

## Optimizing AI in the Pharma Industry

*(Source: An article by Victoria Rees for European Pharmaceutical Review)*

Artificial intelligence (AI) has wide-reaching potential within the pharmaceutical industry, from clinical trials to marketing and sales analytics. Machine learning programs can reduce the time spent on examining data, saving money and allowing researchers to focus on other important issues.

AI allows researchers to collect and analyze data effectively. It operates under the basic principle that the more data it analyzes, the more it will improve. Over time, models will continue to collect better data due to the accumulation of information.

However, this creates a significant challenge for data scientists when working with small amounts of information. As these researchers usually have a limited amount of time, they cannot take advantage of an optimum amount of data to fully develop their models. Using third-party data provides a solution, allowing scientists to pool information for their AI systems.

One use of AI is rooted in its ability to predict which R&D projects will prove successful and move on to clinical trials. Pharma companies are keenly interested in this aspect, as it can save time and money during the development stage. However, this is not the only advantage that AI can lend to pharmaceutical companies.

Another widely used area for AI is marketing, and has proved to be a useful tool to refine marketing decision-making and strategies. The amalgamation of print, digital, direct and other marketing activities can have a wide impact on the sales of a drug. Knowing which methods are most successful is useful for companies to ensure they explore the most profitable avenues. Using AI to chart a customer journey can allow a business to identify the direct marketing messages that they have been exposed to and which led to a purchase.

Sales and marketing have become “more scientific”; having AI analyze data from past campaigns allows companies to invest in the most lucrative schemes. This is most noticeable in the US, where pharma businesses are more focused on sales compared with the EU or other parts of the world. Analyzing which drugs patients are buying is an integral part of the US industry that AI can help improve.

One of the challenges of using AI in the pharmaceutical industry is the availability of resources and access. A potential solution to this is to simplify AI models so that users can input data without complications.

Another issue is the social and institutional understanding of AI. Due to the various ways in which AI can be modelled, it can be hard to explain how it works, making adoption even harder. Although a model can be mathematically proven, its reasonings can be difficult to articulate.

A growing trend is companies requesting the documentation and explanation for the decisions that AI makes, especially when they can affect an individual or private citizen. A handful of states in the US have laws that enforce this, and the EU is also

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## In Brief...

- ♦ **Walgreens Boots Alliance** and **McKesson Corporation** have signed an agreement to create a joint venture that will combine their respective pharmaceutical wholesale businesses in Germany, **Alliance Healthcare Deutschland** and **GEHE Pharma Handel**. WBA will have a 70% controlling interest in the joint venture and McKesson will have a 30% ownership interest. The new joint venture is expected to enhance the ability to compete and deliver high customer satisfaction through new services and operational excellence. WBA Co-chief operating officer, *Ornella Barra*, said “Combining our wholesale operations is the right decision to secure the long-term success of both businesses. This is a strategic step that will offer benefits for all. We are creating a sustainable company to drive success for our customers and the German healthcare system.”

- ♦ Pharmaceutical manufacturer **Amneal** has appointed *Jeff George, John Kiely* and *Shlomo Yanai* to its Board of Directors. Amneal chairman, *Paul Meister*, said “It is a testament to the opportunities ahead for Amneal that we have attracted leaders of Jeff, John and Shlomo’s caliber to our Board. They each have a deep knowledge of our industry, and we are confident they will help us capitalize on those opportunities.”

- ♦ **McKesson Corporation** has been selected by the **U.S. Department of Veteran Affairs** to continue as the prime

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## Tackling Pharmaceutical Challenges Through Technology and Collaboration

*(Source: An article by Inez Cornell for Technology Networks)*

Pharmaceutical companies are embracing a more collaborative way of working as part of a movement to tackle some of the challenges the industry is facing. Expiring patents and a tight regulatory environment are just some of the issues that will hopefully be resolved through forming partnerships across the industry, including those with competitors. Collaboration is likely to play an important role in the pharmaceutical industry for years to come because of new emerging trends.

The healthcare industry is not necessarily well-recognized for utilizing technology and staying ahead of digital trends. However, with procedures becoming increasingly more automated and digitized, care facilities, hospitals and other healthcare-related establishments need to adopt the latest technological advancements or risk being left behind.

There are also opportunities for more pharmaceutical and technology partnerships to develop products which will help realize the vision of delivering personalized medicine. Partnering with technology companies to enhance productivity through the use of automation is just one way the pharmaceutical sector can avoid wasting money on research into treatments that are ultimately not viable.

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## AI (cont.)...

considering similar legislation. While this is not a major concern, it is growing and could affect companies if regulations become stricter, requiring the logic behind AI to be better explained.

