BostonGene

2025 TECHNOLOGY INNOVATION LEADER

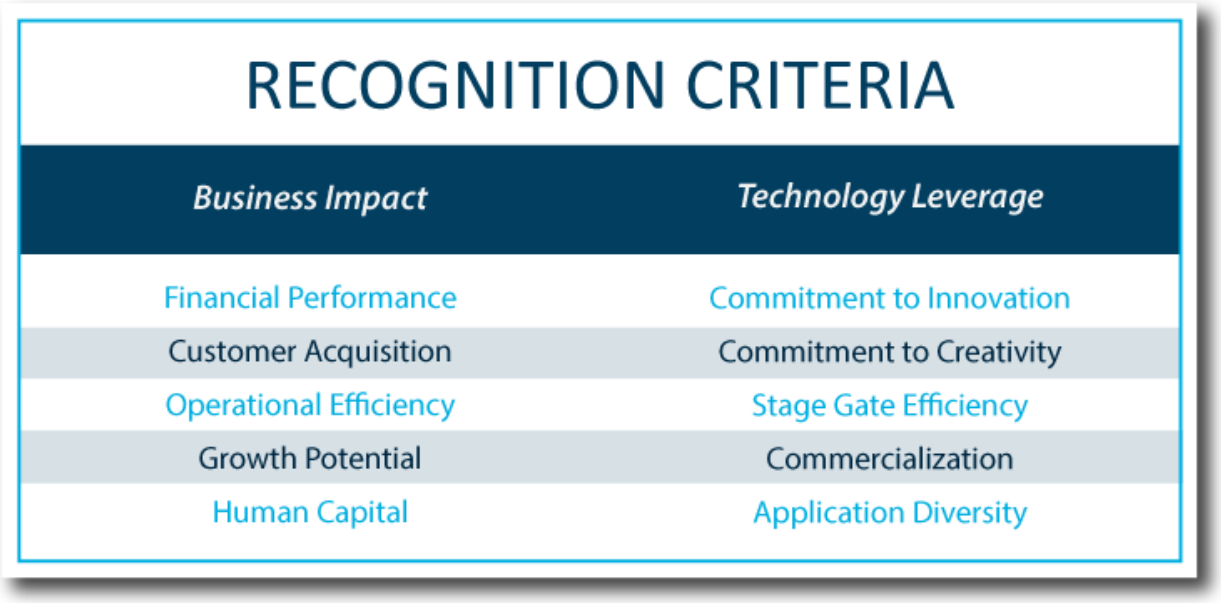
Enhancing Customer Impact Through Powerful Technology Integration

RECOGNIZED FOR BEST PRACTICES IN THE GLOBAL AI-DRIVEN PRECISION ONCOLOGY SOLUTIONS INDUSTRY

FROST & SULLIVAN

Best Practices Criteria for World-class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each recognition category before determining the final recognition recipient. The process involves a detailed evaluation of the best practices criteria across two dimensions for each nominated company. BostonGene excels in many of the criteria in the AI-driven precision oncology solutions space.



Reshaping the Future of Oncology through AI-powered Insights

The unmet medical needs within Oncology remain considerable, despite advances across many cancer types. The complex interactions of cancer biology and the immune system are the key to unlocking new therapies across the broad landscape of complex disease. Traditional approaches, constrained by limited integration of clinical, genomic and immune data, often fail to capture this complexity, leading to delayed trial timelines, increased costs and variable patient outcomes. Until recently, it was not possible to unlock the complex biology hidden behind the wealth of available data. BostonGene has brought to market an AI-powered foundation model that can drive innovation in drug development at an unprecedented rate through precision-guided clinical design.

Innovative research and development (R&D) are driving market growth. Investments in artificial intelligence (AI)-driven analysis of tumor multi omics and spatial data, along with advancements in high-throughput sequencing technologies, are accelerating discovery. While advances in discovery are needed, so too are the analytical advances in drug development through clinical trials. Leading biopharma organizations are shifting toward AI-powered platforms purpose-built for drug development. These platforms enable more precise trial design, biomarker-driven patient stratification, and earlier identification of efficacy and safety signals., In this evolving landscape, BostonGene is emerging as a key strategic partner.

