FROST & SULLIVAN

ETB GaitSmart™
Mobility is Life

2017European Gait Analysis New Product Innovation Award

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2017 BEST PRACTICES AWARD

EUROPEAN GAIT ANALYSIS
NEW PRODUCT INNOVATION AWARD

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Gait refers to the way a person walks. A normal gait will use energy efficiently to transport someone from place to place while minimizing force impact. Conversely, a dysfunctional or unhealthy gait can use up more energy than needed and cause pain (or even injury) over time. This is particularly true for people who are elderly, afflicted with osteoarthritis, or recovering from hip or knee operations.

For various reasons, people subconsciously assume an abnormal gait; analysing their movements enables clinicians to recommend better walking habits. Gait analysis grew out of analysing the movement of athletes striving to run faster. Gait analysis typically is conducted in an optical laboratory where the subject, attired in running clothes, is filmed by cameras while walking on a treadmill or across a room. These captured images are analysed by specialized software that will identify any deviations from efficient gait patterns, so that they can be corrected.

Frost & Sullivan notes that the drawback, however, is that this approach requires patients to enter a clinic, or optical lab, and to wear special clothing, which is often inconvenient for senior citizens or post-operative knee or joint patients. In addition, gait analysis is typically costly; sports institutes charge over $100 for a single basic analysis and over $500 for a full biomechanical and gait analysis. The total cost rises when follow-up testing is needed to judge the efficacy of the clinician's recommendations.

Frost & Sullivan appreciates how ETB of Codicote, UK properly recognised these restraints and developed a portable gait analysis system - called GaitSmart - that can be used in the patient's home, while the user wears ordinary clothing. This simple-to-operate system provides the same accuracy — at approximately one-eighth of the cost — as conventional optical lab-based systems. Further, GaitSmart does not simply record the patient's movements on a treadmill, but generates specific recommendations for correcting his or her gait. Frost & Sullivan points out that these portability and corrective recommendation features will make the benefits of gait analysis available to a much wider audience.

New Product Attributes and Customer Impact

Match to Needs

ETB has designed its gait analysis solution to address the needs of three customer types: the end user, health professional, and clinical researcher.

End User: For the end user, GaitSmart provides a gait analysis test that can be conducted in virtually any location, that eliminates the need for special clothing, and that provides quick results complemented by outcome-based recommendations. In other words, GaitSmart brings gait analysis to the patient's own environment to improve the validity of data by enabling the patient to perform in his or her normal, every-day fashion. As such, the platform facilitates convenient testing of elderly, less mobile patients.

Health Professional: Health professionals use GaitSmart to obtain detailed information on their patient's gait at their own clinic completed during a single appointment. They can make informed diagnosis, or, at a minimum, choose the right pathway to care that is comparable to what an optical gait lab would provide. GaitSmart achieves this by

generating the data on how the patient's gait differs from the norm, and will compare it to data on patients with certain conditions, often eliminating the need for a follow-up visit.

Clinical Researcher: GaitSmart provides clinical researchers with the full gait kinematics of a subject with the same degree of accuracy as would be provided by an optical gait laboratory. By testing a patient faster than possible in an optical lab, GaitSmart gives clinical researchers more data to enable more robust research.

Reliability

Frost & Sullivan points out that that health professionals treating patients with a variety of mobility issues require objective detailed data describing each patient's gait kinematics. That data must be accessible in the clinic to support an accurate diagnosis, something gait analytic technologies were unable to accomplish before the advent of GaitSmart.

The GaitSmart solution truly addresses this need by working reliably in a clinic or a home, providing accurate detailed data speedily, at a lower cost than optical gait labs or by using X-rays or magnetic resonance imaging (MRI) scans. The gait analysis test has been given to both healthy subjects and individuals with known medical conditions, and demonstrated its ability to precisely detect gait abnormalities. GaitSmart does not require skilled intervention to provide standardized measurements for gait kinematics beyond what could be expected of a clinical tool.

Quality

ETB's gait analysis technology includes features that Frost & Sullivan believes clearly underpin the high quality of the technology. First, the gait analysis system is CE Marked, meaning it conforms to the certification of electronic products sold in the European Economic Area since 1985, and has the Class 1 Medical Device Approval required for clinical use in Europe.

GaitSmart eliminates the need for special training, as required from other competing solutions evaluated by Frost & Sullivan, by providing easily-understood traffic light coding to warn users of potential problems. The entire gait analysis test takes 10 minutes, a major difference when compared to the hours spent in an optical gait lab using other techniques. Clinicians using GaitSmart are able to draw upon a large supporting database for different patient cohorts to help support their diagnosis.

