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How to Embed Artificial Intelligence into the Market Access Process Effectively

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Introduction

Market access remains one of the most complex links in the pharmaceutical value chain, and studies show it has grown in complexity significantly in recent years. The advent and widespread adoption of new digital technologies is changing expectations from patients, practitioners, and payers, while fluctuating and novel market pressures make it difficult to devise useful strategies.

While reference-pricing systems have already brought prices down in many countries, they have not stopped healthcare payers from pushing for even greater savings. The governments in both Sweden and the UK have secured pricing deals with drug manufacturers on top of other efforts to drive down costs. Such policies can be controversial, leading to reversals in some markets. Germany, for example, is under pressure to revise its value-based pricing scheme for Pharmaceuticals

Healthcare policymakers and payers are increasingly mandating, or influencing, what doctors can prescribe. As treatment protocols replace individual physician prescribing decisions, Pharma's target audience is also becoming more consolidated and more powerful, with profound implications for its sales and marketing model. The industry will have to work much harder for its dollars, collaborate with healthcare payers and providers, and improve patient compliance.

Artificial intelligence (AI) is the most appropriate tool for cutting through this complexity and making data-driven market access decisions. An unprecedented quantity of data is now available to pharma providers, and those with the tools and knowledge to make use of it will quickly pull ahead.

This article examines some of the current challenges to market access and how AI can help solve them.

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Current Challenges to Market Access

Pharmaceutical companies face a variety of challenges when it comes to bringing new drugs to market and ensuring the continued purchase of existing ones.

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A Shift to A Value-Based Healthcare System

A basic tenet of healthcare reform is the quest for improved quality and reduced cost. In turn, this is driving a dramatic rethinking of the traditional fee-for-service reimbursement system to one in which reimbursement is based on value (defined as quality/cost) as it applies to the health of not just individual patients but populations.

One result of this is changing formulary management strategies. In the US, the majority of health plans have moved to formularies based on clinical outcomes and have created formularies based on value. Many of these are already using big data and AI to influence formulary decisions and clinical guideline development. We are seeing a move to clinical-based formularies throughout the developed world, with aligned increasing emphasis on the value of Pharmaceuticals. In one year alone, the National Institute for Health and Care Excellence (NICE) in the United Kingdom declined (or recommended that the drugs be declined) for 11 high-priced drugs, citing cost compared to clinical outcome.

Health plans, and employers, are increasingly looking for head-to-head and comparative effectiveness studies as well as real-world evidence in making any formulary decisions. As the authors of a report on value-based reimbursement and the Pharmaceutical industry noted: "Value attributes (e.g. outcome or performance variables of interest) must be collected, measured, valued, aggregated and converted (using a decision rule) to evaluate whether the value metric was achieved. Also, there must be a consensus program of data collection, typically initiated early in the commercial lifecycle."

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Pushback on Specialty Drugs

Specialty drugs have been one of the bright spots in the Pharma industry, accounting for more than half of total pharmacy spend on the commercial side based on a report by CVS in 2021, despite accounting for less than 2% of all US prescriptions. For 2021, it was reported by a paper in American Journal of Health Systems Pharm that overall **prescription drug spending rose by 4% to 6%**, whereas in clinics and hospitals increases of 7% to 9% and 3% to 5%, respectively, compared to 2020.

However, state systems and commercial insurers globally are pushing back against these rises. Plans are designing special formularies for specialty drugs, implementing Oncology pathways to rein in costs, and shifting coverage from the medical benefit to the pharmacy benefit, which may put greater financial responsibility on patients. Indeed, the majority of commercial plans (75% of covered lives), and Medicare Advantage and prescription drug plans charged a co-insurance rather than co-pay for specialty drugs.

