

Category

Best Incubator, Accelerator, Equity

Program/Fund Name

The Novartis Biome

Corporate Name

Novartis

Date Of Creation

2018-10-09

Indications (if applicable)

NA

Therapeutic Categories (if applicable)

NA

History of the development of the fund / Incubators

Pharma is science-centric, but not necessarily digitally native. As we enter a new era of healthcare delivery—one where tech stands to improve access, outcomes, equity, and costs—we need diverse innovators beyond the traditional universe of drug development.

That's the idea powering the Novartis Biome, which combines digital health companies, pharma, health delivery organizations, and other stakeholders into one innovation engine. Established in 2018 and sponsored by our current CEO, the Novartis Biome is an applied accelerator that breaks down the barriers common to external partnerships. With this collaborative model, ecosystem partners (including tech, finance, insurance, and non-profits of all sizes from nimble startups to growing scale-ups and big established players) have access to the infrastructure and insights they need to build problem-specific and scalable solutions. Just like our science, the Biome takes an evidence-based and hypothesis-driven approach to design, build and scale impactful health solutions with our partners.

Here's how it happens: When you're in the Biome, you're part of a network of resources and platforms that get Novartis' support across legal, regulatory, patient data privacy, market access (direct access to patients, physicians, and payers) and other functions which may otherwise be unfamiliar to entrepreneurs. With those operational and compliance lifts taken care of, you can get matched with a local health system anywhere in the world and invited to co-create tech that solves an unmet need.

It could be a medical device, like a simple test that diagnoses blood disorders among babies in Ghana. Or a mobile app that helps elderly people report symptoms of chronic eye disease and access appropriate treatment. Both are examples of innovators whose Biome experience led to life-changing effect.

Our model operates by:

- Connecting well-identified gaps across patient care or healthcare efficiency in local markets with tech innovators creating digital health solutions;
- Accelerating the development of these solutions through tools, expertise, opportunities, and partnerships to test, refine, and build prototypes that fit the market;
- Delivering completed solutions to the market through a co-creation model that engages with local healthcare systems for broad and rapid patient impact;
- Expanding solutions through a 'scale-by-design' approach that accounts for risk mitigation, end-user feedback, integration into clinical workflows, and compliance inputs in the early phase of solution development.

This model is different from others in the market. While some digital health efforts eye solutions first, retrofitting products to problems in a way that makes healthcare an afterthought, the Biome prioritizes unmet needs at the get-go such that health providers, payers, patients and innovators together account for systemic challenges during solution design and development. Building these insights in early makes the solution more meaningful and accessible while unlocking efficiencies in scale, and importantly creating an imperative to adoption by providers and patients.

Current Novartis Biome partners span the care continuum: Health tech startups looking to fully develop and implement their digital solutions; healthcare system players, such as national health systems; pharmacies; hospitals; and payers, who are looking to implement solutions to improve patient care and drive efficiencies; and major tech giants who provide data, computing power, and innovation experience to help bring our solutions to life.

The Biome aims to create a space where these diverse partners can work together without getting lost in the bureaucracy of partnership. After all, there's a power in collaboration. And when barriers get broken down, innovation prevails.

Focus

Length

There is not a 'one-size fits all' approach in the Novartis Biome, with timelines custom fit to each program and partner. Our focus is on impact and scale, and we recognize that every program and company is on a different trajectory based on the nature of the challenge they are solving. We work with our external innovators and the Novartis business teams to ensure that the program and partnerships make progress towards their specific objectives and continue to be rewarding to everyone involved. In some cases for a specific challenge, 9 out of 10 pilots will not move forward. What that does is make sure we don't waste resources and time, and we can help the partner learn why the product wasn't the right fit for that use case to be able to apply those learnings and try again.

Background

The foundations of the Novartis Biome were laid during more than a year of intense planning and hundreds of interviews with healthcare innovators, business teams within Novartis, and health systems to understand the root cause challenges of partnering. The program was developed in response to these insights.

Importantly, each program within the Novartis Biome starts with a well-articulated problem statement linked to a strategic priority and sponsored by an internal business team. In that way, the Novartis

Biome ensures value creation for both Novartis and our external health tech partners by bringing them relevant opportunities that will be supported for scale upon success of their test implementations.

