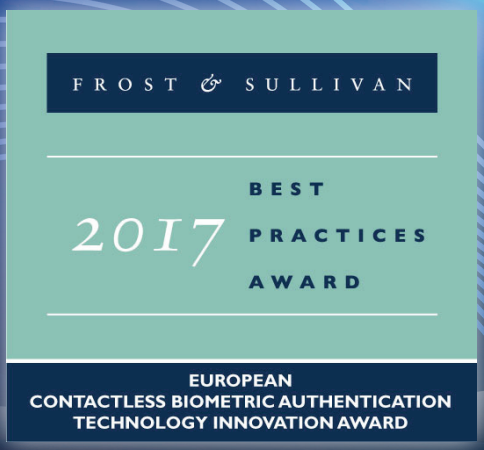
FROST & SULLIVAN

CONTINUSE BIOMETRICS

2017 European Contactless Biometric Authentication Technology Innovation Award



Contents

Background and Company Performance

Industry Challenges

Biometrics is becoming the ideal form of authentication replacing the traditional use of passwords, personal identification numbers (PIN), and smart cards. Innovations geared towards technology development that delivers accurate identification and seamless integration potential with existing infrastructure is increasing. Various modalities of biometric (touch and touch-less types) technologies such as voice recognition, facial recognition, palm vein recognition, and fingerprint scanning are being leveraged to deliver innovative access management solutions; however, most of these technologies have certain limitations that restrict wide-scale adoption. Reliability and flexibility of usage are the two major concerns in this regard.

Although a few of the biometric technologies available today are becoming more affordable for consumer applications, limitations pertinent to accuracy and reliability are hindering usage. Moreover, the parameters used by the traditional biometric technologies can easily be duplicated to create false identities. In addition, these technologies have accessibility issues in diverse environmental conditions such as light reflection, body sweat, and obstruction from clothing that restrict rapid identification, thereby making it a time-consuming process to discard false positives.

To address issues stemming from reliability, accuracy, and flexibility of usage, Israel-based biometric solution provider ContinUse Biometrics Ltd. (ContinUse Biometrics) has come up with an innovative contactless bio-sensing technology. Using unique and patented methods for bio-sensing, the ContinUse Biometrics technology introduces efficiency, accuracy, and reliability through a single biometric solution.

Technology Attributes and Future Business Value

Visionary Innovation

In a competitive technology landscape, delivering a unique solution pertaining to the unmet needs of the market often proves to be a strong differentiating factor for companies that are trying to solidify a market position. Biometrics authentication technologies have been available in the market for quite some time; however, challenges related to accuracy and reliability of these solutions are hindering adoption potential. For instance, fingerprint biometrics and palm vein recognition are often affected by body sweat; facial recognition is affected by ambient light; and voice recognition systems may fail to detect accurately when voice pitch changes for an individual over time.

With an objective to address these prevailing challenges with existing biometrics technologies, ContinUse Biometrics uniquely positions its solution as a contactless bio-sensing technology that can assess identities from a distance thereby negating the need to touch the device for authentication and enabling a more flexible operation. The solution

uses unique and patented methods for nano-level detection and analysis of vibrations that are associated with the movement of tissues of external and internal organs. By inspecting unique biomarkers of each individual's heart-beat profile, it is capable of distinguishing between people. ContinUse Biometrics' technology opens up various new potential applications like smart health assessment, secured Internet of Things (IoT) applications, and many more, thereby not limiting the solution's applicability to identity detection purpose only, unlike other biometric technologies.

Scalability

The innovation of ContinUse Biometrics' solution lies in its simple yet effective functional design, which will help the company to forge ahead in the competitive biometrics technology market. The company uses off-the-shelf and affordable hardware (including fully eye-safe laser light and camera) to capture bio-parameters from an individual. The laser light illuminates the subject, and then actively and continuously measures biomedical parameters resulting from vibrations, both directly and indirectly based on unique and patented methods for speckle analysis.

