

Al to Accelerate Drug Discovery in the Lifesciences Industry

The number of collaborations between huge pharma companies and Al vendors for drug discovery went from 4 in 2015 to 27 in 2020 with an increase of 575%, in just 6 years.

Al, or artificial intelligence, is increasingly being used in the life science industry to accelerate drug discovery and development, improve clinical trials, and personalize patient care. By leveraging Al technologies, companies are able to analyze vast amounts of data and identify patterns and insights that were previously difficult or impossible to detect. This can lead to faster and more efficient drug development, more accurate diagnoses, and more effective treatment plans.

In drug discovery, AI is being used to help researchers identify new drug targets, predict the efficacy and safety of potential drug candidates, and optimize clinical trial design. By using machine learning algorithms to analyze large datasets, AI can help researchers identify patterns and relationships that may be missed by traditional methods.

In clinical trials, AI is being used to help improve patient recruitment, reduce trial timelines, and improve patient outcomes. AI-powered analytics tools can help identify potential study participants more quickly and accurately, and AI-powered predictive models can help identify patients who are most likely to benefit from a particular treatment.



Accelerating Drug Discovery Through Technology

The need for faster drug discovery is one of the major drivers of the AI in life science market. Traditional drug discovery and development is a time-consuming and expensive process that can take many years and cost billions of dollars. AI technology can accelerate this process by identifying potential drug candidates and predicting their efficacy and safety, allowing researchers to focus their efforts on the most promising leads. Several market players are collaborating with pharmaceutical and biotechnology firms to maximize the benefits of drug discovery AI tools which augments the growth of AI in the life science industry.

For instance, in October 2022, the clinical-stage AI drug discovery company, BenevolentAI, announced that it had expanded its collaboration with AstraZeneca, a biopharmaceutical company focused on research and development of new treatments. The goal of the partnership is to leverage BenevolentAI's proprietary AI-enabled drug discovery platform, the Benevolent Platform, with AstraZeneca's disease expertise to identify new therapeutic targets.

DISTRIBUTION OF R&D COMPANIES BY REGION 2021 VERSUS 2022

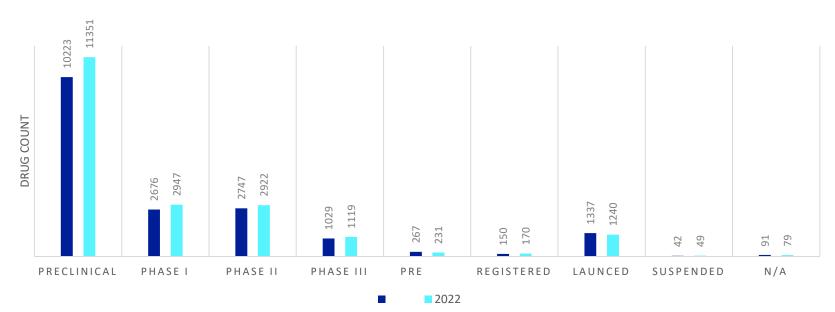


On the other hand, a cloud-based cognitive solution called IBM Watson for Drug Discovery is made to offer dynamic visualizations and ranked predictions that are supported by evidence at the passage level that is derived from a variety of public and private sources like medical journals, patents, and textbooks.



Al is Transforming the Life Sciences Industry by Enabling Next-generation Clinical Trials.

PIPELINE BY DEVELOPMENT PHASE, 2021 VERSUS 2022



Sr. No.	Company	Number	Number
1	Novartis	213	129
2	Roche	200	120
3	Takeda	184	68
4	Bristol Mayer Squibb	168	98
5	Pfizer	168	101
6	AstraZeneca	161	89
7	Merck & Co	158	77
8	Johnson& Johnson	157	86
9	Sanofi	151	87
10	Eli Lilly	142	76
11	GSK	131	67
12	Abbvie	121	44
13	Boehringer Ingelhelium	108	79
14	Bayer	105	76
15	Otsuka Holdings	93	46
16	Jiangsu Hengrui Pharmaceuticals	89	80
17	Amgen	83	64
18	Eisai	80	41
19	Astellas Pharma	75	43
20	Daiichi Sankyo	75	40
21	Gilead Sciences	72	45
22	Regeneron	68	41
23	Shanghai Fusion Pharmaceutical	68	48
24	Biogen	66	19
25	Sumitomo Dainippo Pharma	66	47

Al is Transforming the Life Sciences Industry by Enabling Next-generation Clinical Trials.

Al is transforming the life sciences industry by enabling next-generation clinical trials. Al technologies are being used to analyze vast amounts of data from various sources, including electronic health records, genomics, wearables, and clinical trial data. By combining these data sources and analyzing them using advanced machine learning algorithms, Al can help identify patient populations, predict patient responses to treatment, and optimize clinical trial designs. In addition, the overall increase in clinical trials leading to increasing demand for Al tools is projected to bolster the growth of Al in the life science market.

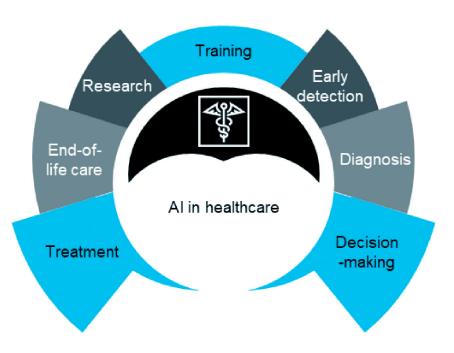


WHO has proposed six principles to maximize opportunities and minimize risks in the domain of healthcare AI:

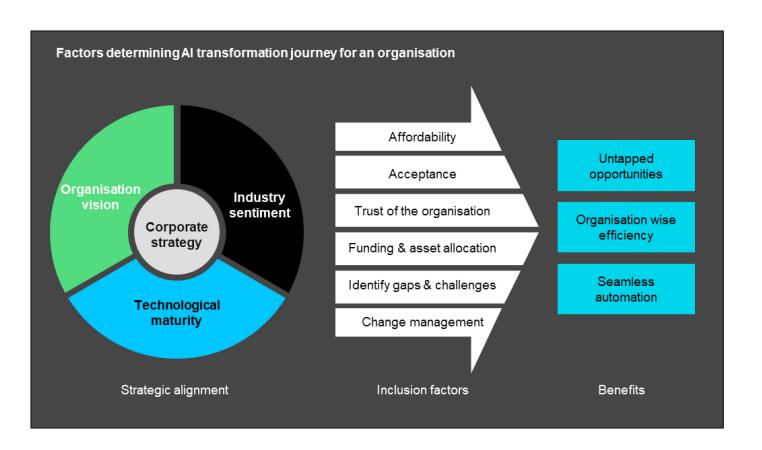
Securing the human autonomy	Ensuring equity and inclusiveness
Fostering accountability and responsibility	Promoting safety and well-being in public interest
Promoting sustainable and responsive Al	Promoting Intelligibility explain ability and transparency













Loss of employment and inadequate skill	Data protection and privacy
Data management	Policies and regulations
Low intensity of Al research	Pricing model



Thank you

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