

AI injects a growth opportunity for pharmaceuticals industry

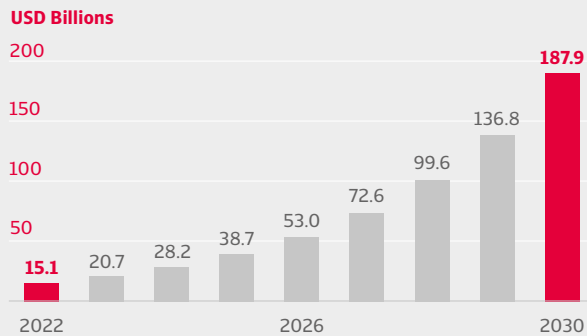
From virtual assistants such as Siri and Alexa to navigation apps that plot journeys based on real time traffic data, AI (Artificial Intelligence) is part of most of our everyday lives. But what about the pharmaceuticals industry? Is AI widely used, or are there opportunities waiting to be capitalised on? What are the physical, legal and ethical implications of the use of AI in healthcare? We asked our Pharmaceuticals Sector Experts for their insights and opinions on how AI is and will impact the industry.

By its very nature, the pharmaceuticals industry is disruptive. It invests heavily in R&D and works every day at the cutting edge of science and innovation. In this context, it is perhaps surprising that the industry has been a fairly slow adopter of AI technologies. To date the most common applications are found mainly in monitoring and medical imaging. This is due to a range of reasons but are most commonly thought to include the regulatory burdens of securing authorisation from legislative bodies, as well as concerns over safety and the risks posed to health by the use of inaccurate data.

However, things are now changing. Today Big Data and AI present a significant growth opportunity for the entire industry and the potential to drive efficiency in R&D. It is estimated that pharmaceutical companies spend on average 25% of their revenues on R&D. It can take more than a decade to bring a drug to market, often with a failure rate of 90% during the clinical trial period. However, AI has been successful in reducing the time it takes to commercialise a drug, while also cutting down the failure rate. It is not just about speed. AI and machine learning also offer the potential to devise more tailored and personalised approaches to treatment.

AI with major growth potential in the healthcare sector

The global artificial intelligence in healthcare market size was estimated at USD 15.1 billion in 2022, and is expected to amount to more than USD 185 billion by 2030, growing at a compound annual growth rate (CAGR) of 37%.



Source: Precedence Research.

According to research by Morgan Stanley, the pharma sector could spend about USD 50 billion a year on AI to speed up drug development within the next decade. The time it takes novel drugs to move from inception to market presents one of the industry's greatest risks. With the prospect of significantly reducing this, AI and Big Data promise (if successful) to revolutionise the industry. In addition to the potential for growth in profits for the industry players, this could also deliver new and innovative therapies and health solutions for patients in a way that is faster and better than ever before.

“

We will see more shuffling of the industry in China moving forward. External investors will play an important role as well as the entrance of new players that have traditionally not worked in pharmaceuticals in the past.

”

Judy Ji

Is there increased use of AI in the pharmaceuticals industry?