By analyzing the difference in vibration signals at various locations within the body via its proprietary software platform, the ContinUse Biometrics solution enables users to identify several bio-parameters remotely, such as unique heart rate, respiratory rate, blood pressure, blood flow dynamics, myography, glucose levels, alcohol levels, hydration levels, and more. Since the technology is primarily dependent on software algorithms for analysis, it provides the opportunity for the company to easily improve the accuracy of the solution over time. Ongoing research and development will enable ContinUse Biometrics to include additional bio-parameters over time to its proprietary platform.

Industry Impact

ContinUse Biometrics technology will mainly impact the security industry in terms of reliability and accuracy of identity detection. The nano-detection of bio-parameters will help to produce more reliable products compared to traditional biometric solutions where identities can be replicated more easily. The ContinUse technology is not affected by lighting conditions or any obstruction from clothes due to the usage of laser illumination that detects vibrations easily from a distance. This feature offers increased flexibility and accurate analysis of bio-parameters, which is not possible with existing technologies.

A reliable access management system is the need of the hour in the security space with the advent of IoT. In a connected environment, reliable identity technology that at the same time offers flexibility of usage will be a benchmark in the coming years, and ContinUse Biometrics is well suited to deliver the best of both worlds through its touch-less bio-sensing system.

Application Diversity

The application potential of ContinUse Biometrics' technology is diverse, spanning many industries and use cases. In fact, with the advent of IoT, several new applications are rapidly penetrating the biometrics market across industries.

In the healthcare sector, for example, eHealth remote monitoring applications could leverage the benefits of ContinUse Biometrics' technology to add sophistication in securing sensitive information access. In addition, the diverse bio-parameter detection capability through simple laser illumination facilitated by advanced algorithms and patented technology will enable the development of advanced portable bio-parameter detection products for consumers to carry out medical tests remotely on their own in a cost-effective manner. It will enable medical systems to target, within a household, members suffering from chronic diseases, and enable attending physicians to follow the progression of their condition – a useful feature in domains such as elderly care. It will eliminate the need for intrusive wearables that are in constant body contact for detection of a few bio-parameters. This will help to reduce the healthcare cost for consumers significantly, while securing increased compliance.

In the automotive sector, smart cars are gaining popularity, but one of the key concerns is the authentication of drivers. An advanced bio-parameter detection system based on the ContinUse Biometrics technology could help make identity checks more accurate. It will also help in the development of advanced driver assistance systems (ADAS) where bio-parameters could identify the health condition of drivers and proactively notify the appropriate parties of any irregular behavior.

For enterprises, ContinUse Biometrics technology will not only offer access management solution but will also enables enterprises to leverage the technology to enhance employee effectiveness. With this innovative technology, enterprises will have the power to constantly monitor the health conditions of individual employees and take medical support in advance in case of emergencies. Advancement of this technology could inspire new capabilities in understanding the stress levels of employees, thereby helping in the employee-management process for improved productivity. In addition, bio-sensing ability through laser illumination will be cost effective for employers compared to the smart cards used by the majority of large organizations today.

Customer Acquisition

ContinUse Biometrics uses only off-the-shelf components and analytics software that eliminates the need for any additional specialized hardware, unlike other biometric sensing technologies, which will provide the company a competitive edge in terms of implementation costs. This cost benefit will allow companies of all sizes to leverage the benefits of the technology.

The considerable amount of flexibility, accuracy, and scalability the technology offers will facilitate its adoption over other access management technologies that often suffer from being obsolete due to the dynamic nature of the threat landscape. Additionally, the off-the-shelf hardware sensor used by ContinUse Biometrics will provide the advantage for users to integrate their preferred hardware for easy up-gradation in the future, thus offering more flexibility than other proprietary sensor-based technologies can.

