Artificial Intelligence – A new approach in pharmaceutical marketing

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REVIEW

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ABSTRACT

The simulation of human intelligence processes by machines, particularly computer systems, is known as artificial intelligence (AI). One of the most eagerly awaited digital healthcare innovations is AI. It's not about developing a mind with AI; it's about improving problem-solving tools. The importance and uses of AI in the pharmaceutical industry, as well as the function of AI in business development and pharmaceutical marketing, are discussed in this review paper. AI is used by over 33 pharmaceutical companies for various initiatives. AI has uses in Drug Discovery, Clinical Trials, AI-assisted robotic surgery, Analytical development, and finally, pharmaceutical marketing enhancement.

Key Words

Introduction

"The use of a computer to mimic intelligent behaviour with little human interaction" is how artificial intelligence is defined. Like the human brain, machines and computer programmes can learn and solve problems. Artificial intelligence (AI) is rapidly gaining traction in industries around the world, notably in the life sciences. A machine's ability to perform cognitive processes associated with human minds, such as sensing, thinking, learning, and problem solving, is commonly referred to as AI. AI also offers a set of tools for dealing with business issues. Executives in the life sciences industry say AI will enable them to gain previously unavailable insights and look at their data in new ways.

From smarter drug candidate identification and repurposing older products to faster clinical trial recruitment, improved clinician/patient education, and support to improve commercialization strategies from sales calls to patient adherence and providing ways to make faster, better-informed decisions along the path to market and beyond, AI is expected to positively disrupt many of pharma's business areas and processes.

Types of Artificial Intelligence

Type 1: Purely reactive

It is one of the most important and necessary types of AI. It directly detects its environment or circumstance and acts in response to what it sees. It doesn't have a concept of what the rest of the world is like. It is unable to construct memories or draw on previous experiences in order to influence current decisions. It just focuses on one thing.

Type 2: Limited memory

This type, which is higher on the AI evolutionary ladder, considers bits of past information and incorporates them into its pre-programmed world representations. It only has enough memory or experience to make sound decisions and carry them out.

Type 3: Theory of mind

Type 3 is capable of comprehending thoughts and emotions, which has an impact on human behaviour. This sort of AI, which can understand feelings, motives, intents, and expectations as well as interact socially, has yet to be developed, but it is expected to be the next generation of intelligent robots.

Type 4: Self-aware

These forms of AI are capable of forming self-representations. They are an extension of Type 3's "theory of mind," in that they are conscious of their own internal states. They can foresee others' feelings and generate inferences and abstractions. These are the machines of the future. They are extremely clever, sentient, and aware.

Role of AI in Pharma Marketing

Before the sales rep even meets a customer, AI can have an impact on pharmaceutical sales. AI has the ability to boost sales reps' efficiency throughout the sales process. Although AI may be used to speed up marketing content delivery and improve content monitoring, AI should play a larger role in aiding with messaging and content production in the long run[1].

At this point, there is no reason for pharma to be hesitant in adopting AI. AI is already being used in the consumer sector for marketing optimization, and healthcare communicators can follow suit. "Healthcare marketing may use AI right away to assist improve and adapt messaging versus target audiences in real time." AI can be utilised to increase content monitoring and speed up marketing material distribution, but in the long run, AI should play a bigger part in message and content production.

According to Ariel Katz, co-founder of H1, a live data insights firm, even while the industry collects billions of pieces of data on its own, corporations still need to employ third-party suppliers to get more data because even the largest organisations don't have all the datasets they require. These businesses require more data, a mechanism to make it useful, and the ability to obtain that data from outside sources. This necessitates the use of an AI platform to organise the data into some sort of algorithm.

AI can assist you find the proper indication to help you get to market faster, which is especially important since that many companies are focusing on technology platforms rather than small molecule-based businesses. There are algorithms that can be utilised to help speed the strategy component of getting medications to market faster when the appropriate judgments are made up front (Table 1).

Table 1: Use cases of AI in pharma companies.

