



LifeOmic Recognized for

2021

Enabling Technology Leadership

North American Precision
Health Informatics Industry
Excellence in Best Practices

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. LifeOmic excels in many of the criteria in the precision health informatics 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

Precision Health: A Snapshot

Precision health's goal is to save billions of dollars through more cost-efficient, targeted healthcare utilization. A top strategic imperative, precision health leverages individual health data from clinical records, real-time monitoring, molecular/diagnostic testing, i.e., multi-omics: genotype-phenotype association and variant characterizations, and exogenous factors such as lifestyle, social, cultural, and environmental determinants to discover and develop evidence-based stratified interventions, enabling disease prevention and improving health outcomes globally.

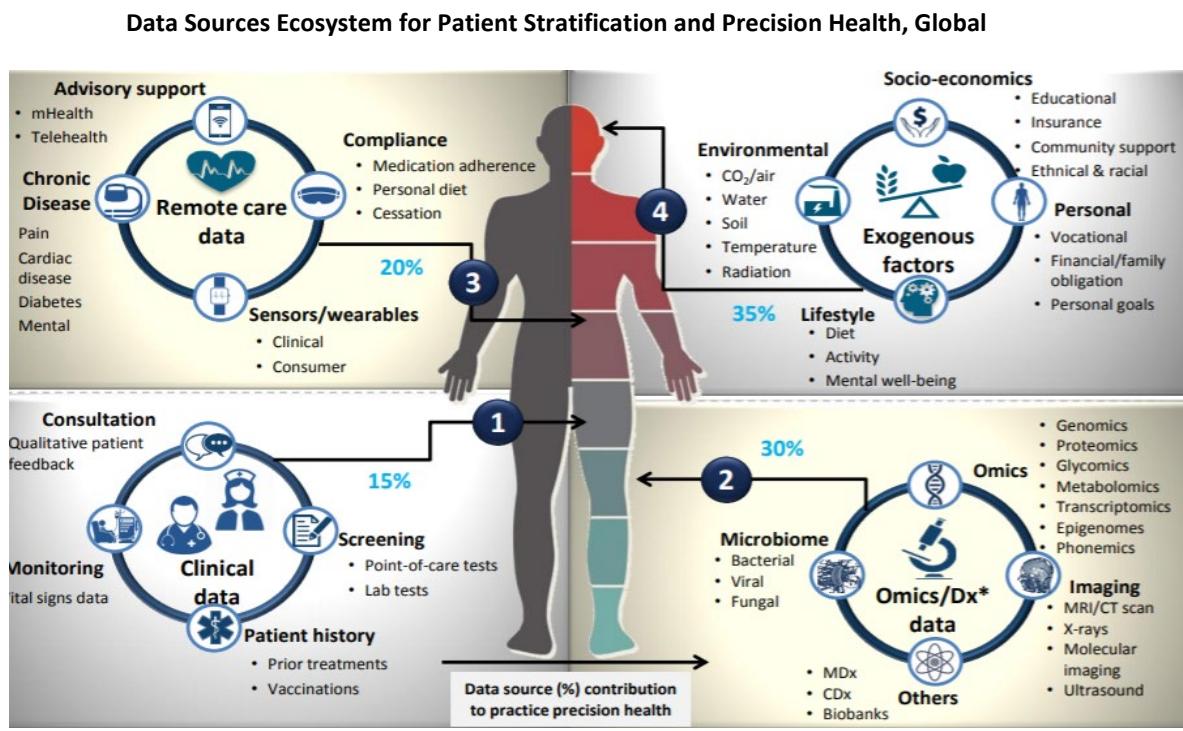
Precision health informatics is a critical ecosystem component. Similarly, advanced technologies, e.g., Big Data analytics, artificial intelligence, and cloud, are essential enablers to unlock its full potential. Nonetheless, most healthcare systems fail to implement preventative care, wellness practices, and evidence-based medicine, abating the paradigm shift.

Over the last decade, networks of interconnected healthcare stakeholders emerged, showcasing information technology's (IT) leading role in healthcare's value-driven transformation. Despite continuous developments, digital health stands as a complex technology-based environment with multiple data sources and IT systems. Healthcare data's size (both structured and unstructured) and complexity are growing exponentially. At an astronomical 2,314 exabytes by 2020,¹ volume, velocity, and variety, the 3Vs of Big Data, will soon reach zettabyte and yottabyte levels.

