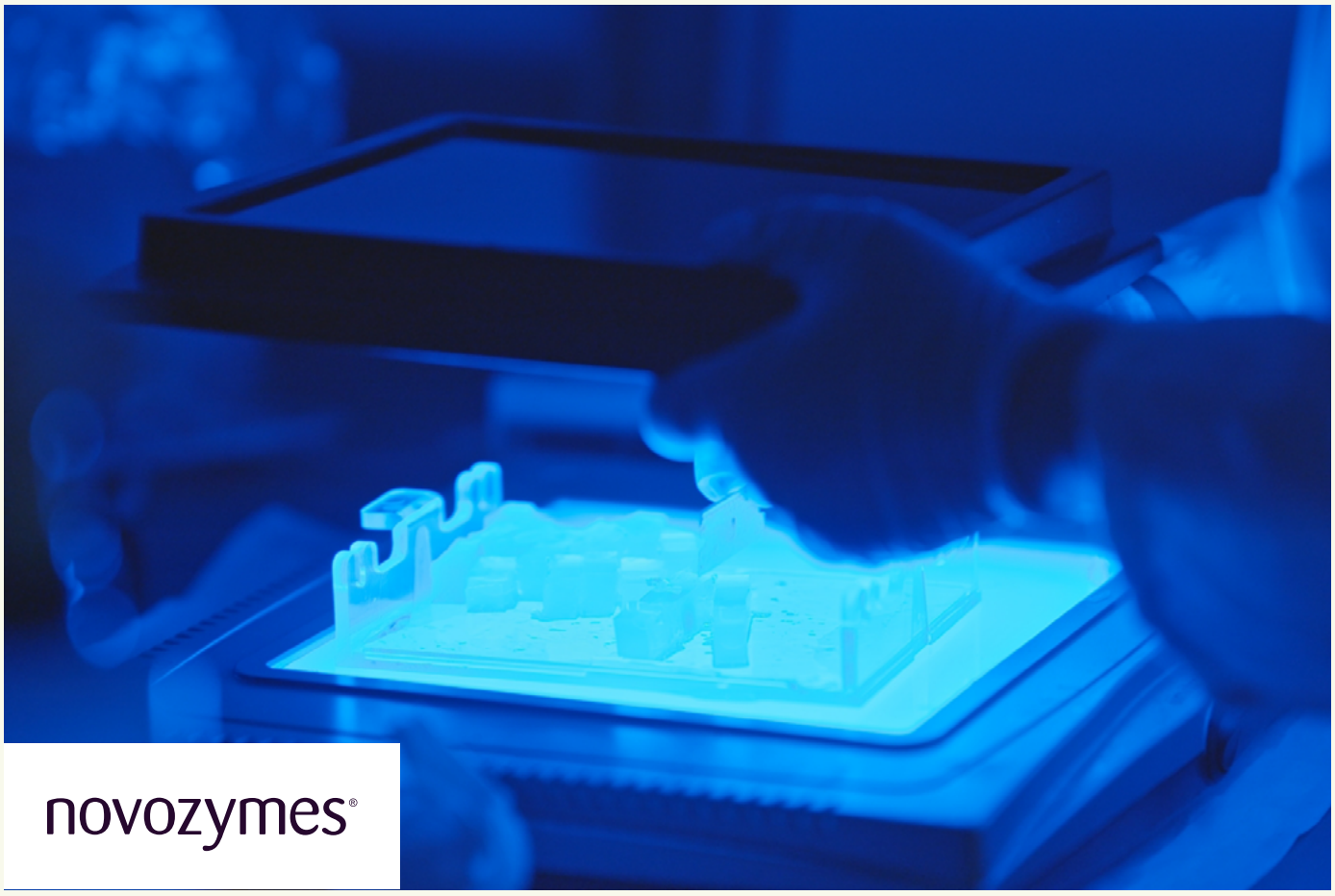
Case Study

Building more sustainable products to improve life for future generations

Novozymes



novozymes®

novozymes® + Benchling

Centralize Novozymes R&D teams on Benchling through a pilot program which, when fully rolled out, will allow 1,400 scientists to accelerate discovery and development of life-changing products

Novozymes is focused on harnessing the power of enzymes and microbes to solve some of the world's most pressing challenges. From increasing fuel sustainability to making crops more resilient, Novozymes is building products that will improve the lives of future generations.

