

AI In Life Sciences - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The AI In Life Sciences Market size is estimated at USD 2.88 billion in 2024, and is expected to reach USD 8.88 billion by 2029, growing at a CAGR of 25.23% during the forecast period (2024-2029).

The COVID-19 outbreak has made profound and lasting impacts on the health and life sciences industry. The outbreak has caused life sciences organizations to adjust to supply chain and clinical development disruptions and financial challenges that would have previously been unthinkable. In the near term, healthcare organizations will accelerate innovation to respond to the crisis. These investments would enable healthcare organizations post-COVID-19 to rethink care delivery and financing, thereby stimulating the growth in the adoption of AI for the life sciences industry.

Key Highlights

- Further, the industry is witnessing a transformation owing to increasing cost pressure, a greater need for productivity, and disruption caused by new and innovative market players. An emerging area of artificial intelligence (AI), specifically the analysis of small systems-of-interest-specific datasets, can be utilized to improve drug development and personalized medicine.
- According to a study published in Science Translational Medicine, Quadratic Phenotypic Optimization Platform (QPOP), an AI platform, can substantially improve combination therapy in bortezomib-resistant multiple myeloma, which is used to identify the best drug combinations for individual multiple myeloma patients.
- Furthermore, complex diseases, such as cancer, often require effective drug combinations to make any significant therapeutic impact. As the drugs in these combination therapies become increasingly specific to molecular targets, designing effective drug combinations and choosing the right drug combination for the right patient becomes more difficult. With the high average development costs (around USD 2 billion for a newly approved treatment), low clinical trial drug success rate (below 12%), low return-on-investment (ROI) due to reduced healthcare expenditure, and focus on rare diseases, drug discovery is becoming more

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inefficient.

-Clinical trial research is extensive progress, which can be reduced with the help of AI in numerous ways. One is using advanced predictive analytics on a broad range of data to quickly identify candidates for clinical trials for target populations. Additionally, machine learning applications can make clinical trials more efficient by facilitating tasks such as calculating ideal sample sizes, facilitating patient recruitment, and using medical records to minimize data errors.

-Artificial Intelligence (AI) presents one of the most promising and potentially transformative opportunities for the life sciences industry. AI will be a key investment target in the coming years, with myriad organizations hoping to capitalize on its potential. The number of applications is expected to continue to increase, and investors are expected to enter the AI industry early.

AI in Life Sciences Market Trends

Increasing Use of Artificial Intelligence in Clinical Trials is Driving the Market

- Clinical trials are one of the most data-intensive tasks in the life sciences industry. They generate vast sets of data every day, monitoring several patient variables under observation. Subjecting these data sets to intelligent AI algorithms can help researchers screen meaningful correlations between loosely coupled data.

- This encourages many pharmaceutical companies and clinical research organizations to invest in technologies like artificial intelligence. In the current market scenario, the rapid adoption of AI is widely seen in the pharmaceutical sector, which is responsible for almost 50% of the clinical trials conducted globally every year.

- Furthermore, the increasing number of clinical trials worldwide produces colossal amounts of data available in the public domain. Over the forecast period, these numbers are expected to increase by at least 11%, creating new opportunities for AI in clinical trial applications, especially in Europe and North America.

- Such rapid growth in clinical trials and public availability of data is helping and encouraging many research institutes to prefer AI over traditional software solutions so that they can obtain specific results from data available in the public domain without having the entire trial procedure. Additionally, many countries, like China, the United States, and several European countries, are making clinical trial data available in the public domain supporting the growth of AI solutions globally.

The United States is Expected to Hold a Major Share in the Market

- The United States is the largest market for A.I. solutions in the life sciences market, owing to the high demand for A.I. solutions from almost all the life sciences applications in the United States. In addition, the significant presence of pharmaceutical companies and the global demand for U.S. pharmaceutical exports are increasingly motivating companies to invest in R&D activities.

- According to the Pharmaceutical Research and Manufacturers of America (PhRMA). Moreover, according to the report of PhRMA pending of the U.S. pharmaceutical industry for research and development, the percentage of total revenues in the previous year was 21.2%.

- PhRMA also revealed that, on average, most pharmaceutical companies in the country spent over 19% of their total revenues on R&D activities. Moreover, PhRMA R&D investments will reach a record high of USD 102.3 billion in 2021.

- Many pharmaceutical companies, such as Pfizer, Johnson & Johnson, and several clinical research organizations, are increasingly spending on A.I. solutions. According to ClinicalTrials.gov, it is projected that by 2024 Johnson & Johnson will have the most significant research and development spending among pharmaceutical companies. Also, companies, like Pfizer, despite collaborating with several A.I. vendors, are investing in updating their in-house A.I. operations to support their ongoing several drug discovery and patient monitoring processes.

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AI in Life Sciences Industry Overview

Artificial intelligence in the Life Sciences Market is highly competitive and consists of several major players. The market is moderately concentrated. The major players with prominent shares in the market are focusing on expanding their customer base across foreign countries. These companies are leveraging strategic collaborative initiatives to increase their market share and increase their profitability. The companies operating in the market are also acquiring start-ups working on artificial intelligence in life sciences technologies to strengthen their product capabilities.

In November 2022, XtalPi Inc. announced that the company is looking forward to a strategic partnership with CK Life Sciences. In order to enhance the discovery and design skills of tumor vaccines and speed up the creation of new vaccine kinds, this collaboration will take advantage of their individual expertise to establish a revolutionary AI tumor vaccine R&D platform. In June 2022, Amgen's R&D announced the partnership with The Scientist; this collaboration examines cutting-edge drug discovery and development methods that use artificial intelligence (AI) and machine learning to create brand-new protein therapies.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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