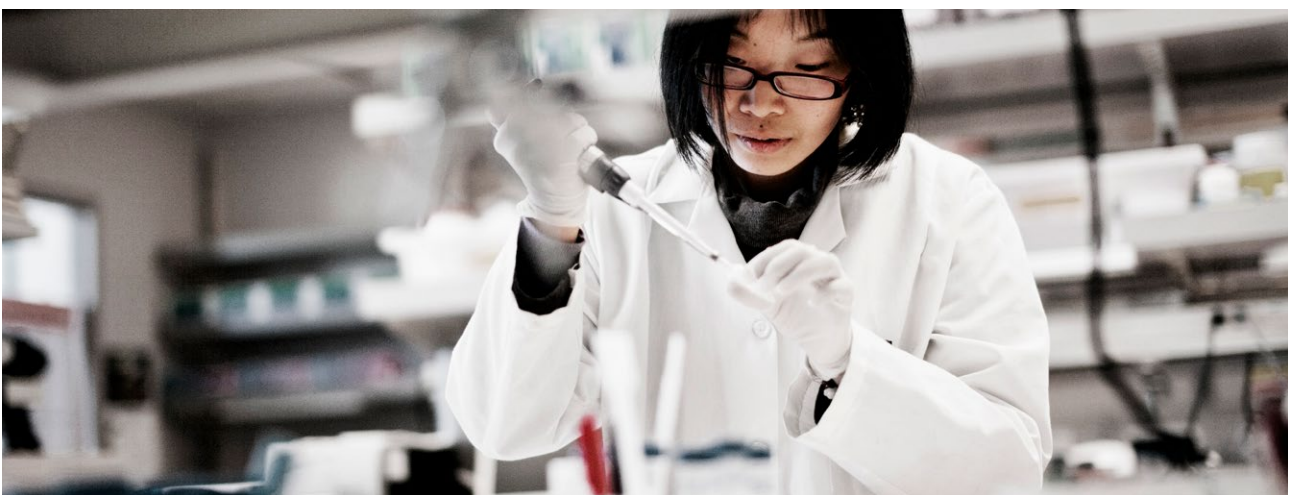
There are signs that the use of AI in pharmaceuticals is gaining momentum. In China, for example, there were nearly 80 pharma start-ups by the end of 2022. Investment in the industry as a whole hit a bump in the road due to the economic slowdown caused by the zero-Covid control policies. Atradius Pharmaceuticals Expert for the Asia-Pacific, Judy Ji noted: “In 2022 investment in China's pharma industry was CNY 179.83 billion (USD 25 billion), down from CNY 329.25 billion (USD 46 billion) in 2021. However, following the re-opening of trade across China, growth is expected in 2023.”

How common are collaborations between pharma and tech companies?

The current trend, particularly in the west, is for collaborations or partnerships between pharma businesses and companies specialising in AI or Big Data. In Europe and the US it is increasingly common to see partnerships between traditional pharmaceutical companies, AI-powered healthcare companies and technology leaders. Patrick Scardina, Atradius Pharmaceuticals Expert for the Americas said: “In recent years the US-based Amazon Web Services (AWS), Pfizer, Merck have partnered with European AstraZeneca and Israeli Teva Pharmaceuticals, announcing the launch of AION Labs in 2021 to produce AI and computational ventures and develop new pharmaceutical therapies. AWS also recently announced a USD 100 million initiative, called the AWS Generative AI Innovation Center to accelerate enterprise generation AI adoption.”

That said, some top pharmaceutical companies are electing to hire their own in-house AI teams to create the data systems and help keep the proprietary data machines out of the hands of competitors.

Of course, Amazon is a giant with a track-record in the adoption of AI technologies for its consumer-orientated activities. But this is a space increasingly populated by start-ups and smaller businesses. The start-up, ChatGPT, which developed a natural language processing tool driven by AI recently raised USD 175 million to help transform healthcare and science. The tool is so robust that it can reportedly pass the United States Medical Licensing Exam according to researchers from Massachusetts General Hospital and Ansible Health. In fact, Ansible Health is itself a healthcare start-up that provides tech-enhanced home-based healthcare services for patients with COPD.





“
If pharmaceutical and healthcare companies do not invest in AI, they will face an uphill challenge in keeping investors motivated and bringing drugs to market.
”

Patrick Scardina

Could AI be used to create new competition in the pharma industry?

AI is already creating new and increasing competition for the traditional players in the pharma industry. Wearable devices monitoring everything from blood glucose levels to heart rate are already available. Much of these are from manufacturers and vendors that are new to the pharma industry, including retail and tech giants such as Google and Amazon.

AI is only one area where non-pharma businesses are increasingly entering the industry. Real estate developers are building hospitals, home appliance manufacturers are producing medical equipment and internet giants from Alibaba and Tencent to Amazon are increasingly selling medicines. Telecom companies are offering or supporting telemedicine and even health insurance (finance) companies are offering preventative healthcare options for their customers.

Are there regulatory hurdles ahead?

Most jurisdictions do impose restrictions and regulations in the use of AI in healthcare applications and development. That said, like the technology itself, this is an area that is continuously developing. Last year, China removed previous restrictions on AI-assisted diagnostic technology,

enabling the tech to be used more widely beyond a hospital setting. However, according to Judy Ji: “Restrictions on AI-assisted treatment technology have been retained in China, indicating uncertainties and high risk in the field of AI-assisted treatment, which the authorities believe still needs supervision.”