Technology Licensing

ContinUse Biometrics, at present, is mainly focusing on partnership programs for technology feature development and implementation based on clients' requirements. The company has partnered with major medical and technological companies, include top global security solution providers Johnson Controls Internationals (previously Tyco) and information technology giant Lenovo for further advancement of the technology and delivery of biometric products for their clients. All the implementations are carried out through the development of proof-of-concepts to meet the demands of individual customers. This customer-specific approach clearly depicts the company's zeal to deliver the best quality solutions.

Apart from the key application focus areas at present for ContinUse Biometrics (i.e., enterprise access management, healthcare, and automotive), other areas will likely experience the benefits of this technology in the coming years. Digital payment is one area, for instance, in which touch-less bio-sensing technology to authenticate payments in heavy-usage areas like banking and retail will significantly reduce the time of service and improve security in the digital payment process. Aerospace and defense is another area that might benefit from the technology through applications such as cockpit authentication and pilot health monitoring.

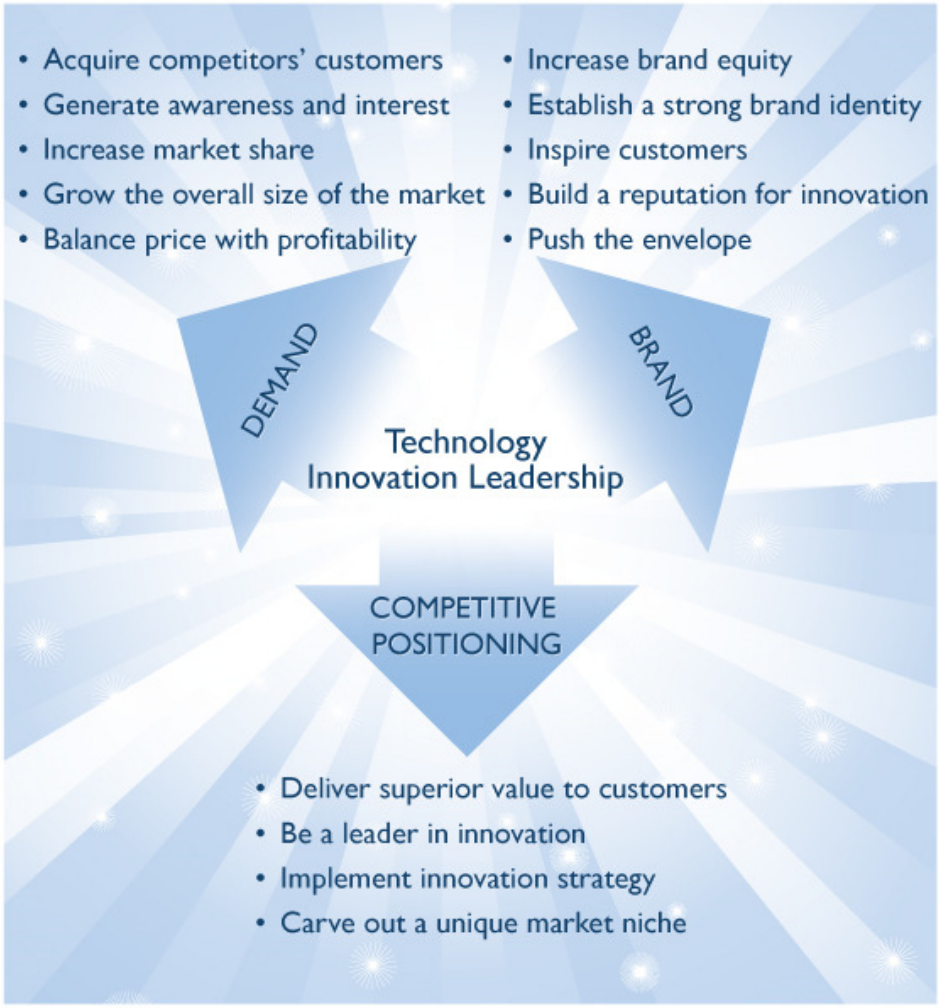
Conclusion

ContinUse Biometrics Ltd. has emerged as an early innovator in the contactless bio-sensing biometric technology space. By virtue of its ability to deliver a best-in-class biometric authentication solution (based on proprietary algorithms and its patented nano-level detection technique) in a cost-effective and flexible manner, the contactless bio-sensing biometric technology has gained a competitive advantage over other traditional authentication technologies. The high integration potential and the scalability it offers are some of the added advantages over its competitors.