Design

GaitSmart incorporates small, lightweight sensors into customized straps that are easily applied to the patient's calf, pelvis, and thigh. These need not be precisely aligned, and can be applied over clothing, making the system convenient and user-friendly for both the clinician and patient. When the patient commences the test by walking, whether in a clinic or at home, the wireless sensors provide digital data to a laptop, and subsequently the GaitSmart proprietary algorithms automatically produce accurate results. The sensors, straps, and laptop of the GaitSmart system are housed in a single light, portable case to facilitate simple transport to and from locations.

Positioning

An unmet need in the clinical gait analysis space that Frost & Sullivan has identified is the accurate and detailed measurement of individual gaits to make diagnosis of mobility issues sufficiently robust and thus improve patient outcomes. For example, such enhanced gait analysis can be used to devise helpful personalized walking programs for patients suffering early stage osteoarthritis. Patients with a tendency for falling can be taught ways to improve how they walk to address muscle deficiencies. EBT's solution automatically provides the much needed accuracy and details in its gait analysis to achieve these goals without the input of trained gait specialists, a distinct advantage over other gait analytic technologies.

Customer Ownership Experience

Patients and clinical customers of GaitSmart attest to the efficacy of this gait analysis system. A case in point is a 75-year-old woman who had her right hip replaced and suffered extreme pain six months after the procedure. After a medical consultant advised the problem was muscle pain and did not require further treatment, the septuagenarian took a GaitSmart test that identified the true problem resulted from a lack of hip motion. The GaitSmart provider explained this and provided the woman a simple personalized exercise program. The patient was monitored every 2 months, her progress tracked using the GaitSmart report, and modifications made to her exercise program accordingly. After 6 months, her gait returned to a normal profile, and she now walks without pain and has stopped taking pain medication.

The Royal National Orthopaedic Hospital (RNOH) in London and the University College in London have used the GaitSmart solution to conduct studies on the healthy population, frail elderly patients, early stage osteoarthritis patients, and knee replacement patients one year after their operation. The RNOH studies confirm that the GaitSmart system achieves accuracy comparable to analysis accomplished in optical gait laboratories.

Conclusion

According to the British National Health Service (NHS), approximately 90,000 knee operations were performed in NHS hospitals and clinics in 2015. The NHS forecasts these operations to grow at approximately 7% per year. Frost & Sullivan research confirms that the growing aging population in Europe and other industrialized regions will increase the need for knee and hip replacement, as well as treating osteoarthritis. While gait analysis will benefit these populations, their restricted mobility will make optical lab visits challenging.

Frost & Sullivan firmly believes that the GaitSmart technology liberates these less mobile patients from clinical visits by bringing the technology to their homes. Automating the

analysis so that clinicians without specialized training can conduct gait analysis will help make gait analysis vastly more accessible to benefit the health and comfort of a growing audience. For these reasons, Frost & Sullivan presents ETB the 2017 New Product Innovation Award in Gait Analysis.

Significance of New Product Innovation

Ultimately, growth in any organization depends upon continually introducing new products to the market and successfully commercializing those products. For these dual goals to occur, a company must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.

Understanding New Product Innovation

Innovation is about finding a productive outlet for creativity—for consistently translating ideas into high-quality products that have a profound impact on the customer.

Key Benchmarking Criteria

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated two key factors—New Product Attributes and Customer Impact—according to the criteria identified below.

New Product Attributes

Criterion 1: Match to Needs
Criterion 2: Reliability
Criterion 3: Quality
Criterion 4: Positioning
Criterion 5: Design

Customer Impact

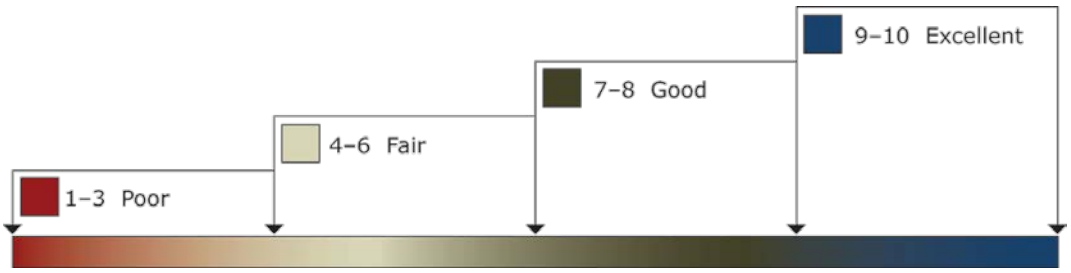
Criterion 1: Price/Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Best Practices Award Analysis for ETB

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 New Product Attributes and Customer Impact (i.e., These are 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, we have chosen to refer to the other key participants as Competitor 2 and Competitor 3.