While targeted therapy approvals continue to rise, significant challenges persist. Tumor heterogeneity, resistance mechanisms, limited adoption of molecular testing, skill shortages, and barriers to clinical trial participation slow recruitment and increase operational and regulatory risk.

For pharmaceutical and biotechnology sponsors, these challenges translate into delayed enrollment, increased trial costs, and reduced confidence in development outcomes. Addressing these gaps requires integrated, scalable solutions that combine advanced analytics with real-world clinical execution.

Enhancing genomic literacy through tailored education and implementing virtual specialist support models is essential to overcoming expertise gaps. Public-private partnerships and multi-stakeholder collaborations also play a crucial role in expanding the reach of precision oncology.

Despite these challenges, Frost & Sullivan expects ongoing technological innovation, policy support, and collaboration to sustain robust growth in the precision oncology market, enabling more personalized and effective cancer care globally.

In this context, companies must offer revolutionary capabilities to address market gaps and clinical complexity. BostonGene Corporation (BostonGene) directly addresses these market gaps with the only natively AI-powered omnimodal foundation oncology and immunology AI model for accelerating and de-risking clinical trials. Built, validated and continuously trained with our comprehensive, structured clinical database, the BostonGene foundation model integrates clinical, genomic and immune data from any source to deliver clear, reliable insights. By capturing the true biology of both tumor and immune systems, BostonGene enables better trial design, smarter patient selection and stratification, and more confident decision-making across the clinical pipeline, from early indication prioritization through post-market evidence generation.

BostonGene's AI-powered foundation model unlocks enhanced clinical development informed by the unique biology of each drug. The company works with pharma teams to interpret complex multiomic data and deliver actionable insights that streamline development, lower risk and increase trial success.

BostonGene is recognized for its groundbreaking contributions to precision oncology through its comprehensive suite of molecular and immune system profiling solutions , which includes the Tumor Portrait test™, Liquid Biopsy, Immunohistochemistry (IHC) testing and Spatial Proteomics.

Frost & Sullivan applauds BostonGene for advancing individualized cancer care and accelerating the development of targeted therapies. By providing innovative solutions that improve diagnostic accuracy, BostonGene enables biomarker-driven patient stratification and optimized clinical trial design.

BostonGene: Unmatched Scalability, Enhanced Capabilities

At the core of BostonGene's value proposition is its multi-scale, omnimodal AI platform purpose-built for oncology, which integrates next-generation sequencing, digital pathology, flow cytometry, and spatial profiling technologies. Unlike single-modal analytics solutions, BostonGene's platform captures multi-scale biological complexity, enabling precise modeling of tumor behavior and immune system interactions. The platform harmonizes and interprets multi modal data–including genomic, transcriptomic, proteomic, immunologic, imaging, and clinical information --to provide a comprehensive molecular and cellular understanding of the tumor and its microenvironment. Leveraging this data,

BostonGene constructs patient-specific digital twins, including immune system digital twins, to model disease progression, predict patient response, and guide therapeutic development with a level of precision and context that traditional approaches cannot match.

BostonGene's platform operates across four biological levels.

- **Molecular**: analyzing the underlying genetic, transcriptomic, and proteomic drivers of disease.
- **Cellular**: measuring signaling pathway activity and the functional composition of the tumor microenvironment.
- **Tissue-profiling:** profiling spatial tissue architecture and cell-cell interactions using advanced imaging and deconvolution methods.
- **Organism**: assessing systemic immune response dynamics to map the tumor's relationship with the host.

