

Sanofi fully embraces AI and data science for patient breakthroughs

Sanofi advances its comprehensive digital transformation with the wide-scale implementation of Plai - an app developed with artificial intelligence (AI) platform company Aily Labs, which delivers real-time, reactive data interactions and gives an unprecedented 360° view across all Sanofi activities.



Source: [Pexels](#)

The app aggregates available company internal data across functions and harnesses the power of AI to provide timely insights and personalised “what if” scenarios to support thousands of Sanofi teams’ decision makers to take informed decisions in a simple and modern digital user experience.

Paul Hudson, chief executive officer of Sanofi, says, “Our ambition is to become the first pharma company powered by artificial intelligence at scale, giving our people tools and technologies that focus on insights and allow them to make better everyday decisions.

“The use of artificial intelligence and data science already support our teams’ efforts in areas such as accelerating drug discovery, enhanced clinical-trial design, and improving manufacturing and supply of medicines and vaccines.

“We have just scratched the surface as to how we embrace these disruptive technologies to achieve our ambition of transforming the practice of medicine.”

Plai is an essential enabler in the company-wide digital transformation and data-democratisation journey. AI-powered tools help Sanofi teams make better and faster data-driven decisions, hence boosting productivity across the value chain: from research to clinical operations to manufacturing and supply to business analysis:

- In the field of research, Sanofi has built multiple AI programs to slash research times through improved predictive modelling and to automate time-sink activities. As a result, AI enables research and development (R&D) teams to see and accelerate groundbreaking research processes from a matter of weeks to just hours and to improve potential target identification in therapeutic areas like immunology, oncology or neurology by 20 to 30%.
- AI also accelerates work on mRNA research. For an mRNA vaccine to reach its designated cells and produce disease-fighting proteins, it must be carried by a stable drug delivery system by means of a special particle, known as a lipid nanoparticle.

While Sanofi owns a large library of lipid nanoparticles, R&D teams now use AI to create digital models to predict the strongest selection of particles. It has increased the speed of the lipid nanoparticle prediction process from months to days.



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- In clinical operations, the increasing digitisation and leveraging of Plai's insights empower Sanofi teams to rethink how to run better clinical trials. For example, R&D teams can find and set up new, more convenient trial sites for their target groups, broadening opportunities for those from historically underrepresented communities to participate in clinical research.

With improved representation, Sanofi continues its work toward a future where all trials reflect the diversity of the people most affected by the diseases studied.

- In manufacturing and supply, Sanofi is digitising quality assessment processes, moving from paper to electronic batch records, leveraging digital data to improve asset utilisation and increase productivity by implementing new manufacturing 4.0 capabilities.

Sanofi has also developed an in-house AI-enabled yield optimisation solution which learns from past and current batch performance to enable consistently higher yield levels. This helps to optimise usage of raw materials, contributing to the company's environmental objectives, and supports improved cost efficiency.

Also, recent Plai adoption within Sanofi's biopharma supply chain has proven the ability to predict 80% of low inventory positions, allowing teams to take mitigating actions to secure supply, faster than ever before.

Next-level precision medicine

Moreover, Sanofi's pursuit of AI-driven innovations led to the acquisition of Amunix Pharmaceuticals in 2022. Amunix specialises in tailoring medicines using AI, ensuring activation exclusively within tumor tissues without causing harm to healthy cells.



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The same year, Sanofi joined forces in a collaboration with pioneering biotech Exscientia to explore new treatments for cancer and diseases linked to the immune system. Using Exscientia's AI-based capabilities and personalised medicine platform, Sanofi's scientists can test drug candidates against actual human tissue models, years before a clinical trial.

Also in 2022, Sanofi partnered with pharmaceutical companies Insilico Medicine and Atomwise to speed up medicine development using their AI-driven platforms. This comes on top of Sanofi's partnership with Owkin in 2021, which has an AI-driven platform that uses patient data from different medical centres to build models and predict patient responses to treatments.

Now in a significant stride towards its comprehensive digital transformation, Sanofi has embraced the extensive deployment of its app created in collaboration with AI platform company Aily Labs. The leap forward in the creation of Plai optimises resource utilisation, and facilitates informed decision-making at every level of the organisation.

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