Artificial Intelligence (AI) In Pharmaceutical - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 115 pages | Mordor Intelligence

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Report description:

The Artificial Intelligence In Pharmaceutical Market size is estimated at USD 3.05 billion in 2024, and is expected to reach USD 18.06 billion by 2029, growing at a CAGR of 42.68% during the forecast period (2024-2029).

Key Highlights
-The COVID-19 pandemic had a significant impact on the adoption of artificial intelligence (AI) in the pharmaceutical market during its initial phase. Strict lockdowns and government regulations halted or postponed research and development (R&D) activities, with more focus on COVID-19 trials, affecting the adoption of AI in the pharmaceutical industry. However, as AI technology emerged as an essential non-medical intervention, it has gained lucrative demand for building next-generation epidemic preparedness and developing new drugs using AI.
-For example, an article published by IJMS in March 2022 reported that AI played a major role in COVID-19 De Novo drug design. Various AI methods, including structure-based AI methods for small molecules, ligand-based AI methods for small molecules, and AI methods for vaccine design, helped identify and design novel molecules during the pandemic. This trend is expected to have a positive impact on the market during the pandemic and is likely to continue over the coming years.
-Several factors are driving the growth of the AI pharmaceutical market over the forecast period. The increasing adoption of AI for clinical trials, a growing number of cross-industry collaborations and partnerships, and an increasing need to reduce drug discovery and development costs and timelines are major drivers. Many companies are leveraging AI to speed up the clinical trial process and reduce completion time. For instance, in February 2022, Hong Kong-based company Insilico Medicine completed a Phase 0 clinical study and entered a Phase I clinical trial with its anti-fibrotic drug candidate for a novel target discovered using the company's artificial intelligence platform Pharma.AI.
-The total time from target discovery program initiation to the start of Phase I took less than 30 months, representing a new level in therapeutic asset development speed for the pharmaceutical industry. In October 2021, Amazon Web Services Inc. (AWS) and

Israel Biotech Fund (IBF) launched the AION Labs in Israel, allowing drug developers to harness AI technologies and computational science to solve therapeutic challenges. Therefore, the adoption of AI as an asset to accelerate the drug discovery process is expected to increase in the future, driving the growth of the studied market over the forecast period.
-Despite the positive factors, the lack of skilled professionals and incompatible healthcare IT infrastructure in pharmaceutical research centers are expected to hinder the growth of the market over the forecast period.

Artificial Intelligence (AI) In Pharmaceutical Market Trends

Drug Discovery Segment is Expected to Witness Significant Growth in the Market Over the Forecast Period

- The drug discovery segment is expected to gain a significant market share over the forecast period, driven by the growing prevalence of chronic and rare diseases and an increase in research and development activities within the pharmaceutical sector. Artificial intelligence (AI) has emerged as a key technology in this space, accelerating the drug development process and leading to the creation of better medications that improve the lives of millions of people.
- Researchers and major pharmaceutical companies are focusing on the application of AI in drug discovery platforms, resulting in significant investments in this area. For example, in February 2022, Deargen Inc secured USD 17 million in a Series B financing round, which will be used to establish the iDear Center for AI-driven drug discovery and development, expand AI-powered new drug development platform (Dr.UG) applications, and accelerate overseas market entry.
- Similarly, in January 2022, Sanofi signed a license and research collaboration agreement with Exscientia to develop up to 15 novel small molecule candidates across oncology and immunology indications based on Exscientia's AI-based platform. Such developments undertaken by key players in the market are expected to drive the growth of the drug discovery segment over the forecast period.
- In addition, cross-industry collaborations and partnerships among market players are helping to create new AI-based platforms, thereby expanding drug development services in the pharmaceutical sector. For example, in September 2022, Novo Nordisk and Microsoft announced a new strategic collaboration to combine Microsoft's computational services, cloud, and AI with Novo Nordisk's drug discovery, development, and data science capabilities. This collaboration is expected to propel the growth of the drug discovery segment over the forecast period.
- Overall, the adoption of AI and new cross-industry collaborations are key factors driving the usage of AI in the drug discovery segment and are likely to propel the market over the forecast period.

North America is Expected to Have a Major Share in the Market Over the Forecast Period

- North America is expected to experience significant growth in the AI pharmaceutical market over the forecast period, driven by various factors. These include the rising adoption of AI in pharmaceutical clinical trials, an increasing number of drug discoveries and development, coupled with the growing prevalence of chronic diseases, and technological advancements in the pharmaceutical industry in the region.
- The presence of numerous market players and a growing number of cross-industry collaborations and partnerships are also majorly impacting the growth of the AI pharmaceutical market in North America.
- For instance, in March 2022, Insilico Medicine entered into a strategic collaboration with EQRx to combine their respective expertise in de novo small molecule design and clinical development and commercialization. Similarly, in December 2021, Amazon Web Services collaborated with Pfizer to develop innovative, cloud-based solutions that improve new medicines' development and testing in clinical trials. As major players continue to undertake continuous strategic activities, the market's growth in the region is expected to augment over the forecast period.

- The establishment of new AI centers in the region is another significant factor expected to drive the AI pharmaceutical market. For instance, Sanofi opened an Artificial Intelligence Centre of Excellence in Toronto in June 2022, focused on developing world-class data and AI products that accelerate research and development to improve access to life-saving medicine and create value for the health sector. The new AI centers in the region are expected to increase research and development activities in the pharmaceutical sector, thus boosting the market over the forecast period.
- In summary, the establishment of new AI centers and cross-industry collaborations are likely to increase the usage of AI in the pharmaceutical industry in North America and propel the market's growth over the forecast period.

Artificial Intelligence (AI) In Pharmaceutical Industry Overview

In the current pharmaceutical market, the use of artificial intelligence (AI) has become increasingly prevalent, with a number of global players focusing on differentiating themselves in a highly competitive space. Furthermore, there has been a recent influx of new entrants into the market who are rapidly gaining traction. Overall, it is expected that competitive rivalry within the industry will remain high throughout the forecast period.

Some of the major players in the AI pharmaceutical market include Alphabet Inc (Isomorphic Labs), Atomwise, Inc., BenevolentAI, Biosymetrics, Cloud Pharmaceuticals, Inc., Deep Genomics, Deargen Inc, Euretos, Exscientia, Insilico Medicine, Cyclica Inc, and InveniAI LLC.

Additional Benefits:

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

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