

# Artificial Intelligence in Pharmaceutical Sales & Marketing – A Conceptual Overview

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**Abstract**— Artificial Intelligence (AI) is a concept that describes how intelligent people think about an intelligent machine, a computer-controlled robot, or a piece of software. The advertisers will be able to switch from marketing personalization to super personalization or hyper customization with the aid of AI. Also, the marketers will be able to target individual doctors more precisely using AI, depending on geographical locations, number of patients, and prescribing patterns of doctors, as well as personal behavior / interest / attitude. Many pharmaceutical companies participate in personal promotional activities such as rep visits, conferences, seminars, and webinars, while email and other digital media are mostly used for non-personal promotion. The sales and marketing teams will focus on finding the right healthcare professional and segmenting them into the right channel at the right time. AI will assist marketing teams in understanding brand history, running brand diagnostics, and charting the brand's future direction. In furtherance, AI could help sales teams with Customer Relationship Management (CRM), pre-call planning, guided sales, and e-details, resulting in a competitive advantage and improved sales outcomes. Overall, this will assist organizations in achieving better business outcomes with less resources and time respectively. Moreover, the interactions between reps and health care professionals (HCPs) may be the object of control. The power is now transmitted via variety of touch points, many of which are digital, and can be accessed by an HCP at any time and from any location. Thus, to increase their value the sales representatives are required to have comprehensive knowledge of the market and its customers, so that they can tailor their interactions to each of their specific needs, wherein it is all about the numbers. The sales force is more efficient and successful when data is gathered judiciously, correctly digested, easily analyzed, and wisely used. These suggestions can be saved for later use in the voice assistant, or sent via text or email, and they can help to keep the flow of information in the office moving. AI-controlled ecosystems ensure that no critical data is lost.

For instance, whether it is an open email, a website visit, a conversation with a rep, a script, or another job, the rep can quickly and easily find out what their HCP is worried with and what information is most important to their practice. It is by anticipating relevance, the rep will provide the HCP with information that is useful to them in the required format, on time, and exact place or location. In this process, the time is invested wisely on both sides, allowing the right expertise to help patients even more quickly. The business is robust, and it is only a matter of time before AI-based disruptions change the pharma marketing formulae, code and momentum. It is to be noted that through actively engaging AI, Pharma and Life Sciences sector not only gain more useful information from data, but also draw previously inaccessible insights from it. Furthermore, it can help improve marketing strategies and helps patients stick to therapy care plans and make better choices. The future research shall focus on conversational AI as well as natural language processing and robot-based process automation, which will be the next big avenue in the pharmaceutical industry that are subjected to several disruptions.

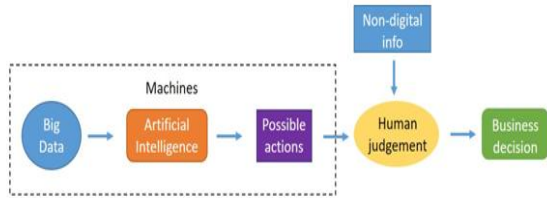
**Index Terms:** AIPM, Artificial Intelligence, Pharmaceutical Marketing, Sales & Marketing.

## INTRODUCTION TO AI

Artificial Intelligence (AI) is a technique for making a machine, a computer-controlled robot, or a software think in the same way as intelligent humans do (Shabbir et al., 2015). AI is accomplished by studying how the human brain thinks, as well as how people learn, assess, and act while attempting to solve a problem, and then applying the results to the creation of intelligent software and systems (McCarthy, 1998).

AI For Managers or Decision Makers:

In several business functions, such as marketing and distribution, AI has been able to speed up processes and provide accurate insight to decision-makers. In marketing, for example, automation of market segmentation and campaign management has facilitated more efficient decision-making and faster action. Fig 1: AI for Managers or Decision Makers: A Decision-Making Model that combines the power of AI & Human Judgement.



AI for Managers or Decision Makers: A Decision-Making Model that combines the power of AI & Human Judgement  
 Source: Adapted from Eric Colson, Harvard Business Review

Fig 1: AI for Managers or Decision Makers What will be the role of AI in Pharma Sales & Marketing? Many sales and marketing teams in the healthcare industry are already using AI to enhance their data-driven insights into their experience-based decisions, which is disrupting the way they think about their go-to-market strategies (Krishnan, 2018). Pharmacies, HCPs, and patients are the key actors in pharmaceutical sales and marketing, and the pharmaceutical industry is now moving from AI infatuation to AI implementation (Pooja Tibarewala, 2019). The sales and marketing teams need to smartly use AI to improve and influence effective and result oriented interactions with each of these stakeholders (Kumar et al., 2019).