¹ <https://www.cio.com/article/2860072/healthcare/how-cios-can-prepare-for-healthcare-data-tsunami.html>

The healthcare industry creates more than 2 exabytes of medical data per day,² from multi-omics datasets to patient-specific information from electronic health/medical records (EHR/EMR), wearables, mobile applications (apps), smart devices, and patient-generated health data.

The lack of technology infrastructure is the biggest adoption hurdle. While essential for precision health breakthroughs, Big Data's clinical value remains obscured under the vast amounts of disparate datasets. Existing offerings mainly involve niche products and proprietary software, with most approaches delivering single-point solutions leading to information silos. Thus, current options offer suboptimal evidence-based decision-making frameworks, limited in content and context, thus falling short of PM's overarching goal.



Precision health requires an interoperable IT ecosystem, with advanced analytics solutions collecting holistic information from the underlying sources across the care continuum and normalizing evidence at the patient, provider, and payer levels. The United States (US), one of three precision health-ready countries globally, established a precision health-specific healthcare system and governance to improve access and awareness, thus driving adoption.³ The global precision health informatics service market crossed the \$5 billion mark at the end of 2020, with the US offering the most significant regional opportunity. Vendors must enable data flow from various digital approaches and solutions to create a productive Big Data environment and pave the way to transform the healthcare landscape effectively.

² Global Healthcare Cloud Computing Market, Forecast to 2023 (Frost & Sullivan, Jan 2020).

³ National eHealth Initiatives Advancing Global Precision Medicine Market, 2018–2025 (Frost & Sullivan, Jul 2020)

LifeOmic: A Trailblazer's Path

LifeOmic is a cloud technology software company offering novel precision health and wellness software-as-a-service (SaaS) solutions to patients, healthcare providers (HCPs), employers, health plans, and biopharma.

The company's product portfolio includes the Precision Health Cloud (PHC), the foundational cloud platform with solutions for precision oncology, medical research, remote patient monitoring, patient-reported outcomes, and cardiovascular treatments; Lifeology, a health literacy platform; SkillSpring, an all-in-one platform integrating video hosting, appointment scheduling, billing, directory management and expert ratings; LIFE mobile apps; Precision Wellness, a corporate wellness offering with precision health components; and PrecisionOCR.

"We [LifeOmic] have to address the entire care continuum. Precision health empowers better diagnosis and disease treatment using today's data and advanced technologies. We cannot afford point solutions for a single-use case anymore. Our goal is to build a company that leads the charge in healthcare's transformation over the next several years."

- **Ryan Hilliard, VP of Marketing, LifeOmic**

LifeOmic refined its holistic approach to health, building continuously on its cloud-native infrastructure, the PHC platform. Unlike most competitors' vertical point solutions, its broad approach to the market uniquely integrates data from disparate IT and clinical systems, e.g., genomics, laboratory, EMR, imaging, wearables, and population data, with patient engagement tools to advance personalized medicine. The PHC accounts for more than 90% of its revenues, with HCPs and affiliated academic/medical institutions as the main end-users.

In parallel, the company focused on the direct-to-consumer (DTC) business sector. Its first three years sharpened its expertise in mobile technologies, optimizing user acquisition and engagement. The LIFE Apps, a science-backed health content site, empowers users to improve their health and wellbeing through active involvement. The site has over 250,000 visitors per month; the mobile apps currently boast over 4 million users worldwide, including 1 out of 115 adults in the US.⁴

With the foundational platform in place, LifeOmic has assembled a variety of point, SaaS and platform as a service (PaaS), solutions to address different facets of the healthcare continuum. These span disease management and treatment, patient monitoring, corporate wellness, individual wellness, and health education, among others.

PHC: A Precision Health Disruptor

PHC is an all-in-one cloud-based, machine learning (ML)-enabled platform offering HCPs novel, tailored solutions and intelligent clinical decision supporting tools spanning the care continuum, from disease prevention to management. The open application programming interface platform facilitates data interoperability and seamless connectivity and, thus, fosters informational flow across its healthcare ecosystem.

⁴ Frost & Sullivan Briefing

Purpose-built by LifeOmic, the PHC unlocks patient data and empowers precision health and wellness throughout the patient's journey. The company easily customizes the platform to fulfill customers' needs, fitting into their workflows and driving better patient outcomes.

