2012 European Integrated Point-of-Care Diagnostic Platforms Technology Innovation Award
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Frost & Sullivan’s Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company’s research philosophy originates with the CEO’s 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2012 European Technology Innovation Award in ‘integrated point-of-care diagnostic platforms’ sector to Radisens Diagnostics Limited.

Significance of the Technology Innovation Award

Key Industry Challenges Addressed by the Radisens Platform:

Blood testing and blood transfusion are an integral part of hematologic care. Presently, the typical procedure for blood tests involves a physician referring a patient to a blood-draw clinic. Depending upon the type of test, results can take several days or even weeks to come, often requiring the patient to wait for longer periods in the interim. The healthcare industry is gearing itself towards addressing the market needs for decentralized diagnostics, driven by the need to contribute significant productivity gains and accomplish work practice efficiencies in healthcare settings; better manage the chronic disease epidemics of obesity, diabetes, heart, and kidney disease; minimize patient waiting lists; and in overall significantly improve patient’ chronic disease management.

Because of the inefficiencies and significant delays often involved in conventional blood testing procedures, the point-of-care (POC) blood testing market has experienced a significant boom in recent few years. Ongoing improvements in blood collection and testing techniques are focused upon designing faster, more accurate, and affordable multiplexed assay panels that provides a physician with routine chronic disease assessment capabilities. However, many POC instruments used for chronic disease management measure a small subset of disease indicators within individual blood test categories, thereby necessitating the usage of myriad POC instruments to aid the physicians in providing routine chronic disease assessment. Many existing POC instruments do not meet the high performance standards of the central reference laboratory. Additionally, with each of these POC instruments having various end-user operation, maintenance requirements, quality procedures, and training needs, physicians face considerable challenges and investment decisions even if POC offers new revenue streams for them and better patient care. Realizing this onward surge to integrate point-of-care instruments covering multiple blood test categories, Radisens Diagnostics Limited, a Cork (Ireland) based medical diagnostics company, is developing a single connected device for long-term chronic disease management that requires only a finger prick of blood to run multiple integrated immunoassay, clinical chemistry and hematology tests, effectively replacing the ten to fifteen stand-alone instruments that a physician would typically require for routine blood testing.
Radisens Diagnostics Limited is developing this diagnostic device and consumable platform based on its proprietary technology to deliver clinical results within minutes of blood draw. Radisens’ innovation converges the fields of consumer electronics, centrifugal microfluidics, solid-state optoelectronic detection, and clinical blood assay development. It is through this promising convergence that the company is developing a miniaturized point-of-care platform to integrate various combinations of multiplexed high sensitivity immunoassay, clinical chemistry, and hematology assays onto single consumable panels targeting long-term chronic disease management. These include panels for thyroid disorder, chronic diabetes, chronic kidney disease and cardiovascular disease.

**Impact of Technology Innovation Award on Key Stakeholders**

The Technology Innovation Award is a prestigious recognition of Radisens Diagnostics Limited's accomplishments in the ‘integrated point-of-care diagnostics’ sector. An unbiased, third-party recognition can provide a profound impact in enhancing the brand value and accelerating Radisens Diagnostics Limited’s growth. As captured in Chart 1 below, by researching, ranking, and recognizing those who deliver excellence and best practices in their respective endeavors, Frost & Sullivan hopes to inspire, influence, and impact three specific constituencies:

- **Investors**
  Investors and shareholders always welcome unbiased and impartial third-party recognition. Similarly, prospective investors and shareholders are drawn to companies with a well-established reputation for excellence. Unbiased validation is the best and most credible way to showcase an organization worthy of investment.

- **Customers**
  Third-party industry recognition has been proven to be the most effective way to assure customers that they are partnering with an organization that is leading in its field.

- **Employees**
  This Award represents the creativity and dedication of Radisens Diagnostics Limited’s executive team and employees. Such public recognition can boost morale and inspire your team to continue its best-in-class pursuit of a strong technology innovating platform for Radisens Diagnostics Limited.
Key Benchmarking Criteria for Technology Innovation Award

For the Technology Innovation Award, the following criteria were used to benchmark Radisens Diagnostics Limited’s performance against key competitors:

- Uniqueness of Technology
- Impact on New Products/Applications
- Impact on Functionality
- Impact on Customer Value and Relevance of Innovation to Industry
Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies' performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company's performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 2.

**Chart 2: Performance-Based Ratings for Decision Support Matrix**

![Performance-Based Ratings for Decision Support Matrix]

This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring 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.

