



2015 North American Artificial Intelligence Enabled Solutions Visionary Innovation Leadership Award



FROST & SULLIVAN



50 Years of Growth, Innovation & Leadership

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Background and Company Performance

Industry Challenges

Patient engagement is often cited as the cornerstone for reshaping care delivery in a manner that can have a dramatic impact on disease management and outcomes. By allowing individuals to become more empowered in their care, they can better dictate a plan that best suits their needs. Historically, patient satisfaction was a component of care that was just an afterthought, but it is now tied to monetary incentives for care providers.

To a large degree, Frost & Sullivan notes that patient empowerment hinges on the effective collection, analysis, and dissemination of information from their caregivers. Being able to review and make informed decisions in concert with the advice of caregivers facilitates more patient preference-based treatment decisions and plans. Care providers now face a number of challenges regarding how best to efficiently capture and generate those avenues for patient interaction. One of these challenges includes getting caregivers to alter their mind-set in terms of how to interact with patients, along with overhauling the legacy procedures and protocols they were trained in and operated under.

Research shows that more than 70% of physicians still practice care in an outmoded manner, whereby they miss out on over 50% of patient engagement opportunities during routine visits. Moreover, studies suggest that patients with lower confidence and knowledge about health as well as limited engagement with caregivers usually incurred 21% more costs than patients who receive enhanced decision-making support with increased levels of self-awareness.

New Product Attributes and Customer Impact of CognitiveScale

Novel Tool to Address Complex Challenges in Patient Engagement

Frost & Sullivan independent analysis confirms that the primary barriers to the implementation of patient engagement strategies have been time constraints for caregivers, lack of incentives, and insufficient training. As such, in order to achieve the goal of effective patient engagement, many public and private healthcare organizations are employing varied strategies to educate patients through the design of personalized interventions and the promotion of positive patient behavior.

Frost & Sullivan monitors how evolving care models that are based on combined actionable insights from self-management support, clinical information systems, and support from cognitive artificial intelligence (AI)-based tools are being steadily implemented by healthcare organizations to facilitate patient engagement.

Frost & Sullivan points out that CognitiveScale is properly utilizing self-capable artificial intelligence, machine learning platforms, and mobile technologies to create personalized care plans that will enhance the impact of patient-doctor care relationships. Being able to

deliver on improved quality, while concurrently reigning in associated costs of care, has been an issue that has long perplexed key stakeholders invested in modernizing the current care delivery model. Frost & Sullivan firmly believes that CognitiveScale's AI-based patient engagement solutions are well aligned with these shifting needs of a new healthcare paradigm.

Cognitive Technologies Increasing Patient Engagement, Improving Health Outcomes, and Reducing Costs

For effective patient engagement, healthcare organizations need to fully focus on where the patient interacts within the healthcare delivery system - rather than only on the disease. For this, it needs complete real-time access to patient clinical and non-clinical environmental data. Cognitive computing technology (software suites and applications that leverage advanced AI to make better decisions) helps hospitals and healthcare organizations to efficiently manage their business processes by providing actionable insights (gathered through the analysis of multi-structured clinical, behavioral, and environmental data) for simple access to their patients. This model allows for care approaches that can support an individual or their families at any time, in any location.

CognitiveScale's healthcare cognitive cloud platform (consisting of over seven billion healthcare-specific data points) assists providers and payers in managing huge amounts of structured (information on diseases, symptoms, medicines, side effects, doctors, reviews, pharmacies) and unstructured data (critical difficult to access information found in lab and imaging systems, physicians' notes from EMR systems, social, and device data). This solution then organizes this data in a way that is both sensible and actionable.

This cognitive cloud provides organizations with real-time patient data from varied and continuously refreshed sources, such as EMRs and claim systems, which encompass patients' health impacts through their constantly changing behavioral, lifestyle, and socio-economic influences. Recognizing the impact cognitive systems have had in revolutionizing the finance and retail analytics markets, CognitiveScale aim to utilize this same power into the healthcare market which is currently under the pressure of a large overhaul in the healthcare delivery structure. Using various machine learning and artificial intelligence mechanisms, the company is weaving data interpretation and learning systems into effective business processes and applications within a healthcare organization to provide easily accessible and securely stored patient data.

Cognitive Technology Platform Poised to Disrupt the Existing Patient Engagement Models of Operation

The Guided Care suite is based on CognitiveScale's Cognitive Cloud software, through which the company aims to deliver insights-as-a-service by analyzing all types of public, social, and private data. The software provides around the clock services and care support to patients and their caregivers. Moving out of the hospital clinical settings and based on the

patient's diet, medications, lifestyle, and socio-economic needs, the suite provides contextualized, actionable recommendations and insights. This encourages the patients to be fully aware of their health and wellness. It also alerts care managers of any possible re-hospitalizations through timely interventions and machine learned insights, thus providing better population health management and the reduction of unnecessary costs. Due to built-in natural language processing and machine learning tools, the suite automatically updates itself with new data and user feedback to modify recommendations based on the patient's current environment. This drastically reduces re-hospitalizations - and ultimately costs.