As the US healthcare landscape shifts to outcome-based reimbursement models, the cloud-based platform offers the flexibility, agility, and configurability to support fluid, timely, physician-oriented, and patient-centric decision-making, delivering the necessary tools and technology infrastructure for those providers.

Revolutionizing the Landscape: One Project at a Time

LifeOmic typically utilizes the use-case model, e.g., oncology, cardiology, and electrophysiology applications, identifying potential opportunities for additional use cases within the enterprise. Its cloud-based SaaS business model enables it to start with a single project, subsequently growing its customer engagements. The company follows up with institutional contacts, e.g., HCPs and researchers, to understand further needs upon initial success within the organization. With IT being a central hub, it then reaches out to the Chief Information Officer (CIO) and Chief Medical Information Officer (CMIO), typically the decision-maker and, thus, heavily involved in the purchase process at large healthcare institutions. The company seeks to advance other organizational initiatives, e.g., electrophysiology or cardiology uses, with an internal champion network backing additional subscriptions in front of the CIO/CMIO. LifeOmic moves forward with those expansion opportunities repeatedly.

Customer-centric Solutions, Enterprise-wide Alignment

LifeOmic focuses on an initial use case, e.g., oncology, in its first client interaction. The company starts by understanding the healthcare systems' initiatives and, subsequently, defining clear goals. It works closely with the healthcare system to get on board. The process usually involves ingesting data from sequencing vendors, e.g., FoundationOne, EMR systems, medical devices, labs directly from the lab vendor, legacy PDF files with lab results by applying optical character recognition technology, and other sources.

Once the data integration points are on the platform, LifeOmic uses the next-generation exchange framework, Fast Healthcare Interoperability Resources, to advance digital interoperability and support real-world data analyses. At this juncture, either the provider or the company configures visualization tools for clinical decision support.

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- Norma Vela-Roch, Best Practices Research Team Leader

LifeOmic uses ML for customer-specific built-in predictive modeling. The ML framework and established workflow allow novel algorithm development for web-based notebooks, particularly Jupyter Notebook, a standard data science tool. Also, it can productize the predictive algorithms and run them on the platform's data per customer needs. LifeOmic wraps its efforts around corporate initiatives. Once it gets the whole picture, the company goes through the healthcare system's contracting security review and

budgeting processes to deploy the pilot project. Ultimately, it often expands the targeted vertical solution at the organizational level, i.e., across the hospital network.

Implementation times vary depending on the organization, infrastructure, business model, and agility. Typically, deployment takes an average of 3 to 6 months, but it can be longer if the project involves various data integration points or new vendors. On the other hand, the company can deploy a solution within weeks if urgent (i.e., all hands on deck) and if the client is already a customer, since LifeOmic is already familiar with their enterprise data warehouse.

Road to Transformation

While primarily targeting the fast-growing US HCP market, LifeOmic has various ongoing projects across specialties, initiatives, and industries.

Customers include a large nutritional supplements company using the platform as a back-end service; biotech startups and healthcare systems leveraging the platform's bioinformatics and data aggregation analytics. Currently, one healthcare system seeks to build predictive models for a rare condition around chronic obstructive pulmonary disease. The company also has two projects in population health, WholeMe and the Lake Nona Life Project, with Florida-based AdventHealth, a large healthcare system.^{5,6}

COVID-19 Boost

While stalling a few deals, the coronavirus crisis spurred LifeOmic's Lifeology health literacy platform. Initially used in recruitment for clinical trials, the company adjusted the courses' flip card-type format, developing adult and children COVID awareness programs to combat the misinformation circling through various underserved communities, e.g., Hispanic, particularly at its beginning. Indeed, the company created content for the Hispanic community, for instance, in Spanish, disseminating the information through social channels. Similarly, LifeOmic crowdsourced volunteers to translate these courses to 12 different languages, leveraging social media and celebrities with a huge social following, e.g., Kristen Bell, to promote science-backed, up-to-date COVID-19 information among adults and kids.

"Covid-19 tested Lifeology's methodology. Is it useful for people? Is it easier to digest complex science information? It was a great test case to understand our [LifeOmic] Health Education and Literacy platform's efficacy in delivering content to patients while contributing to the community at large."

