insights on modalities and targets without manually collating and interpreting varied data sets.

In another instance, Signals Analytics platform helped guide a beverage company to design a new carbonated water drink. The actionable insights generated by the Signals Analytics platform allowed the customer to create a new beverage design that is currently on track to becoming a billion-dollar brand.

Frost & Sullivan lauds Signals Analytics for driving transformative business decisions for its customers by harmonizing diverse data sources, allowing them to configure automated insights, and offering unmatched deep context in changing real-world settings.

Transforming Lives

Signals Analytics was established in 2009 and is the brainchild of two Israeli military intelligence officers who have decades of experience across signal, human, and open-

source intelligence utilization. These officers leveraged their past experiences to develop a groundbreaking platform that helps customers drive critical global business decisions. Signals Analytics now has over 130 employees and has offices in the United States and Israel. The company has raised approximately \$60 million from leading investors and has three patents for innovations in AI, machine learning, and NLP.

Since its entry in the healthcare sector, Signals Analytics has established partnerships with large pharma companies, including Novartis AG, Roche, Johnson & Johnson, and Takeda Pharmaceutical Company Limited. Moreover, Signals Analytics' own branding has been significantly improved by servicing renowned consumer brands, such as Mars, Nestlé, Unilever, P&G, Reckitt Benckiser, and PepsiCo. Signals Analytics has recently adapted and now offers its COVID-19 Playbook, reflecting the company's deep commitment to global health and wellness and its ability to adapt its offerings quickly to real-world scenarios.

Frost & Sullivan applauds Signals Analytics' remarkable business growth and commends its ability to enable transformative business decisions for its rapidly growing client base.

Conclusion

Signals Analytics' novel analytical platform can harmonize varied data sources in an automated, configurable manner to derive deep contextual insights using NLP core technology. This platform can be applied to various pharmaceutical and consumer care industries to help accelerate drug development.

Signals Analytics' groundbreaking platform addresses key unmet industry needs for connecting and analyzing vast, unstructured data to extract meaningful insights that can be applied to real-world scenarios, including the current global COVID-19 pandemic. With its strong overall performance, Signals Analytics has earned the Frost & Sullivan 2020 Enabling Technology Leadership Award.

Significance of Enabling Technology Leadership

Ultimately, growth in any organization depends on customers purchasing from a company and then making the decision to return time and again. In a sense, then, everything is truly about the customer. Making customers happy is the cornerstone of any successful, long-term growth strategy. To achieve these goals through enabling technology leadership, an organization must be best in class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Enabling Technology Leadership

Product quality (driven by innovative technology) is the foundation of delivering customer value. When complemented by an equally rigorous focus on the customer, companies can begin to differentiate themselves from the competition. From awareness, to consideration, to purchase, to follow-up support, organizations that demonstrate best practices deliver a unique and enjoyable experience that gives customers confidence in the company, its products, and its integrity.

Key Benchmarking Criteria

For the Enabling Technology Leadership Award, Frost & Sullivan analysts independently evaluated Technology Leverage and Customer Impact according to the criteria identified below.

Technology Leverage

- Criterion 1: Commitment to Innovation
- Criterion 2: Commitment to Creativity
- Criterion 3: Stage Gate Efficiency
- Criterion 4: Commercialization Success
- Criterion 5: Application Diversity

Customer Impact

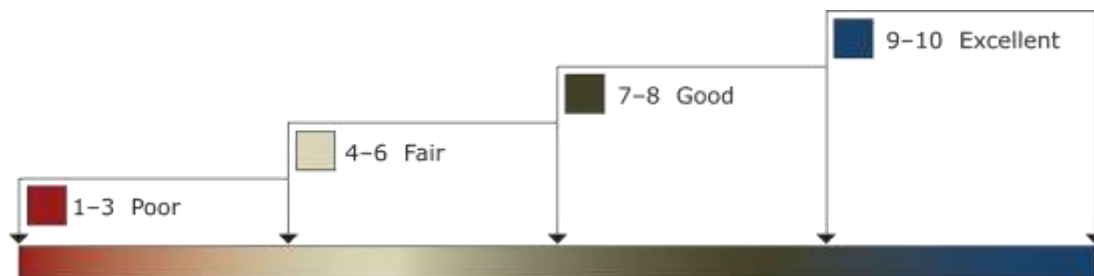
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for Signals Analytics

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 Technology Leverage 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 2 and Competitor 3.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Enabling Technology Leadership	Technology Leverage	Customer Impact	Average Rating
Signals Analytics	9.0	9.0	9.0
Competitor 2	7.5	6.5	7.0
Competitor 3	6.0	6.0	6.0

Technology Leverage

Criterion 1: Commitment to Innovation

Requirement: Conscious, ongoing adoption of emerging technologies that enable new product development and enhance product performance.