**Brand & AI**

AI has an incredible potential to

- Improve brand involvement and rationalize behaviors that promote brand goals.
- Preventing a high level of market perception turbulence
- Contribute to making the brand's experience more personalized and predictive.

**The Tools**

- Entropy Pooling and Signal Weighting
- Enhances the customer's experience, loyalty, profit, and competitive advantage.

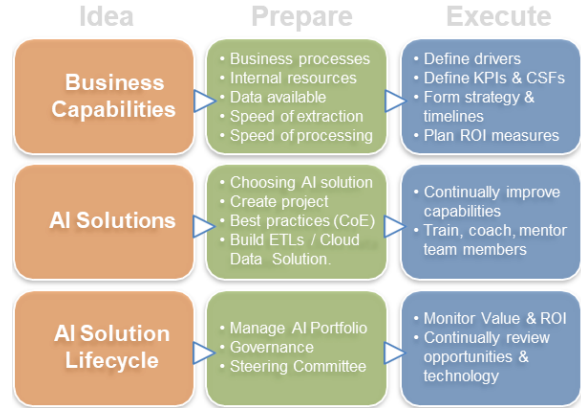


Fig 2: AI Tools to target customers Idea, Prepare &

Execute Product catalogs powered by Intelligence:

- Automatically fine-tuning product catalogue offers based on customer behavior and experiences.
- Propose deep learning-based configurations that optimize price, content, and validity.

**Optimization of Social Networks:**

Optimize data according to demands, traffic volume, user activity, and other parameters to create content routing.

**Engagement in the Market:**

Contextualize and personalize real-time engagements based on a number of variables.

**Customer Care**

"Utilize information and automation by predicting needs and providing "just-in-time" interaction."

**Decision Wheel:**

Using customer engagement to concentrate on brand management

Brand loyalty is created by happy consumers, which increases the brand's reputation.

**AI improves Customer experience**

- Creating personalized reviews
- Creation of AI-powered application programming interfaces (APIs)
- Creating a connection between the organization and its customers, thereby increasing awareness
- Providing voice understanding and emotional intelligence strategies



Fig 3: Decision Wheel for Customer experience & engagement & optimizing social network

Digital Media in Brand Promotion

- Opinions spread quickly
- Word of mouth and social search are powerful
- Customer reviews affect reputation
- Brands use AI to better control experience and hype
- Automation software helps simplify labor intensive tasks



Fig 4a: Digital Media in Brand Promotion

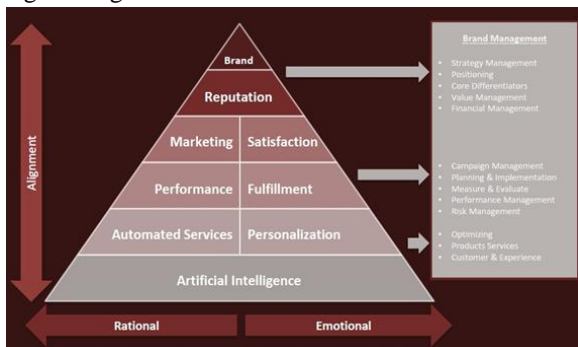


Fig 4b: Brand Management with AI

AI & Pharmacies:

Each pharmacy caters to the demographics of its customers. Pharmaceutical companies must be accountable for these disparities in order to produce the best sales performance, considering sales drivers, sales capacity, and upselling opportunities across all communities. The specifics of pharmacy sales activities, sociodemographic info, location, and so on

can all be monitored using AI. This facilitates the measurement of pharmacy sales potential as well as the tailoring of efforts based on interest groups based on pharmacy sales potential (for example, price sensitivity or responsiveness to promotional activities, etc.). The AI and ML approach may also go a step further and collect data that isn't related to future sales (Angela M. Welbaum,2020). Figure 5: The Role of Artificial Intelligence in Pharmacy Management.



Fig 5: Role of AI in Pharmacy Management

AI & HCPs

Hyper-personalization: AI can help marketers segment, aim, and deliver accurate and personalized marketing by gaining a deep understanding of HCP profiles, habits, and attitudes. Marketers may be able to use AI to help them transition from personalization to hyper-personalization and hyper-customization. Marketers will be also able to target individual doctors with greater specificity using AI, based on geographic location, patients, prescribing habits, and personal behavior/interest/attitude (K Anton, 2020).