CognitiveScale has partnered with a varied range of hospitals, healthcare organizations, research institutions, and technology and consulting companies (e.g., IBM Watson, Deloitte) in an effort to build one of the largest cognitive cloud ecosystems and to deliver powerful solutions for healthcare's biggest problems and challenges. Frost & Sullivan feels that CognitiveScale's emphasis on having a more collaborative approach through partnerships (to expand the expertise of their cognitive cloud database) within the healthcare ecosystem is quite notable. The company believes that there are numerous use cases in healthcare for one single participant to be a complete solution provider, thus leading to fewer competitors and more collaboration. By making its cognitive cloud platform available to varied potential partners, CognitiveScale is expanding the potential applications to a multitude of existing and future treatment tools.

Conclusion

Using modern cognitive computing technology, the pioneering leadership at CognitiveScale is significantly improving the healthcare delivery system by shifting the overall focus of treatment and care to patient engagement and knowledge - rather than just treating a disease. Through its innovative Guided Care suite of solutions and insights-as-a-service, CognitiveScale is enabling healthcare organizations to provide for the complete wellbeing of their patients and total at-risk population in a timely manner. This is in addition to achieving the targeted aim of providing quality care, improving health outcomes, and reducing costs.

For its highly personalized patient-centered and collaborative approach, CognitiveScale has rightly earned the 2015 Frost & Sullivan Visionary Innovation Leadership Award.

Significance of Visionary Innovation Leadership

A visionary innovation leadership position enables a market participant to deliver highly competitive products and solutions that transform the way individuals and businesses perform their daily activities. Such products and solutions set new, long-lasting trends in how technologies are deployed and consumed by businesses and end users. Most importantly, they deliver unique and differentiated benefits that can greatly improve business performance as well as individuals' work and personal lives. These improvements are measured by customer demand, brand strength, and competitive positioning.



Understanding Visionary Innovation Leadership

Visionary Innovation is the ability to innovate today in the light of perceived changes and opportunities that will arise from Mega Trends in the future. It is the ability to scout and detect unmet (and as yet undefined) needs and proactively address them with disruptive solutions that cater to new and unique customers, lifestyles, technologies, and markets. At the heart of visionary innovation is a deep understanding of the implications and global ramifications of Mega Trends, leading to correct identification and ultimate capture of niche and white-space market opportunities in the future.

Key Benchmarking Criteria

For the Visionary Innovation Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Focus on the Future and Best Practices Implementation—according to the criteria identified below.

Focus on the Future

- Criterion 1: Focus on Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Growth Pipeline
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Growth Performance

Best Practices Implementation

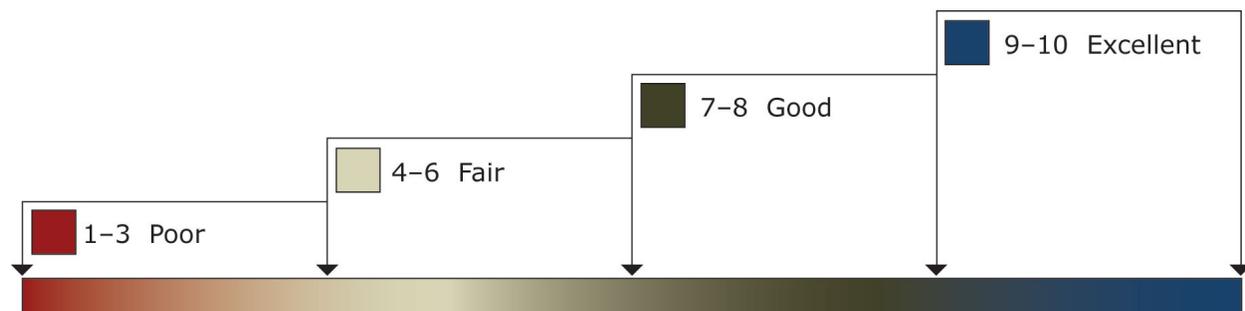
- Criterion 1: Vision Alignment
- Criterion 2: Process Design
- Criterion 3: Operational Efficiency
- Criterion 4: Technological Sophistication
- Criterion 5: Company Culture

Best Practice Award Analysis for CognitiveScale

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Focus on the Future and Best Practices Implementation (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key players as Competitor 2 and Competitor 3.