With more than 700 products and 30% of sales coming from new solutions each year, the scale and speed of Novozymes' scientific innovation is truly unprecedented. Novozymes needed a technology partner that could not only keep up with its fast pace of innovation, but also accelerate it to bring more life-changing products to market, faster.

Company Profile

Number of Employees
6,000+

Industry
Industrial Biotech

Corporate HQ
Bagsværd, Denmark

↑ Data quality

Standardized data capture gives scientists consistent, accurate R&D data at scale and enables aggregation for machine learning models

↑ Access to insights

Scientists now have visibility and actionable insights at their fingertips, saving them time tracking and finding DNA parts for everything from day-to-day experimentation to preparation of IP filings

↑ Scientific productivity

Scientists save time with Benchling as their central source of truth – they no longer need to toggle between multiple systems to do their jobs

"As a scientist, Benchling will make it easier to document your research in a way that is understandable and replicable by others. This will benefit Novozymes in so many ways. Not only will Benchling make our scientists happier and more productive, but it will also enable them to tap into each other's contributions and thus, deliver new innovation to market faster."

Henrik M. Geertz-Hansen
Research Manager in Microbe
Data Science Department

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Challenges

Growing data volume required greater connectivity to ensure data quality

As the number of samples its strain engineering teams needed to run increased from hundreds to thousands, Novozymes needed to modernize its digital infrastructure to allow greater connectivity and scale. They needed a system to aggregate data and contextualize it, making it understandable by laboratory scientists and available to data scientists to run machine learning models.

Disparate solutions created information silos and hindered access to insights

Novozymes had many point solutions and regularly brought on new or custom software to address specific scientist needs. Over time, data about plasmids, strains, and assays were spread across multiple systems. Data scientists spent up to 90% of their time trying to reformat data to glean insights. Routine reports were hard to create and even harder to automate.

Disconnected systems slowed scientific productivity

Scientists had to hunt through Excel sheets, emails, and databases for past results, taking scientists away from science. On an average day, Novozymes scientists spend time navigating multiple systems to get their jobs done.

Outcomes

Flexible, FAIR data platform drives improved data quality

Modern API and data warehouse interfaces allow Novozymes to integrate Benchling to its existing data lake. Benchling will serve as Novozymes' central source of truth, following FAIR principles. Laboratory scientists can input and access data using Benchling's intuitive ELN, and data scientists can easily run machine learning models. Benchling for Lab Automation connects liquid handlers and custom applications, so the team can run assays on resulting strains in bulk and automatically link results to gain insights.

Faster access to insights means more efficient product development

Benchling's unified platform and robust data model makes it easy to connect every step of the strain engineering process from Design and Build (strain ID, genotype, etc.) back to the original DNA. That way scientists can save time on work, such as tracking genetic modifications and identifying unique combinations of DNA parts that could improve strain performance.

A scientifically-aware platform speeds scientific productivity and IP filings

No longer are scientists toggling between multiple systems to do their jobs. Now, Novozymes scientists use Benchling as their central source of truth. They can access insights for day-to-day experimentation or preparation of IP filings faster. In Benchling, scientists can click on any strain and see what's in it, where it's integrated, who made it, and where it's located in the lab. With Benchling, data becomes traceable and searchable across teams and programs, so once an enzyme or microbe has been discovered for one application, the results can be easily replicated by another team to apply it to different projects.

These results were based on the experiences of the Novozymes Strain Engineering team located in Davis, CA. They are not representative of the greater Novozymes team since the global rollout is still underway.