- Paige Jarreau, VP of Science Communications, LifeOmic

The pandemic pinpointed data silos as a huge handicap for a swift, adequate public health response, bringing US healthcare systems' burden and challenges to the forefront. In January 2020, Ed Simcox, Former Chief Technology Officer of the US Department of Health and Human Services, joined LifeOmic's leadership team. A strong proponent of data interoperability before the pandemic, the new Chief Strategy Officer, Mr. Simcox, uses his decades-long experience to promote data interoperability, championing PHC to effectively modernize health in the US.

⁵ <https://www.adventhealth.com/hospital/adventhealth-orlando/genomics-and-personalized-health/>

⁶ <http://www.liveworkparticipate.com>

Lead from the Front

LifeOmic invests heavily in building its PHC platform and expanding its products to support healthcare's transformation. Still early in its evolution, it allocates about 80% of its revenues to research and development and science, unlike traditional software companies. It strategically positions itself as a precision health software vendor, leveraging its technology-first platform approach and built-in broad product portfolio to empower proactive, personalized care.

LifeOmic steadily grows its DTC product portfolio and user base while demonstrating its tools' efficacy. The company has proven efficacies in weight loss, an easy blunt force metric, to tackle obesity, the underlying cause of many severe and debilitating health conditions, including diabetes, heart disease, and some cancers.

LifeOmic projects cost-efficient DTC apps, and an engaged, growing user base will help establish its expertise from an overall market wellness perspective. It anticipates increased HCP adoption as its solutions prove impactful.

Additionally, the company applies the technologies healthcare systems use to drive positive health and economic outcomes into the payer-employer prevention and wellness sector. LifeOmic repackaged its PHC and DTC products to keep employees healthy and happy. It initially targeted small and medium-sized businesses (SMBs), quickly growing into larger organizations, many of them self-insured, by successfully increasing productivity and enhancing job satisfaction, thus, lowering healthcare costs and worker attrition. The company is currently in negotiations with various insurers to expand its reach beyond SMBs.

In June 2021, LifeOmic's PHC achieved Federal Risk and Authorization Management Program Ready, knowns as FedRAMP, status. This government-driven security standard allows it to work with US government agencies to implement its Precision Health Platform for Government (PHP-G). Today, the company has several opportunities with the federal government for PHP-G.

LifeOmic reports a 75% year-over-year growth (YoY) from 2019 to 2020, with an 81% YoY growth projection for 2021. Given the US's vast market opportunity, pioneering position, and growing product portfolio and customer base, the company anticipates a compound annual growth rate of 76% across its product lines in the next five years. It steadily paves its leadership position long-term by strengthening clinical utility, with HCPs as its primary growth engine.

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- Norma Vela-Roch, Best Practices Research Team Leader

Technology enablement goes beyond the US. With key industry certifications, e.g., Health Insurance Portability and Accountability Act (HIPAA), Health Information Trust Alliance (HITRUST) Common Security Framework (CSF®), and General Data Protection Regulation (GDPR), LifeOmic captures opportunities as they arise. As an approved solution by ORCHA, the largest provider of GDPR-compliant digital health libraries globally, it is currently in discussions with prospective customers in the United Kingdom.

Conclusion

Rising healthcare costs demand more cost-efficient, targeted healthcare utilization. While essential for precision health, Big Data's clinical value remains obscured under the vast amounts of disparate datasets. LifeOmic's machine learning (ML)-enabled Precision Health Cloud (PHC) platform offers novel tailored solutions for precision oncology, medical research, remote patient monitoring, patient-reported outcomes, and cardiovascular procedures alongside intelligent clinical decision supporting tools spanning disease prevention to diagnoses and treatment. With seamless data interoperability and connectivity, the company's ML-powered PHC and products foster holistic informational flow across the healthcare ecosystem, unlocking patient data and facilitating precision health and wellness throughout the patient's journey.

Furthermore, LifeOmic's software-as-a-service model and the cloud-based platform's security, flexibility, agility, and configurability deliver the necessary tools and technology infrastructure for all healthcare stakeholders, pushing the envelope of precision health.

For its strong overall performance, LifeOmic is recognized with Frost & Sullivan's 2021 North American Enabling Technology Leadership Award in the precision health informatics industry.

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

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

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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:

- Mega Trend (MT)
 - Business Model (B)
 - Technology (TE)
 - Industries (IN)
 - Customer (CU)
 - Geographies (GE)