Frost & Sullivan is pleased to recognize ContinUse Biometrics Ltd. as the recipient of the 2017 Europe Technology Innovation Leadership Award for its innovative contribution to the contactless biometric authentication market.

Significance of Technology Innovation

Ultimately, growth in any organization depends upon finding new ways to excite the market, and upon maintaining a long-term commitment to innovation. At its core, technology innovation or any other type of innovation can only be sustained with leadership in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Technology Innovation

Technology innovation begins with a spark of creativity that is systematically pursued, developed, and commercialized. That spark can result from a successful partnership, a productive in-house innovation group, or the mind of a singular individual. Regardless of the source, the success of any new technology is ultimately determined by its innovativeness and its impact on the business as a whole.

Key Benchmarking Criteria

For the Technology Innovation Award, Frost & Sullivan analysts independently evaluated two key factors—Technology Attributes and Future Business Value—according to the criteria identified below.

Technology Attributes

Criterion 1: Industry Impact
Criterion 2: Product Impact
Criterion 3: Scalability
Criterion 4: Visionary Innovation
Criterion 5: Application Diversity

Future Business Value

Criterion 1: Financial Performance
Criterion 2: Customer Acquisition
Criterion 3: Technology Licensing
Criterion 4: Brand Loyalty
Criterion 5: Human Capital

Best Practice Award Analysis for ContinUse Biometrics Ltd.

Technology Attributes

Criterion 1: Industry Impact

Requirement: Technology enables the pursuit of groundbreaking new ideas, contributing to the betterment of the entire industry

Criterion 2: Product Impact

Requirement: Specific technology helps enhance features and functionality of the entire product line for the company

Criterion 3: Scalability

Requirement: Technology is scalable, enabling new generations of products over time, with increasing levels of quality and functionality

Criterion 4: Visionary Innovation

Requirement: Specific new technology represents true innovation based on a deep understanding of future needs and applications

Criterion 5: Application Diversity

Requirement: New technology serves multiple products, multiple applications, and multiple user environments

Future Business Value

Criterion 1: Financial Performance

Requirement: High potential for strong financial performance in terms of revenues, operating margins and other relevant financial metrics

Criterion 2: Customer Acquisition

Requirement: Specific technology enables acquisition of new customers, even as it enhances value to current customers

Criterion 3: Technology Licensing

Requirement: New technology displays great potential to be licensed across many sectors and applications, thereby driving incremental revenue streams

Criterion 4: Brand Loyalty

Requirement: New technology enhances the company's brand, creating and/or nurturing brand loyalty

Criterion 5: Human Capital

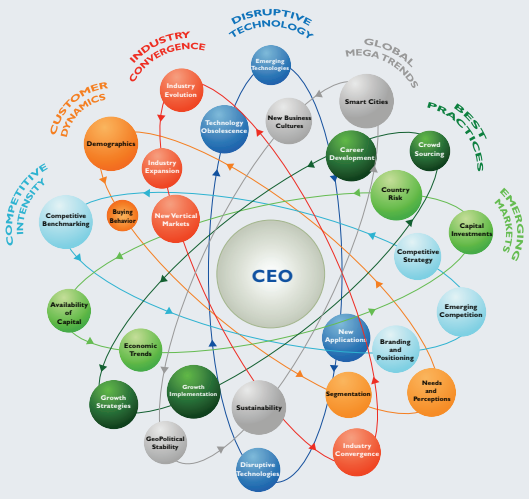
Requirement: Customer impact is enhanced through the leverage of specific technology, translating into positive impact on employee morale and retention

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

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