



Seven Bridges Recognized for

2021

Enabling Technology Leadership

Global Precision Medicine

Informatics Platform Industry

Excellence in Best Practices

Strategic Imperatives

Frost & Sullivan identifies three key strategic imperatives that impact the life sciences industry: geopolitical chaos, disruptive technologies, and internal challenges. Every company that is competing in the life sciences space is obligated to address these imperatives proactively; failing to do so will almost certainly lead to stagnation or decline. Successful companies overcome the challenges posed by these imperatives and leverage them to drive innovation and growth. Frost & Sullivan’s recognition of Seven Bridges is a reflection of how well it is performing against the backdrop of these imperatives.

SIB	GEOPOLITICAL CHAOS	DISRUPTIVE TECHNOLOGIES	INTERNAL CHALLENGES
Why	<ul style="list-style-type: none"> Supply chain stability, manufacturing capabilities, and residual healthcare budgets will dictate the industry’s growth trajectory despite the nondiscretionary nature of pharma products in the COVID-19 scenario. Supply chain resilience will continue to be tested as companies scramble to reallocate and ramp up manufacturing to address supply shortages and tackle government protectionism measures. COVID-19 will likely result in higher demand for access to remote treatment solutions and methods. 	<ul style="list-style-type: none"> The global life sciences industry has benefited from a combination of novel technologies, including artificial intelligence (AI) platforms, the Internet of medical things, and blockchain. Adoption of advanced analytics, automation, and cloud solutions results in increased productivity and better decision-making. Life sciences firms are digitizing operations to address inefficiencies and create patient-centricity and personalized, value-based healthcare solutions. 	<ul style="list-style-type: none"> Fragmented channels in customer communication, lower margins, and intensifying competition challenge the life sciences industry. Companies are seeking to shift focus to from existing therapeutic portfolios to COVID-19- related developments and treatments. Mergers and acquisitions are directly impacting central pharma and instrument developers by exerting cost pressures and mandating consolidation to achieve economies of scale and operational synergies.
When	<ul style="list-style-type: none"> Healthcare organizations will accelerate innovation to respond to the COVID-19 crisis while rethinking post-pandemic care delivery and financing. Government-funded COVID-19 testing initiatives will boost revenues in the next 1 to 3 years. Pharma companies will experiment with new point-of-care (POC) testing, digital supply chain tools, and patient-doctor connectivity programs based on digital platforms. The pandemic will drive new digital-tech adoption in drug discovery and testing services, and federal funding will encourage deeper product pipelines and inventory. 	<ul style="list-style-type: none"> The revenue from AI solutions used in drug discovery is expected to grow 26.3% and reach \$455 million by 2020. New technologies such as augmented reality will be incorporated into labs, processing lines, and drug manufacturing sites to increase safety, reliability, and efficiency. In addition to reinventing R&D through technology-enabled drug discovery and clinical trials, digital transformation will improve commercial and supply chain processes during the next 5 years. Significant growth opportunities await in sensor development for medical instruments and equipment management for connected labs, which will enable remote monitoring and controlling. 	<ul style="list-style-type: none"> The challenge of economically scaling-up manufacturing will remain a major impediment to advancing therapies from the lab to clinics in the short term. Big Pharma companies will decentralize and outsource the manufacturing of novel cell and gene therapies to contract development and manufacturing organizations. Companies must pursue acquisitions of digital solution targets to leverage data monetization opportunities and drive growth in precision medicine. Pharma companies must aggressively invest in improving last-mile connectivity with patients and focus on improving overall health outcomes.

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each Award category before determining the final Award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Seven Bridges excels in many of the criteria in the precision medicine informatics platforms space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Customer Impact</i>
Commitment to Innovation	Price/Performance Value
Commitment to Creativity	Customer Purchase Experience
Stage Gate Efficiency	Customer Ownership Experience
Commercialization Success	Customer Service Experience
Application Diversity	Brand Equity

Setting New Standards for Precision Medicine

Founded in 2009 and headquartered in Boston, MA, Seven Bridges is the industry-leading bioinformatics solutions company. Leveraging its innovative mindset, the company provides a powerful unique solution spectrum covering platform, analytic tools, and services expertise. With a deep commitment to helping clients achieve their goals, it drives discovery and drug development across various applications for leading academic, biotechnology, government, hospitals, and pharmaceutical clients around the globe.