The platform's ability to integrate these layers into a unified model enables highly personalized treatment recommendations and increases the predictive power of diagnostics for biomarker strategy, indication selection, and clinical trial optimization. This end-to-end data integration supports every stage of the drug development lifecycle, from preclinical discovery to clinical trial optimization and commercialization. The platform supports the identification of mechanisms of action, bioactivity prediction, biomarker strategy, and target population definition. During clinical trials, it enables a more precise patient stratification strategy, early signal detection, and real-time quality assurance, enhancing therapeutic efficacy and increasing the probability of regulatory success. In later stages, BostonGene supports label expansion, lifecycle management, and drug repurpose strategies, creating opportunities for revenue growth and accelerating time-to-market.

> *"As it scales, BostonGene remains committed to operational efficiency and delivering measurable value. The company recently achieved a one-third reduction in clinical reporting costs through streamlined wet and dry lab operations. These improvements, along with the platform's demonstrated ability to inform drug development decisions, highlight BostonGene's dual strengths as a scientific innovator and a commercially agile partner."*
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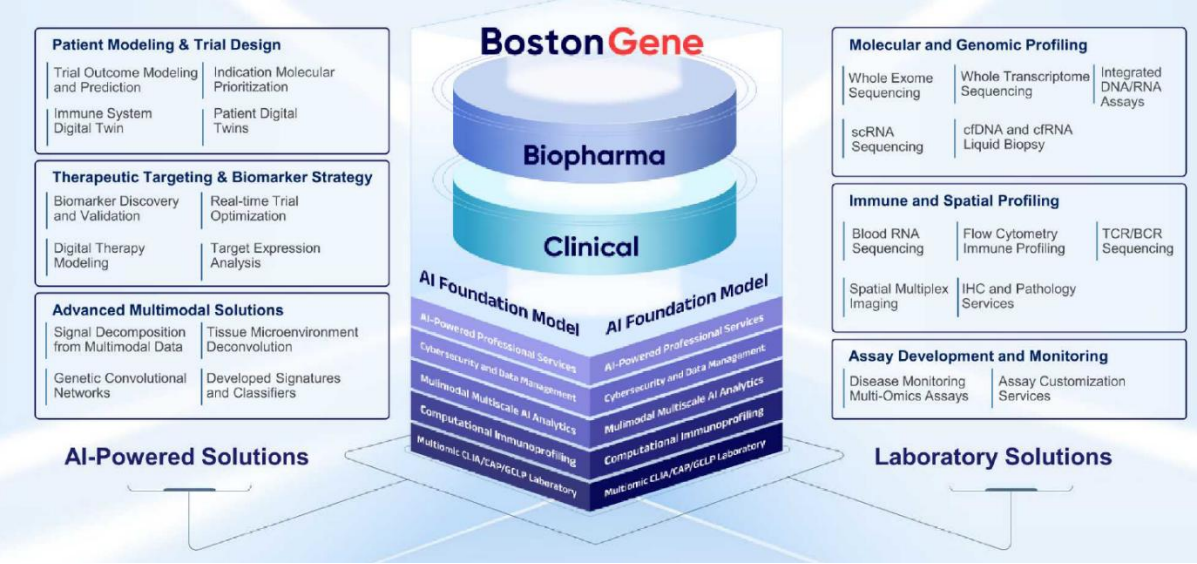
> ***- Surbhi Gupta***
> ***Industry Principal***



Source: BostonGene

Operational efficiency and regulatory readiness further strengthen BostonGene's position. Over the past year, the company achieved approximately a one-third reduction in clinical report generation costs through streamlined wet and dry lab operations.

BostonGene adheres to Good Clinical Practice (GCP) standards, ensuring outputs are validated, audit-ready, and fit for regulatory submissions. Its laboratories are CLIA-certified, CAP-accredited, and NYSDOH-approved, providing strong regulatory confidence.

Proprietary generative AI models further enhance value by reconstructing incomplete datasets, allowing development programs to move forward with confidence even when early-stage data is limited.

In addition to driving drug development through its AI solutions, BostonGene continues to deliver patient-level decision support at leading academic centers. In a recent case involving advanced prostate cancer, BostonGene's Tumor Portrait™ test revealed a combination of biomarkers, including high programmed death-ligand 1 (PD-L1), microsatellite instability, and high tumor mutational burden, suggesting potential responsiveness to immunotherapy.