In March 2023, the U.S. Federal Drug Administration (FDA) proposed draft guidance proposing a science-based approach that aims to increase patients’ access to safe and effective AI/MI-enabled devices. Patrick Scardina said: “This will allow the regulatory process to be more adaptive given the rapid evolution of new data.”

Rubén del Río Hernández, Atradius Pharmaceuticals Expert for Europe pointed out that EU authorities already control the use of AI in most applications, including pharmaceuticals. He said: “EU concerns are based on privacy issues in AI training (inputs), and biases in AI decisions or suggestions (outputs).” He also noted differences between jurisdictions. For example, UK authorities appear fairly relaxed about the development, use and implementation of AI, whereas Swiss authorities are apparently waiting on final decisions by the EU and other international organisations before implementing a framework. He added: “I estimate the Swiss AI framework will be halfway between the EU’s and UK’s.”

What are the risks posed by the increased use of AI in pharmaceuticals?

Investing in new technology can be very expensive in the initial stages, which will pose a challenge to many businesses. Patrick Scardina said: “The most recent collaborations in the AI space in the US have been in the ‘nine-figure’ range. What’s more, the price tags are only becoming more expensive, thereby essentially taking smaller firms out of the mix for material AI investments unless they have strong investor backing.”

He also warned: “The success of AI is slowing down the timeline for the next fundraising round so investors are motivated to require AI capabilities before infusing capital. As a result, smaller pharma companies without AI will have a harder time finding capital resources and will lead to bankruptcy events or the wind-down of operations.”

“*Small companies face a clear disadvantage in AI and Big Data implementation, because getting a large enough amount of quality data can often be beyond their budgets or knowledge.*”

”

Rubén del Río Hernández

Although smaller businesses may lack the deeper pockets of large organisations, they can be agile. In China, Judy Ji said: “AI may force smaller businesses out in the long run, but not in the short term as AI is still in its early stages of application in the pharma industry.” She added: “Smaller businesses can still work in their traditional fields.”

Looking at the industry in Europe, Rubén del Río Hernández is more cautious in his outlook and suggests mergers and acquisitions may be on the horizon. He said: “Companies that haven’t enough resources to fully embrace AI, but still have good business potential, are likely to be acquired by a major pharmaceutical company. Those with low potential



could be driven out of the market. The entrance of players from outside the sector, particularly the tech giants and disruptive start-ups, also presents additional competition, risks and challenges to the industry. Healthcare is an attractive sector for new entrants to get into because, as a universal and a recurrent human need, it represents a sustainable market. We all want to live better and for longer, and we will all need several treatments and medicines throughout our lives.”

Non-pharma businesses that are increasingly exploring the sector include food corporations, beauty and cosmetics producers (for health and wellness), telecom companies (telemedicine) and financial institutions (including those, which have started offering health insurance, along with schemes offering preventative healthcare such as gym membership).

These non-pharmaceutical companies are especially focused on healthcare, so for the time being they are not serious competitors for pharmaceutical companies. However, some of those corporations have large amounts of cash, so they will be able to acquire pure pharmaceutical or biotech companies (up to medium sizes). This creates an interesting synergy between technology and drug development, which could be an important competitive factor that major pharmaceutical companies should be alert to.

Our Trade Sector Experts



The Americas: Patrick Scardina, Atradius’ Manager, Regional Underwriting in Irvine, California, USA



Asia Pacific: Judy Ji, Atradius Senior Underwriter in Shanghai, China



Europe: Rubén del Río Hernández, Team Leader Large Buyer Unit at Atradius, Madrid, Spain



Connect with Atradius on social media
[youtube.com/user/atradiusgroup](https://www.youtube.com/user/atradiusgroup)
[linkedin.com/company/atradius](https://www.linkedin.com/company/atradius)
twitter.com/atradius

Atradius
David Ricardostraat 1
1066 JS Amsterdam
P.O. box 8982
1006 JD Amsterdam
The Netherlands
Phone: +31 (0)20 - 553 91 11

info@atradius.com
www.atradius.com