Name of the Company	Purpose
Abbvie	Patient monitoring platform improved adherence.
Amgen	Learning in pharmaceutical discovery
Astellas	Drug repurposing and application management
Bayer	Drug design and pharmacovigilance, to develop treatments for cardiovascular diseases
Eli lilly	Drug discovery operations
Gilead	Drug discovery operations
Genentech	Validation of potential cancer drug targets
GSK	Design of noval small molecule drugs with cloud pharmaceuticals[2]
Novartis	Personalising oncology treatment and digital transformation in drug discovery[3]. High content screening

Use of Artificial Intelligence in Pharma Marketing

Value pricing

By combining data from Government regulations and reimbursement, hospital revenue models (Pay for Performance, Value Based Care), Insurance payment models, Capitation + Pay for Performance, Bundled care, Centres of Excellence, Accountable Care Organizations, Market pressures and cost containment models, and range and size of hives, Eularis is able to identify what pricing and contract deals are best by institution to ensure your brand achieves and retains formulary status. This is what we're doing presently for biosimilar entry (both for originators to retain share and for biosimilars to enter their market).

Patient adherence

Adherence to medication is crucial for patient health, as it is responsible for 125000 fatalities each year in the United States alone. Furthermore, if a medicine is not utilised appropriately, it will not perform as intended. With pay for performance on the rise, it's up to pharma to guarantee that prescriptions are taken as prescribed in order to achieve the best possible patient outcomes and business results. Several Eularis projects have used big data and AI to predict which patients may stop adhering to their medications and how to manage this. AI is the ideal tool for this research because everyone who stops taking medication does so for their own reasons. Over 250 different explanations have been identified in adherence studies as to why individuals stop taking their medications. It's critical to comprehend these in individual patients in order to manage their unique issues[4].

Precision sales force messaging

Custom messaging for sales reps to employ for a specific physician based on what that physician wants at that particular moment in time can be produced using big data and AI. In Eularis programmes, customisation based on AI data was demonstrated to boost prescribing by 43 percent for sales reps who used it against sales reps who didn't.

Customer service and engagement

Excellent customer service aids in gaining and maintaining a client's trust. Customer experience has been dubbed the "new brand battlefield," with 89 percent of businesses competing on the basis of customer satisfaction.

One of the most important factors in maintaining a customer relationship and providing a positive experience is after-sales care. By enabling good client engagement, AI-powered chatbots assist organisations in increasing leads and revenues. Social messaging applications are also a great way to communicate with your audience on platforms that are popular with them. With the addition of AI, these apps can now provide one-on-one engagement with each consumer. The apps can be linked to:

- Assisting followers in obtaining the necessary authorization
- Capturing leads
- Checking product inventory
- Scheduling sales and servicing appointments
- Sending out notice reminders for any major events

Other applications of Artificial intelligence

- Diagnosis and identification of diseases
- Planning for radiology and radiation therapy
- Clinical trial development and research
- Personalized medicine and the identification of unusual diseases
- Drug discovery

Challenges Offered by AI

People, planning, and patience are the three key problems that the industry encounters while employing AI.

1. People- AI scares a lot of people in our culture, and they can be quite resistant to its application. Companies will not be able to achieve "widespread adoption" until they address patients', providers', and employers' anxieties and feelings.

2. Preparation- In order to properly deploy AI, a company must ensure that its data is ready and that the groundwork has been prepared. This can be a difficult procedure, especially for firms who have never implemented AI before.

3. Patience- Companies frequently want to go out and buy AI that they can use right away, but they forget that AI is still in its early stages of development. AI isn't something you can just pick up off the shelf; he requires a lot of bespoke work. This will take some time. Executives should be humble enough to look for AI experts and AI-focused businesses that specialise in this type of job.

Conclusion

AI, along with big data, is unquestionably the next big thing in pharma. Companies who are more adaptable and quicker to adopt AI will almost certainly gain a strategic edge. Experts believe that integrating AI will soon be required in order to compete in the industry. The transformation, on the other hand, will not occur overnight. Rather, it will happen gradually over the next 10 to 20 years. AI is likely to be integrated into most, if not all, pharmaceutical R&D operations by that time. As a result, the success rate of medication development should theoretically improve, and R&D efforts should be streamlined. Furthermore, AI might theoretically aid in properly identifying the subset of patients who will benefit from a specific medicine. This might significantly lower the failure rate and ensure a successful (and faster) launch. Pharma must become invested in the conversation by supporting the benefits of AI technology in order for AI to have a positive impact on patients and healthcare providers.

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