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- Pavel Zhebrouski, Best Practices Research Analyst

Seven Bridges provides genomics research solutions for cancer, drug development, and precision medicine. Frost & Sullivan recognizes how the company is transforming bioinformatics’ foundational approach in precision medicine by implementing directed acyclic graphs for genomic analyses. This technique enables researchers to enhance the linear genome reference to remove inherent biases, represent targeted populations more thoroughly, and target the specific objective of their experiments.¹

¹ Interview with Seven Bridges: Bill Moss, CEO and Brandi Davis- Dusenbery, CSO tell us what the future holds for Big Data, <https://frontlinegenomics.com/interview-with-seven-bridges-bill-moss-ceo-and-brandi-davis-dusenbery-cso-tell-us-what-the-future-holds-for-big-data/>, accessed May 2021

The company is founded on its ground-breaking solution for biomedical data analysis at scale. The Seven Bridges Platform is a cloud-based environment for various teams to store, analyze, and jointly interpret their bioinformatics data. The Platform also co-locates analysis pipelines alongside the largest genomic datasets to optimize processing.

The Seven Bridges Platform enhances secure collaboration features for distributed research groups. It is fully customizable and scalable while allowing data interoperability and maintaining security and compliance; the fundamental aspect of capabilities the company provides. Furthermore, Seven Bridges provides a complete library of tools and workflows for bioinformatics along with a suite of fully customizable visualization tools for users' convenience. The Platform deeply focuses on accurate analysis of biological data along with the state-of-the-art bioinformatics tools and reproducibility features.

The company works with leading cloud providers, including Google Cloud Platform and Amazon Web Services. While offering unparalleled flexibility, Frost & Sullivan points out that Seven Bridges is the only major biomedical data analysis platform to operate on two of the largest public infrastructure providers. The Platform can run entirely in the cloud or on a local high-performance computing environment. Furthermore, Seven Bridges provides a unique solution while enabling the use of hybrid clouds: a user can analyze data locally and leverage powerful cloud computing resources whenever needed. With multi-cloud capabilities, Frost & Sullivan notes that it is the only company to leverage both cloud and local environments efficiently. Customers have the ability to simultaneously access and analyze large data sets across disparate cloud environments, organizations, and geographies.

In addition, Seven Bridges' research and development (R&D) team works continually to improve Graph Genome references, enabling highly accurate variant detection methods. The technology uncovers deeper insights into entire populations.² Its GRAF™ Suite comprises bioinformatics workflows and tools for secondary analysis of next-generation sequencing data based on a pan-genome graph reference. These tools can call variants with superior accuracy - without compromising on speed or cost.³

The Graph Genome is a self-improving system for representing and analyzing genomic information using graphs rather than strings of bases. It allows scientists to compress data heavily and thus operate at an unprecedented scale. It is a highly accurate way to detect individual genetic variation, and this accuracy improves with every new sequence added to the graph. It also offers complete anonymity for individual genomic sequences.

On top of its Platform, the company offers industry-leading bioinformatics and professional scientific services. Notably, tertiary analysis tools like Seven Bridges ARIA enables users to derive scientifically insightful conclusions from individual variants and variant patterns across the entire human genome. It can compare them to in-depth longitudinal phenotypic and healthcare data and outcomes across populations of even millions of patients.⁴

² <https://www.sevenbridges.com/platform/>, accessed May 2021

³ <https://www.sevenbridges.com/graf/>, accessed May 2021

⁴ *Interview with Seven Bridges: Bill Moss, CEO and Brandi Davis- Dusenbery, CSO tell us what the future holds for Big Data,* <https://frontlinegenomics.com/interview-with-seven-bridges-bill-moss-ceo-and-brandi-davis-dusenbery-cso-tell-us-what-the-future-holds-for-big-data/>, accessed May 2021

Additionally, Seven Bridges offers its RHEO solution to enhance custom automation script development and execution directly within the Seven Bridges Platform. The solution can streamline analysis workflows by minimizing the number of manual steps required to set up, run, and conclude an analysis.

With the Platform's comprehensive capabilities (integration, collaboration, analytics), the company can facilitate insights beyond genomics. The innovations behind Seven Bridges' technology enable the discovery of precision medicines for targeted patient populations; as such, drive advancements in life sciences and a healthier global population.

Delivering Exceptional Value for Customers

Seven Bridges' market and technology leadership is the result of aligning its remarkable capabilities and resources to optimize customers' performance with world-class solutions for industry and public partners. The company optimizes bioinformatics and scientific methods to help engineer novel precision medicines and therapies to decrease the time, cost, and risk significantly spanning discovery-through-commercialization cycles; thus, ensuring an unrivalled value level for its customers globally.

