

# The Human Genome Project

OvationData and Illumina collaborate to add value to the Human Genome Project

**Industry:** Biotech & life Sciences

## Challenge

Launched in 1990, the Human Genome Project was a 13-year, multi-billion-dollar global undertaking to generate the first sequence of all three billion letters of a human genome.

Founded in 1998, Illumina is an applied genomics technology company that develops high quality, innovative systems used in disease research, drug development, and development of molecular tests. Following completion of the Human Genome Project, Illumina applied next-generation sequencing (NGS) technology to greatly reduce the time needed to sequence DNA, resulting in the delivery of thousands of human genomes at a fraction of the cost during subsequent years.

- **Design and supply a system capable of handling three-billion letter gene sequences**
- **Deliver a high-performance solution to optimize the data analysis process**
- **Provide a highly scalable solution to address exponential data increase and performance requirements**
- **Reduce management overhead and costs due to unprecedented growth**

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## Solution

OvationData partnered with Illumina to deliver a solution capable of handling an enormous increase in requirements, powered by innovation in next-generation sequencing technology. The system had to offer ultra-high throughput, scalability and speed.

**Ultra-reliable  
turnkey solution**

**Decrease in total cost of  
ownership and  
management overhead**

**High-performance  
throughput to  
optimize analysis**

## The result

Today, technology pioneered by Illumina enables human whole-genome sequencing in less than 12 hours and for less than 500 dollars, a vast improvement over the 13 years and three billion dollars required 20 years ago. Thus, DNA studies are now far more attainable for many researchers, particularly those working on diseases, populations, and population diversities using large sample sets. This has brought unprecedented advances in diagnosis and development of new therapies.

**Ovation is proud to have assisted Illumina as part of this process.**

Unprecedented acceleration in sequencing technology

9,000-fold reduction in sequencing time scale

Huge advancements in research, diagnoses and therapies

6,000,000-fold reduction in sequencing costs

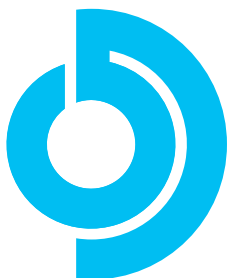
**2001:** The project's initial findings and first draft of the human genome sequence are announced.

**2003:** The Human Genome Project is completed and confirms humans have approximately 25,000 genes. The human genome is sequenced to 99.99 per cent accuracy, two years ahead of schedule.

**2007:** A new DNA sequencing technology is introduced that increases DNA sequencing output 70-fold in one year!

**2018:** The project is completed to sequence 100,000 genomes from patients affected by a rare disease or cancer.

**2020:** Following the pandemic outbreak of COVID-19, the genome of the SARS-CoV-2 virus is sequenced.



## Book a consultation

Find out how Ovation can help you transform your data assets from difficult problems to valued and usable resources.

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