Criterion 2: Commitment to Creativity

Requirement: Technology leveraged to push the limits of form and function in the pursuit of white space innovation.

Criterion 3: Stage Gate Efficiency

Requirement: Adoption of technology to enhance the stage gate process for launching new products and solutions.

Criterion 4: Commercialization Success

Requirement: A proven track record of taking new technologies to market with a high rate of success.

Criterion 5: Application Diversity

Requirement: The development and/or integration of technologies that serve multiple applications and can be embraced in multiple environments.

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

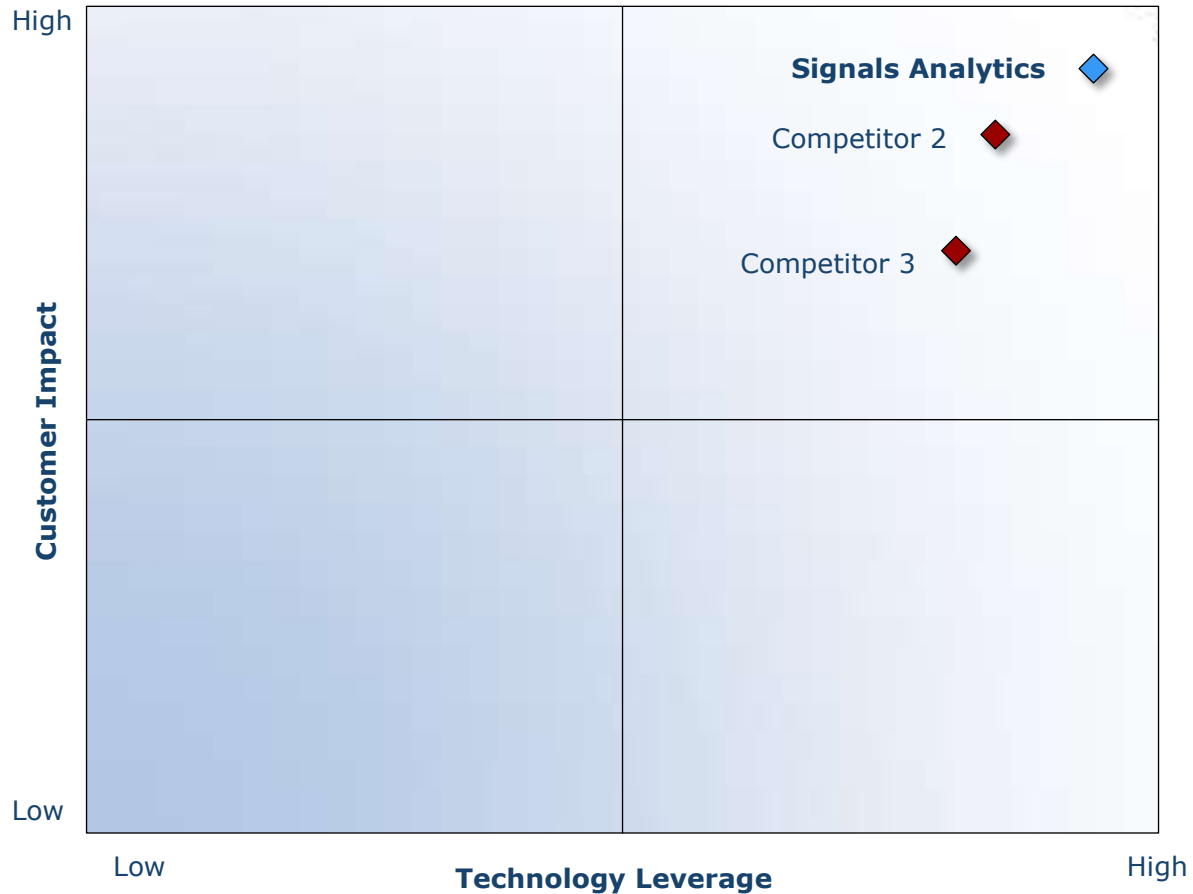
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

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 practices criteria. The reputation and integrity of the Awards are based on close adherence to this process.

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

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of 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.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



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>.