Frost & Sullivan appreciates the way that Seven Bridges nurtures close relationships with its customers to properly understand their needs and the market shifts they experience. As a result, its solutions nicely correspond to the real needs of end-users. The company has a prominent analyst and scientist teams across computational and scientific disciplines that work hand in hand with its clients' scientific team to provide technical expertise. Furthermore, the company remains informed and close to customers' experienced needs, collecting their feedback, sharing best practices, and driving industry-wide innovations for broader customer success. Seven Bridges remains the thought leader in sharing genomic data (the most precious patient information) while shaping the internal procedures for biopharma clients.

"The company provides a broad service line, including the platform, ecosystems driving exploratory analytics, professional services, and transformative technology. On top of that, Seven Bridges leverages its data strategy for unique customer benefits, being the leading organization connecting large data sets and bringing communities together. As a result, it promptly responds to the demands from leading biopharma clients, asking for integration capabilities across their entire R&D strategy."

- Pavel Zhebrouski, Best Practices Research Analyst

The company helps patients by enabling its customers to deliver transformative care, providing robust, reliable, and innovative solutions, and speeding up R&D efforts. It is also working on scaling its solutions while improving continually to satisfy customers' evolving requirements. Specifically, the clients leverage Seven Bridges' expertise to shape the data strategy and data ecosystem to meet today's demands and the demands for the next five to ten years. The company provides a broad service line, including the platform, ecosystems driving exploratory analytics, professional services, and transformative technology. On top of that, Seven Bridges leverages its data strategy for unique customer

benefits, being the leading organization connecting large data sets and bringing communities together. As a result, it promptly responds to the demands from leading biopharma clients, asking for integration capabilities across their entire R&D strategy.

Frost & Sullivan's own research confirms that the company distinctly differentiates in the market with its remarkable track record working with biopharma companies and biobanks. Notably, Seven Bridges was selected as the core informatics supplier by the United Kingdom Biobank in partnership with Sanger to sequence and analyze 50,000 participant samples associated with the whole genome sequencing Vanguard Phase in 2019.⁵

In addition, the company is the first and only private organization **ever** to obtain National Institutes of Health Trusted Partner status. While providing services and bioinformatics ecosystems to public and national genomic programs, Seven Bridges has a proven history of democratizing access to various data, tools, and algorithms and deploys innovative analytic methods for population-scale genomic research. With its remarkable market performance and customer-centric approach, the company gains wide recognition from its customers. Pfizer recently selected Seven Bridges to develop a data management and collaboration solution for its single-cell ribonucleic acid sequencing data.⁶

Deep expertise and a solid commitment to helping clients achieve their goals and transforming how it incorporates genomics and health information clearly differentiate Seven Bridges in the space even further. Frost & Sullivan appreciates how this client-oriented approach adds true value to customers' operations and contributes to their effective and sustained success.

Conclusion

Today, there are growing demands for fast and secure genomic and healthcare data analytics. Seven Bridges promptly responds to these needs delivering end-to-end bioinformatics solutions, speeding up the path from raw experimental data up to new treatments and diagnostics. The company provides a broad service line, including the platform, ecosystems driving exploratory analytics, professional services, and transformative technology for industry and public partners. On top of that, Seven Bridges leverages its data strategy for unique customer benefits by service as the leading organization connecting large data sets and bringing communities together. It introduced the ground-breaking Seven Bridges Platform, a cloud-based environment that is fully customizable and scalable while allowing data interoperability and maintaining security and compliance.

With its commitment to innovation, strong overall performance, and value behind its solution, Seven Bridges earns the 2021 Frost & Sullivan Global Enabling Technology Leadership Award.

⁵ Founders' story: Seven Bridges, <https://medcitynews.com/2020/07/founders-story-seven-bridges/>, accessed May 2021

⁶ Seven Bridges Selected by Pfizer to Support Data Management Solution for Single-Cell RNA Sequencing Data, <https://www.sevenbridges.com/press/releases/seven-bridges-selected-by-pfizer-to-support-data-management-solution-for-single-cell-rna-sequencing-data/>, accessed May 2021

What You Need to Know about the Enabling Technology Leadership Recognition

Frost & Sullivan's Enabling Technology Leadership Award recognizes the company that applies its technology in new ways to improve existing products and services and elevate the customer experience.

Best Practices Award Analysis

For the Enabling Technology Leadership Award, 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 Success: 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

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