A rigorous search is then conducted for health tech partners whose capabilities best fit the problem statement at hand. The search is supported by external intelligence platforms as well as local innovation accelerators in the various ecosystems in which the Novartis Biome operates. The Novartis Biome also sponsors open innovation challenges, including pitch competitions and demo days, to optimize the fit between our internal teams and selected portfolio companies (see video case study: Appendix 1)

Upon selection, a partner is surrounded with the resources needed to successfully work with Novartis to test, refine and scale their solution. These 'surround-sound' resources and critical innovation infrastructure range from onboarding/procurement support to legal/regulatory SME assistance, even extending to technical capability support from Novartis' strategic partners such as AWS and Microsoft. Additionally, we always aim to translate local implementations to a broader regional or global scale, providing international market expansion opportunities to our health tech partners.

How do you address your portfolio needs

Finance

The Novartis Biome is based on an open innovation model that does not seek compensation from its partners for its services (neither in equity, royalties nor direct fees). Our objective is to help health tech innovators succeed and expand by implementing their solutions in healthcare settings that positively change care for patients. In doing so, we are helping to fulfill and support Novartis' mission to discover new ways to improve and extend people's lives. Where there is a good fit, the Novartis Biome can support partners in obtaining capital solutions to accelerate their growth. As an example, we can introduce partner companies to our sister organization, dRX Capital, which makes venture investments in promising health tech startups.

Funding

The Novartis Biome does not make equity investments directly in companies. However, we can introduce companies to venture capital firms, including our sister organization, dRX Capital, which makes venture investments in promising health tech startups. Many companies that have partnered with us have been successful at raising funds to accelerate their growth. In just the three and a half years that we have been operating, companies participating in the Novartis Biome program have raised \$500M+ in capital.

Impact / metrics to measure success

Benchmark

The Novartis Biome believes in an evidence-based innovation process. Our key performance indicators (KPIs) are carefully selected with our partners to inform key hypotheses at each program phase. The Novartis Biome focuses on benchmarks that measure the potential of the solution to improve healthcare access, quality, and delivery.

To do this effectively and repeatedly, the Novartis Biome established an industry-first platform called the Evidence Lab. The Evidence Lab collaborates with hospitals and health systems to test digital health solutions in real-life contexts. This unique capability, available only through the Novartis Biome,

helps digital health innovators refine their solutions with customers and end-users before scaling by developing and measuring relevant KPIs. The data and information collected are then used to inform decision-making to best shape the solution or program for the biggest impact on patients and providers. Currently, we are collaborating with 12+ hospitals/health systems to implement this platform (see additional explainer materials: Appendix 2).

For example, the Evidence Lab platform helped Tilak Healthcare test their solution, Odysight, with 2500 patients and 800 ophthalmologists in France. Odysight was created to better support patients on their journey and connect them with their ophthalmologists to deliver overall better eye care. The market test generated critical data that indicated the potential for Tilak's solution to have a positive impact in supporting patients with chronic eye diseases. During this validation period, the patient support platform achieved engagement rates that rivaled well-known social media platforms like Facebook and Instagram. The solution also achieved a high net promoter score rating from ophthalmologists who used the solution with patients, indicating a fit into the existing flow of healthcare delivery. Based on this, Novartis ultimately decided to support expanding Tilak's solution internationally, helping launch it in markets like US, Spain, and Germany.

Why your model is innovative, and/or how it will improve the human condition?

The Novartis Biome surrounds partners with a network of resources and unique platforms to support their success.

The support begins with our flagship 'partner relationship management' platform called the Digital Brain. This tool tracks engagement with partners and helps internal Novartis teams connect with them to find opportunities to expand their solution into other use cases and markets. Recently, we opened this platform to external partners, allowing them to curate their profiles and facilitate connections directly with business teams at Novartis (See Appendix 3).

Through our Enablement Guild, we have recently developed a 30-day contracting process bespoke for innovators versus the 180-day average contracting period time before the Novartis Biome. We also offer a white glove service to support innovators as they navigate the necessary compliance checks to be approved as a partner (See Appendix 4).

The Novartis Biome provides complementary subject matter experts as needed to support health tech innovators in developing their solutions. These are in areas such as regulatory affairs and legal support, where Novartis has extensive and broad experience.