In a recent case involving advanced prostate cancer, BostonGene's Tumor Portrait ™ test revealed a combination of biomarkers, including high programmed death-ligand 1 (PD-L1), microsatellite instability, and high tumor mutational burden, suggesting potential responsiveness to immunotherapy. Guided by these findings, the clinical team initiated immunotherapy, resulting in a 90% drop in prostate-specific antigen (PSA) levels and significant tumor reduction within three months.[1]

In another case, an elderly patient with advanced triple-negative breast cancer was initially evaluated via standard immunohistochemistry (IHC) and ruled out for immunotherapy due to low PD-L1 levels. With limited options and concerns about chemotherapy side effects, the patient declined further treatment. Years later, BostonGene's Tumor Portrait™ test revealed high PD-L1 expression through a comprehensive

[1] https://bostongene.com/patients/meet-our-patients/kenji

molecular and immune system profiling , an insight missed by the original IHC. A follow-up test confirmed the result, enabling the initiation of targeted immunotherapy. Within three months, imaging showed tumor shrinkage and reduced metastases, demonstrating the impact of a more holistic, AI-driven diagnostic approach.[2]

These cases exemplify how BostonGene's integrative approach enables more accurate patient stratification and timely intervention. By uncovering molecular and immune features invisible to conventional diagnostics, the company empowers oncologists to tailor therapies with greater precision, ultimately improving outcomes and expanding access to life-saving treatments.

BostonGene's differentiated approach is not merely theoretical; it delivers real, quantifiable results in both industry and the clinic. The company collaborates with emerging biotechnology (biotech) firms and global pharma leaders to shape go-to-market strategies, identify responsive patient populations, and guide indication prioritization. In one case, BostonGene helped a small biotech company validate a biomarker strategy and design a Phase I study, ultimately supporting its acquisition by a major pharma company. In another, its collaboration involving the SWOG Cancer Research Network, MD Anderson Cancer Center and a leading pharma company led to the development of a novel transcriptomic assay for small cell lung cancer. The assay is now being used in a national study and is advancing toward broad clinical adoption as a standard of care.

BostonGene is also leading major collaborations aimed at redefining precision medicine. A nationwide initiative, in association with the Parker Institute for Cancer Immunotherapy, is developing a machine learning-based immune system classifier using blood and immune data from thousands of patients. This tool is designed to optimize patient selection for next-generation immunotherapies that are expected to enter clinical trials within the next 12 to 24 months.[3]

BostonGene's scientific leadership is well recognized with more than 60 peer-reviewed publications in 2024,[4] including featured covers in *Cancer Cell* and *Gastroenterology*. The company's commercial success mirrors its scientific momentum; pharma revenue tripled in 2024, with projections indicating continued strong growth driven by expanding enterprise partnerships and broader platform adoption.

In a space as complex and dynamic as oncology, BostonGene offers clarity, precision, and speed. By transforming data into insight and insight into impact, the company is redefining the future of individualized cancer care and evidence-based drug development.

Positioned for Growth

While precision oncology continues to gain traction, BostonGene recognizes that many biopharma organizations remain slow to adopt next-generation analytical platforms. The primary barrier is not regulatory complexity, as often assumed, but rather inertia within traditional development workflows. Many translational and clinical teams are accustomed to legacy methodologies and may not yet be fully

[2] Ibid.

[3] Interview with Frost & Sullivan

[4] BostonGene Presentation Deck

aware of the value offered by integrated AI-powered platforms. As a result, the challenge lies in helping stakeholders see what's possible beyond their current practices.

BostonGene addresses this gap by reframing its technology, not simply as a diagnostic tool but as an interpretive platform that brings clarity to complex biological data and translates it into clinical practice. Rather than relying on raw molecular outputs, the company translates these findings into terms and patterns that align with how pharma teams understand disease mechanisms, highlighting inflammation, fibrosis, immunosuppression, and other relevant biological signatures. This method allows scientists, clinicians, and decision-makers to grasp therapeutic implications more intuitively, accelerating the path from data to action.