**Chart 3: Frost & Sullivan’s 10-Step Process for Identifying Award Recipients**

- **STEP 1**: Analyze Industry Challenges and Opportunities
- **STEP 2**: Confirm Award Categories of Relevance and Importance
- **STEP 3**: Establish Award Criteria
- **STEP 4**: Develop Best Practice Research Instruments
- **STEP 5**: Conduct Best Practice Research with Industry Value Chain Players
- **STEP 6**: Attribute Relative Weights for Criteria
- **STEP 7**: Nominate Top 3 Companies for Award
- **STEP 8**: Determine Ratings for Each Company Across Criteria
- **STEP 9**: Complete Ratings for All Criteria and Companies
- **STEP 10**: Identify Recipient Company Based on Final Weighted Average Rating
Best Practice Award Analysis for Radisens Diagnostics Limited

The Decision Support Matrix, shown in Chart 4, illustrates the relative importance of each criterion for the Technology Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

**Chart 4: Decision Support Matrix for Technology Innovation Award**

<table>
<thead>
<tr>
<th>Measurement of 1–10 (1 = lowest; 10 = highest)</th>
<th>Uniqueness of Technology</th>
<th>Impact on New Products/Applications</th>
<th>Impact on Functionality</th>
<th>Impact on Customer Value and Relevance of Innovation to Market</th>
<th>Weighted Rating</th>
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<td>7</td>
<td>8</td>
<td>7.6</td>
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<tr>
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</tbody>
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**Criterion 1: Uniqueness of Technology**

Radisens Diagnostics Limited’ miniaturized point-of-care device and consumable platform integrates different combinations of multiplexed high-sensitivity immunoassays, clinical chemistries, and hematology (cell counting) assays onto single consumable panels initially targeting long-term chronic disease management of thyroid disorders, chronic diabetes, cardiovascular disease, chronic kidney disease, and cell counting. With a single device integrating multiple immunoassays, clinical chemistries, and cell counting assays, interpretation of lab-grade data is instantaneous, with all sample preparation and blood testing procedures being integrated into the test panel, thereby enabling accurate, repeatable, sample-to-answer and quality assured results. Radisens’ technology platform is truly considered disruptive, enabled by the convergence of consumer electronics, centrifugal microfluidics, and medical diagnostics to achieve smart decentralization of medical diagnostics from a central reference laboratory into point-of-care settings.

**Criterion 2: Impact on New Products/Applications**

The miniaturized point-of-care platform in development by Radisens Diagnostics Limited can report immediately blood test results to the patient population. Through this approach, patients are more likely to improve prescription compliance and in turn significantly contribute toward reduction in the risk factors for chronic disorders, imparting healthcare systems globally with a much needed tool to combat rising chronic disease
management costs. The deployment of Radisens’ market driven solution in the form of a single device and multiple consumable test panels will enable patient diagnosis to be delivered much earlier and more rapidly in the patient management cycle.

**Criterion 3: Impact on Functionality**

The disruptive diagnostics platform based on Radisens technology has notable features that sets it apart from other competing POC devices in the market. Key advanced features include: all assay and sample preparation steps integrated onto a consumable panel, central reference laboratory performance, solid-state digital optoelectronic detection, advanced digital noise cancellation and analyte microanalysis algorithms, and chiefly a single integrated device platform capable of diagnostics across three blood test categories. Radisens advanced point-of-care platform is expected to be launched in the market in 2014 upon CE regulatory approval, followed by a US launch after FDA 510(k) regulatory approval.

**Criterion 4: Impact on Customer Value and Relevance of Innovation to Industry**

Radisens diagnostics platform’s smart design comprising of a connected multi-diagnostic device and integrated consumables has opened up novel possibilities for the long-term patient management of chronic diseases. Radisens Diagnostics Limited has ongoing developmental projects with three of the top six diagnostic multinationals in addition to close relationships with the United Kingdom’ National Health Service. The company has already received a considerable amount of funding that includes a €1 million contract with the European Space Agency to utilize its multiplexed assay panels aboard the International Space Station, and a €1.1 million seed investment led by Kernel Capital. Radisens Diagnostics Limited is well protected by a strong intellectual property portfolio. In the near future, the firm’s efforts will be focused toward bringing forth the current prototype model to a beta product and subject it through intensive clinical evaluation. The firm is also interested in seeking strategic partnership ventures with diagnostic multinationals to support integration of Radisens Diagnostics' technologies into their diagnostics product offerings. In overall, the potential for Radisens' diagnostic platform based on its real-time connectivity, sample-to-answer operation, high-degree of multiplexing, and low cost features is immense and believed to revolutionize integrated point-of-care diagnostics sector significantly.

**Conclusion**

The growing interest generated towards decentralization of routine blood testing procedures from central reference laboratories into outpatient clinics, physician offices and other point-of-care settings emerges to be a major driving force for Radisens Diagnostics Limited' patent pending diagnostics technology platform. Significant advancements in miniaturization, central reference laboratory-grade performance, advanced multiplexing, and real-time connectivity features are enabling prospects for long-term patient management of chronic diseases. Radisens Diagnostics Limited' patented technology platform and the company’s integrated diagnostic device targeted to point-of-care applications built upon their proprietary technology stands out as a promising solution.
The CEO 360-Degree Perspective™ - Visionary Platform for Growth Strategies

The CEO 360-Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan’s global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360-Degree Perspective™ is also a “must-have” requirement for the identification and analysis of best-practice performance by industry leaders.

The CEO 360-Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies’ growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360-Degree Perspective™ into their analyses and recommendations.

Chart 5: CEO's 360-Degree Perspective™ Model
Critical Importance of TEAM Research

Frost & Sullivan's TEAM 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 seven of Frost & Sullivan’s research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 6: Benchmarking Performance with TEAM Research

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 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.