Optimizing Multi-Channel Marketing: Most pharmaceutical companies participate in personal promotional activities such as Medical rep visits, conferences, seminars, and webinars, while non-personal promotions include email and other digital media. However, as the competition increases with the increase in number of advertising outlets, making it more difficult to measure the effect of marketing practices on revenues and predict the precise channels yielding the best results (Dinner, 2013). Response rates from previous campaigns, as well as the effects of multi-channel advertising investments, can be analyzed using AI research (Ling et al., 2019). The sales and marketing teams will then concentrate on identifying the right HCPs and segment them into the right channel at the right time (Rod, M., 2007). Marketing teams will use AI to better understand

brand history, conduct brand diagnostics, and map the brand's future course (Dwivedi et al., 2021). Many medicines come in a variety of types and can be used for a variety of purposes. Beyond conventional methods, AI and machine learning analytics will provide a more detailed picture of how multi-indication artefacts are used (McKinsey, 2016). To inform their future marketing strategies, Marketing teams will track product development by indication, specialization, region, and source of revenue. AI could also support sales teams with CRM systems, pre-call preparation, directed sales, and e-detailing of Brands, giving them a competitive edge and better sales results (Freshworks CRM, 2020). These automated processes will eventually have more detailed solutions. Overall, organizations would be able to produce exceptional business results with optimum resources and in less time as a result of this.

#### AI & Patients

AI can be a true friend in the patient journey as it manifests through the health environment to support patients.

#### Awareness & Recognition:

- Search Marketing: Programmatic media bidding allows for highly targeted ad targeting.
- Search Optimization: Messages are automatically customized based on the patient's previous / expected actions. Voice search paired with a chat interface produces a special search experience.
- Google Duplex appointment scheduling allowed essential health visits to be easily synchronized with a busy schedule.

#### Presentation & Diagnosis

- Improved testing and research procedures (MRI, CT scan, melanoma)
- Chat interfaces operated by AI

#### Adherence & Switching

- Patients are linked to related care threads through forum bots.
- Reminders for medication purchase and consumption dependent on AI

#### AI and Future Rep visit

Sales representatives face growing obstacles as access to healthcare professionals (HCPs) decreases: less time with HCPs, Sunshine Act limits, and practice integration into larger health systems. It can be frightening.

Control used to be based on communications between reps and HCPs rather than just about anything else. Power is now transmitted via a number of touch points, many of which are digital, and can be accessed by an HCP at any time and from any venue. To increase their value, sales representatives are required to have comprehensive knowledge of the market and its customers, so that they can tailor their interactions to each of their specific needs.

How can today's rep succeed? It's all about data.

The sales force is more efficient and successful when data is gathered judiciously, correctly digested, easily analyzed, and wisely used. This concept isn't new: it dates back to the early days of CRM in the twentieth century.

However, today's digital environment opens up new possibilities, allowing for connections and predictions that the rep of yesterday could never have imagined.

What if reps could anticipate relevance?

By combining the best of business knowledge, brand management, CRM technology, and artificial intelligence (AI) and machine learning, reps would be able to make anticipated significance a reality.

How does it work?

EVA works with Veeva to view a rep's schedule of appointments in order to get updates about where they need to go and who they need to see. EVA tells a sales rep about today's call segmentation as well as marketing segmentation. Data contributes to the dialogue by offering valuable details such as script writing history, marketing strategy, previously presented interactions, and online activity, giving our representative a prediction of what their next best steps should be. These suggestions can be saved for later use in the voice assistant, or sent via text or email, and they can help to keep the flow of information in the office moving. After a call, EVA can assist a rep in quickly and efficiently recording it in the CRM system.

AI-controlled ecosystems ensure that no critical data is lost. Whether it's an open email, a website visit, a conversation with a rep, a script, or another job, the rep can quickly and easily find out what their HCP is worried with and what information is most important to their practise.

By anticipating relevance, the rep will provide an HCP with information that is useful to them in the format, time, and place that is most helpful to them. EVA is also capable of successfully using the most important assets while minimizing the administrative burden. Time is invested wisely on both sides, allowing the right expertise to help patients even more quickly. Fig 6: Medical Representative visiting Doctors have become old school and VEEVA Engage meeting is the new normal.



Fig 6: Med Rep visiting Doctor and VEEVA Engage Meeting

#### The way forward

On a broader scale, pharmaceutical companies are yet to completely adopt AI for sales and marketing. The industry is booming, and it will only be a matter of time before AI-driven disruptions alter the pharma marketing algorithm and momentum. The pharma & life sciences industry can obtain not only more valuable knowledge from data, but also previously unavailable insights, by actively engaging AI in every platform of business. Artificial intelligence can help with things like drug applicant recognition, repurposing of older drugs, recruitment of subjects for clinical trial, and consumer awareness. It can also help patients adhere to therapy care plans and make better choices, as well as boost marketing efforts. Conversational AI, along with NLP and robot-based process automation, will be the next big thing in the pharmaceutical industry, triggering a slew of

changes. While many people are concerned that AI will fully eliminate the people who are pushing us to the verge of unemployment, it is important to note that AI is only here to make our lives easier. We need to think of AI as a tool that helps us do our jobs more efficiently.

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