> *"Unlike competitors focused on single data types or narrow applications, the company's platform decodes the full biological complexity of cancer, generating clinically actionable insights that drive individualized treatment and biopharma strategy."*
>
> ***- Silvana Rulet***
> ***Best Practices Research Analyst***

To support this approach, BostonGene invests heavily in strengthening its commercial operations. Over the past year, the company brought in an entirely new commercial team with deep pharma experience, launched a market intelligence division, and revamped its communications strategy to better align with the needs and language of its stakeholders. These efforts are designed to secure scientific buy-in and ensure alignment with product development, regulatory planning, and commercialization goals.

BostonGene's growth trajectory reinforces its market relevance. Geographically, BostonGene continues to expand beyond its US base. On the clinical side, it maintains active collaborations across Europe and Asia On the pharma side, its presence is growing across the US, Europe, and Asia , regions that anchor global R&D investment. This international footprint reflects the growing demand for integrated, AI-enabled molecular insights across a broad spectrum of healthcare systems and regulatory landscapes.

As it scales, BostonGene remains committed to operational efficiency and delivering measurable value. The company recently achieved a one-third reduction in clinical reporting costs through streamlined wet and dry lab operations. These improvements, along with the platform's demonstrated ability to inform drug development decisions, highlight BostonGene's dual strengths as a scientifically validated platform and a strategic partner for biopharma innovation .

Frost & Sullivan expects BostonGene to advance its competitive edge further by combining scientific innovation with commercial execution. Through its AI-powered interpretive platform and efficiency-driven operating model, the company accelerates the global adoption of precision oncology, enabling deeper partnerships, broader clinical impact, and sustained growth across key markets.

Conclusion

Technology integration is a critical success factor for the precision oncology industry. Yet, with many options available, market stakeholders need to leverage the most appropriate and best technology-based solutions to optimize their market impact. With its AI -powered omnimodal platform, BostonGene Corporation (BostonGene) delivers clinically actionable insights that enhance therapeutic precision and accelerate every stage of drug development.

By combining scientific rigor, operational efficiency, and strategic partnerships, BostonGene delivers measurable value across the drug development lifecycle. The company stands out from competitors because of its commitment to innovation, scientific rigor, and real-world impact. Its Tumor Portrait™ test integrates genomic, transcriptomic, proteomic, and immunologic data to generate a comprehensive view of the tumor and its microenvironment, enabling more accurate patient stratification, revealing hidden therapeutic opportunities, and informing the design of smarter, more targeted clinical trials.

The platform's flexibility allows it to support a range of stakeholders, from oncologists seeking tailored treatment strategies to pharmaceutical companies prioritizing indications, refining biomarker strategies, and accelerating time-to-market. Through these applications, BostonGene continues to shape the future of individualized cancer care and evidence-based drug development. BostonGene's transformative potential positions the company to continue shaping the future of evidence-driven cancer care and targeted therapeutic development.

For its strong overall performance, BostonGene is presented with Frost & Sullivan's 2025 Global Enabling Technology Leadership Award in the AI-driven precision oncology solutions industry.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Leadership Recognition is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Recognition Analysis

For the Technology Innovation Leadership Recognition, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Leveraging innovative technology characterizes the company culture, which enhances employee morale and retention

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at http://www.frost.com.

The Growth Pipeline Generator™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fueled by the Innovation Generator™.

Learn more.

Key Impacts:

- **Growth Pipeline:** *Continuous Flow of Growth Opportunities*
- **Growth Strategies:** *Proven Best Practices*
- **Innovation Culture:** *Optimized Customer Experience*
- **ROI & Margin:** *Implementation Excellence*
- **Transformational Growth:** *Industry Leadership*

The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives. ***Analytical Perspectives***:

- Megatrend (MT)
- Business Model (BM)
- Technology (TE)
- Industries (IN)
- Customer (CU)
- Geographies (GE)