A byproduct of collecting such large amounts of information is that it needs to be protected. This can be achieved through secure encryption and transport and encryption at rest. Many companies are beginning to think of data as a raw material. The faster it is refined, the better quality. Therefore, the faster that information can be processed and stored securely, the less vulnerable it is to cyber-attacks.

Hackers want to obtain raw data as a means to identify individuals and their private information. Therefore, companies must protect this as soon as possible. Businesses seek trend and aggregate data summaries from their information, so the faster they can transfer data from a raw state, the faster it will be protected.

As AI usage continues to grow, the number of decisions delegated to machine learning will increase over time. As long as companies can overcome some of the restrictions or roadblocks, this will continue because there is “merit and value” to what it can provide to those companies.

Overall, healthcare is still “under-penetrated” by AI compared with other industries, mainly due to the conservative nature of the pharma industry. Despite this, smaller companies are more willing to take risks and invest in AI systems. Smaller or third-party business are more agile, whereas larger pharmaceutical companies are less willing to embrace change. So, although the growth of AI may be slow, it will continue steadily, with the number of companies utilizing AI within their business increasing in the future, especially if smaller companies prove its worth.

## Tackling Challenges (cont.)...

Software solutions have allowed for digitization of records including care plans, residents’ medical records, and staff employment and management records, leading to the optimization of operational and administrative processes in the UK care industry. Efficiency and productivity will continue to improve through partnership with relevant software companies, resulting in enhanced quality of care to patients.

As an example, the rise of conditions such as diabetes and Alzheimer’s disease, complicated by staff shortages, is putting a huge amount of pressure on the UK health system. Dementia and Alzheimer’s disease are the leading causes of death in Britain. The Prime Minister’s 2020 Challenge on Dementia lays out a series of plans to help tackle the crisis, including the ambitious aim to find a cure by 2025. However, finding treatments for brain diseases is incredibly complex and requires help from other industries with the ability to provide key insights.

Not long ago, pharma giants were nothing less than fierce competitors, but the need for a shift has been identified. This has fueled collaborations between pharma companies who are now more open to sharing important knowledge between experts. The UK has already won major Innovative Medicine Initiative grants to support multinational partnerships between pharma and academia, which is a step in the right direction.

There is a demand for more personalized health plans that are shaped around the patient’s individual needs, as well as access to new therapies that are better than anything currently available. Through collaborations between pharma organizations, healthcare

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pharmaceutical supplier for the agency. Under the new agreement, effective August 2020, McKesson will supply all VA medical centers and outpatient clinics, as well as the VA’s consolidated mail outpatient pharmacies. The initial two-year contract includes options for up to three two-year extensions.

- ♦ **Sanofi** (France) will move away from its three-year-old relationship with **Verily** and their virtual diabetes clinic, **Onduo**. This follows Sanofi’s decision to pull back from new diabetes research. The joint venture recently celebrated completion of its expansion across the continental U.S.

- ♦ China has added the largest ever list of new products to its list of subsidized drugs in a move that will see the cost of many of them more than halved. Seventy drugs were added to the national reimbursement list at the end of November, including cancer and anti-infection treatments. High drug prices, especially cancer drugs have been a persistent problem for many years in China.

- ♦ Pharma manufacturer **Novartis** will use **Amazon’s** cloud computing expertise to improve the company’s manufacturing, supply chain and delivery operations by making them more efficient and real-time. The multiyear collaboration with **Amazon Web Services (AWS)** will build an enterprise-wide, global data and analytics platform designed to form the foundation for customer cloud-based solutions that enhance agility and cost-efficiencies across business processes and systems.

- ♦ **United Parcel Service (UPS)** will add major upgrades to its healthcare-dedicated warehouse and distribution network, including the addition of 1.3 million square feet of total distribution space in key U.S. markets. The company also received the European Union’s *Good Distribution Practice (GDP)* compliance certification for its healthcare operations in France and Germany. UPS said its total U.S. healthcare warehouse and distribution space will total four million square feet by 2020.

*(Sources: Business Wire, Company Press Releases, Drug Store News, FierceBiotech, Scrip, and South China Morning Post)*

providers and patients, a more streamlined focus on the outcomes that matter to patients is possible. According to research, 84% of senior decision makers in the field of clinical development agree that pharmaceutical companies must incorporate the patient voice more effectively.

Collaboration is a necessity that is expected to become common. Despite providing rewards such as the ability to align decisions with patients’ wants, needs, and preferences, patient-centric care can also provide challenges for the pharmaceutical industry. The main challenge for 2020 will be focused around the potential of the direct consumer becoming the pharmaceutical company’s most strategic partner. This will involve determining how to leverage the power of health technology, and how to shift focus from partnerships within the medical community to partnerships directly with the consumer.

The next few years will prove to be crucial for the pharmaceutical industry for many reasons, in particular, to foster a relationship with the public, and establish relevant and valuable collaborations with other industries.