Measurement of 1–10 (1 = poor; 10 = excellent)			
New Product Innovation	New Product Attributes	Customer Impact	**Average Rating**
ETB	**10.0**	**10.0**	**10.00**
Competitor 2	9.5	9.0	9.25
Competitor 3	8.5	9.0	8.75

New Product Attributes

Criterion 1: Match to Needs

Requirement: Customer needs directly influence and inspire the product's design and positioning.

Criterion 2: Reliability

Requirement: The product consistently meets or exceeds customer expectations for consistent performance during its entire life cycle.

Criterion 3: Quality

Requirement: Product offers best-in-class quality, with a full complement of features and functionalities.

Criterion 4: Positioning

Requirement: The product serves a unique, unmet need that competitors cannot easily replicate.

Criterion 5: Design

Requirement: The product features an innovative design, enhancing both visual appeal and ease of use.

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 most 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

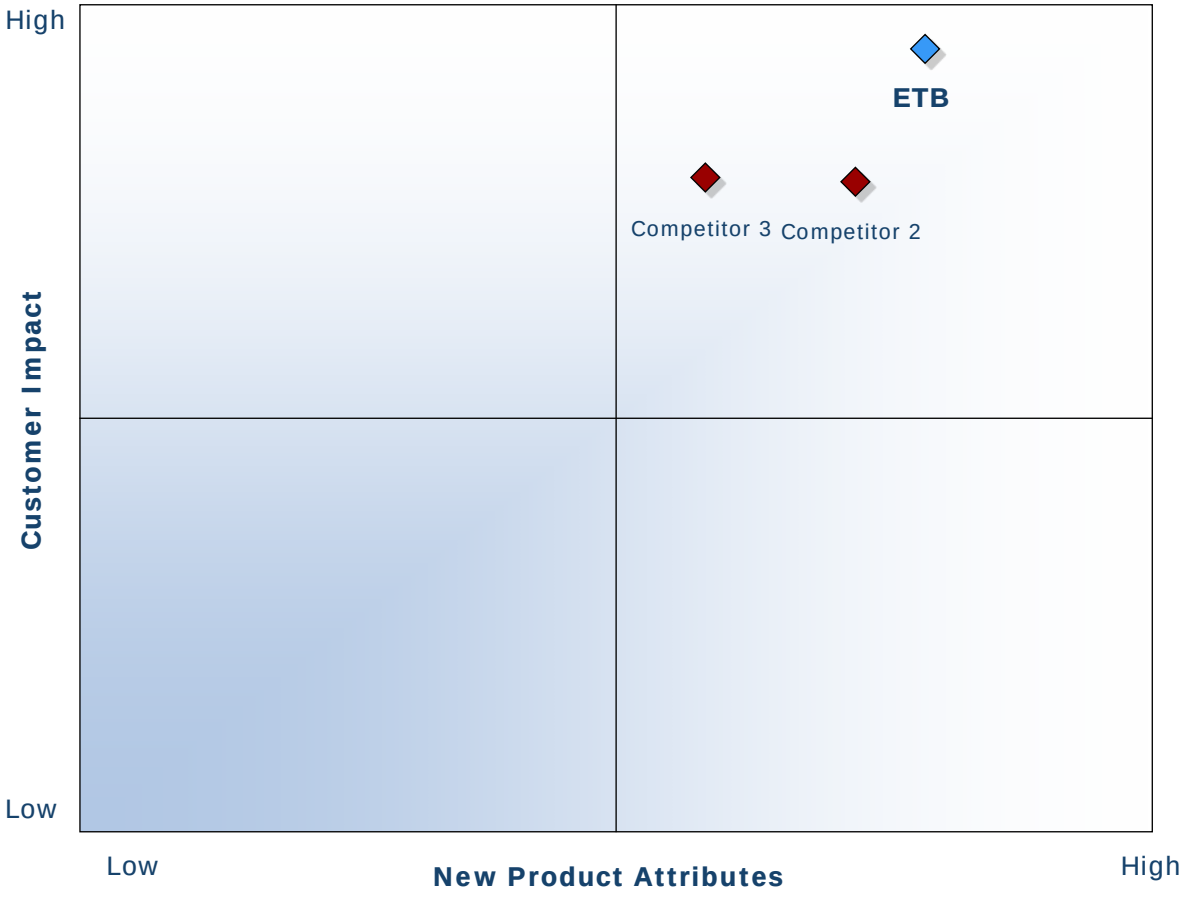
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

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 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 of 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 recipient	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 is able to 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

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 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, 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 more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.