DECISION SUPPORT SCORECARD FOR VISIONARY INNOVATION LEADERSHIP AWARD

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Visionary Innovation Leadership	Focus on the Future	Best Practices Implementation	Average Rating
CognitiveScale	10	10	10.0
Competitor 2	9	9	9.0
Competitor 3	8	9	8.5

Focus on the Future

Criterion 1: Focus on Unmet Needs

Requirement: Implementing a robust process to continuously unearth customers’ unmet or under-served needs, and creating the products or solutions to address them effectively

Criterion 2: Visionary Scenarios through Mega Trends

Requirement: Incorporating long-range, macro-level scenarios into the innovation strategy, thereby enabling “first to market” growth opportunities solutions

Criterion 4: Growth Pipeline

Requirement: Best-in-class process to continuously identify and prioritize future growth opportunities leveraging both internal and external sources

Criterion 3: Blue Ocean Strategy

Requirement: Strategic focus in creating a leadership position in a potentially “uncontested” market space, manifested by stiff barriers to entry for competitors

Criterion 5: Growth Performance

Requirement: Growth success linked tangibly to new growth opportunities identified through visionary innovation

Best Practices Implementation

Criterion 1: Vision Alignment

Requirement: The executive team is aligned on the organization’s mission, vision, strategy and execution

Criterion 2: Process Design

Requirement: Processes support the efficient and consistent implementation of tactics designed to implement the strategy

Criterion 3: Operational Efficiency

Requirement: Staff performs assigned tactics seamlessly, quickly, and to a high quality standard

Criterion 4: Technological Sophistication

Requirements: Systems enable companywide transparency, communication, and efficiency

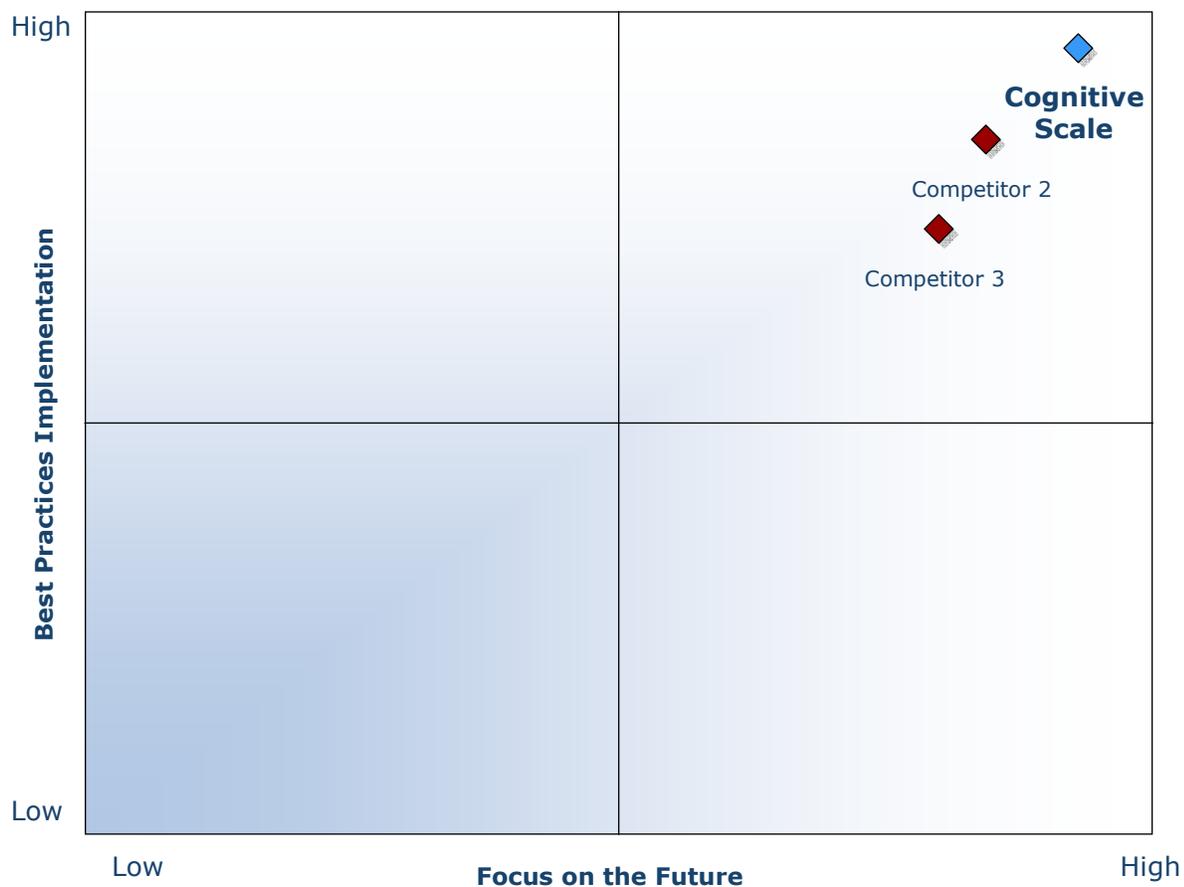
Criterion 5: Company Culture

Requirement: The executive team sets the standard for commitment to customers, quality, and staff, which translates directly into front-line performance excellence

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.

DECISION SUPPORT MATRIX FOR VISIONARY INNOVATION LEADERSHIP AWARD



The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan’s 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often, companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry players and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan Awards follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<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-practice 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-practice Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select winner 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • Present Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10 Take strategic action	Upon licensing, company may share Award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning 	Widespread awareness of recipient's Award status among investors, media personnel, and employees

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 almost 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.