The Novartis Biome also helps channel unique capabilities and resources to our innovators through several larger strategic partnerships with companies like Amazon and Microsoft. Our innovators can access free cloud computing and technical development resources as needed.

As discussed above, we have established an industry-first platform called the Evidence Lab. The Evidence Lab collaborates with hospitals and health systems to test digital health solutions in real-life contexts. This real-life testing accelerates product-market fit and successful commercial deployment.

The Novartis Biome also plays the role of connector within Novartis, coordinating with other teams internally to support the scaling and international expansion of solutions to new healthcare system contexts. In this way, we have helped scale 10+ solutions across health systems, some internationally.

Please provide appropriate references (Examples / Case Study)

While the Novartis Biome program is bespoke to each of the startups and healthcare innovators involved, below we offer some examples of the amazing impact on healthcare we have been able to achieve together with our partners.

Hemex Health: Hemex Health was one of the inaugural companies participating in the Novartis Biome program. We supported Hemex Health by matching them with Novartis' Global Health initiative to improve access to medicines for Sickle Cell disease patients. Moreover, the Novartis Biome provided regulatory support to accelerate the approval of Hemex's point-of-care diagnostic (The Gazelle) in Ghana so that it could be incorporated into the launch of the initiative. The introduction of Hemex's solution was critical to effectively diagnosing patients. Together, Hemex and Novartis are saving lives that would have otherwise been lost due to lack of healthcare access. Given the success of the initial program, Novartis recently expanded its commitment to place Hemex's Gazelle diagnostic solution in more regions and countries in Sub-Saharan Africa. Based on this initial program, the Novartis Biome launched a hub in Sub-Saharan Africa last year to focus on democratizing access to digital innovation to support the journey towards greater health equity for that region. See Appendix 5: [link to video case study](#) and accompanying news articles for more context on the program and its impact.

Tilak Healthcare: The Novartis Biome engaged France-based Tilak Healthcare early in its startup journey. Together, we worked to measure the potential of their Odysight solution to transform healthcare access and quality for patients with degenerative eye diseases, most of whom are elderly and often lack an optimal care support structure. We conducted a market test—in coordination with our Ophthalmology business unit—to characterize the impact across 2,500+ patients and 800 ophthalmologists. The market test generated critical data that indicated the potential for Tilak's solution to have a positive impact in supporting patients with chronic eye diseases. During this validation period, the patient support platform achieved engagement rates that rivaled well-known social media platforms like Facebook and Instagram. The solution also achieved a high net promoter score rating from ophthalmologists who used the solution with patients, indicating a fit into the existing flow of healthcare delivery. Based on this validation data, Novartis ultimately decided to support expanding Tilak's solution internationally, and the Novartis Biome coordinated a multinational expansion effort to help launch it in markets like US, Spain, and Germany. See Appendix 5: [link to video case study](#) for more context on the program.

UK National Health Service (NHS): The Novartis Biome has increasingly focused on partnering with healthcare systems across the world to accelerate their innovation agendas to improve access and delivery to patients. Over the past three years, through the Health Hub accelerator (a subsidiary of the Novartis Biome UK), we have partnered with the NHS to define problem statements and select innovators to address these problems. In 2020, the Novartis Biome UK's Health Hub platform played a vital role in supporting the NHS's response to the emerging Covid-19 pandemic. See Appendix 5: [read more about the partnership with the NHS in the attached supplementary information](#).

Medable: Medable is a leading provider of decentralized clinical trial solutions and was recently valued at \$2.1 billion during its most recent round of fundraising. The Novartis Biome supported Medable to accelerate its onboarding into Novartis and navigate the third-party compliance checks required to be deployed into clinical trials. This acceleration led to Novartis being one of their first large pharma customers, supporting their pathway for subsequent growth and success. See Appendix 5: [link to video case study](#).

Biofourmis: Our Novartis Biome Singapore Hub engaged Biofourmis early in the company's lifecycle and supported pilot studies in combination with our heart failure medication Entresto. These studies helped to demonstrate the value of Biofourmis's platform, which was able to reduce re-hospitalizations of heart failure patients. This evidence prompted a much larger strategic partnership and expansion of the solution into the US. Recently, Biofourmis raised \$300 million and is valued at more than \$1 billion. See Appendix 5: link to quote from COO of Biofourmis on impact of the Novartis Biome on growth of company.