Providers have also pushed back in public ways. The most notorious of which was in April 2013, when an international coalition of Cancer experts released a call to action, decrying the "astronomical" cost of certain drugs. The letter followed the actions of Oncologists at New York's Memorial Sloan-Kettering Cancer Center in 2012 who publically refused to prescribed the drug Zaltrap (zivaflibercept) for Colon Cancer because it was twice as expensive as similar therapies. Their outcry eventually led the drug's manufacturer to slash the price in half. These efforts are having an effect; with some pharma having lower than expected earnings on specialty drugs. Add the threat of biosimilars for many specialty drugs, and it is clear that this lucrative arena is under attack.

To combat the risk of significant revenue loss from these drugs, manufacturers need to determine pricing and reimbursement and marketing based on more than just recouping research investment and hitting profit goals. Analytics must include the effect of pricing on increasingly cost-conscious private and public payers, as well as the true value of the product. For instance, cost-benefit analyses of Solvadi find it is more cost-effective than current treatments for HCV. But how do manufacturers get that message to their customers in the most effective way? That's where predictive analytics comes in.

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Changing Delivery Models

Today, more providers are salaried employees, bound by their organization's prescribing policies which often limits sales rep access to providers and restricts them to organizational formularies. In addition, the growth of accountable care organizations (ACOs), which share risk for the health of populations and the cost of care, is also altering prescribing behavior. This, in turn, requires that Pharmaceutical companies identify innovative ways to market in this new environment. Such changes require greater use of data to meet the needs of individual customers.

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Rising pressure regarding pricing and reimbursement.

On multiple fronts, pharmaceutical companies are being pressured to reduce prices. Healthcare costs continue to rise due to aging populations, an increased prevalence of chronic illnesses, and more expensive therapies. As a result, pharmaceutical companies are facing ever stricter pricing and reimbursement tools, like reference pricing and generic substitution, as well as steeper clawbacks.

At the same time, the influence of payers (e.g. PBMs) continues to grow, resulting in higher and more frequent rebates (that don't always make their way to pharmacies and payers), accompanied by a staggering rise in formulary exclusions in the last half-decade.

Finally, as noted previously, reimbursement plans are shifting from traditional fee-for-service to value-based and patient outcome measures. A growing number of healthcare payers are measuring the pharmacoeconomic performance of different medicines. Widespread adoption of electronic medical records will give them the outcomes data they need to determine best medical practice, discontinue products that are more expensive or less effective than comparable therapies, and pay for treatments based on the outcomes they deliver. This means greater pressure to collect as much and as granular data as possible, rapidly analyze it, and spin it into a coherent, compelling story. Pharma will have to prove that its medicines really work, provide value for money and are better than alternative forms of intervention.

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Expectations from practitioners, payers, and patients are rapidly changing.

Today's stakeholders are fed up with antiquated barriers to accessing pharmaceutical reps and drug information. In fact, according to one study of 189 U.S. P&T committee members making formulary decisions at hospitals, IDNs, PBMs, MCOs and ACOs, "44% of P&T committee members said they would use pharma digital resources more frequently if pharmas made it easier to find content dedicated to formulary decision makers" like trend reports for disease areas or interactive budget modeling features. Pharma needs to focus on distilling complex data into easy-to-use, easy-to-understand digital content.

As for patients, their "involvement and partnership is now an essential and necessary component of the drug development process" necessary to "meet the demands of regulatory and reimbursement authorities" and "deliver new products which meet the expressed needs of patients for which they are intended" (Holtorf & Cook, 2018).

Stakeholder fragmentation.

Finally, there exists today a broader range of market access stakeholders than ever before, and greater complexity in both global and regional market access. Market access teams need to be able to make convincing, data-driven, outcome-based pitches to a wide variety of individuals and bodies, each with their own expectations and agendas, within ever tighter timeframes.

The common thread to all of these challenges is that market access teams need more accurate and more granular data that's broader in scope and provenance, with faster insights that are easier to personalize and convey to a variety of stakeholders. The answer to all these requirements lies in artificial intelligence (AI).

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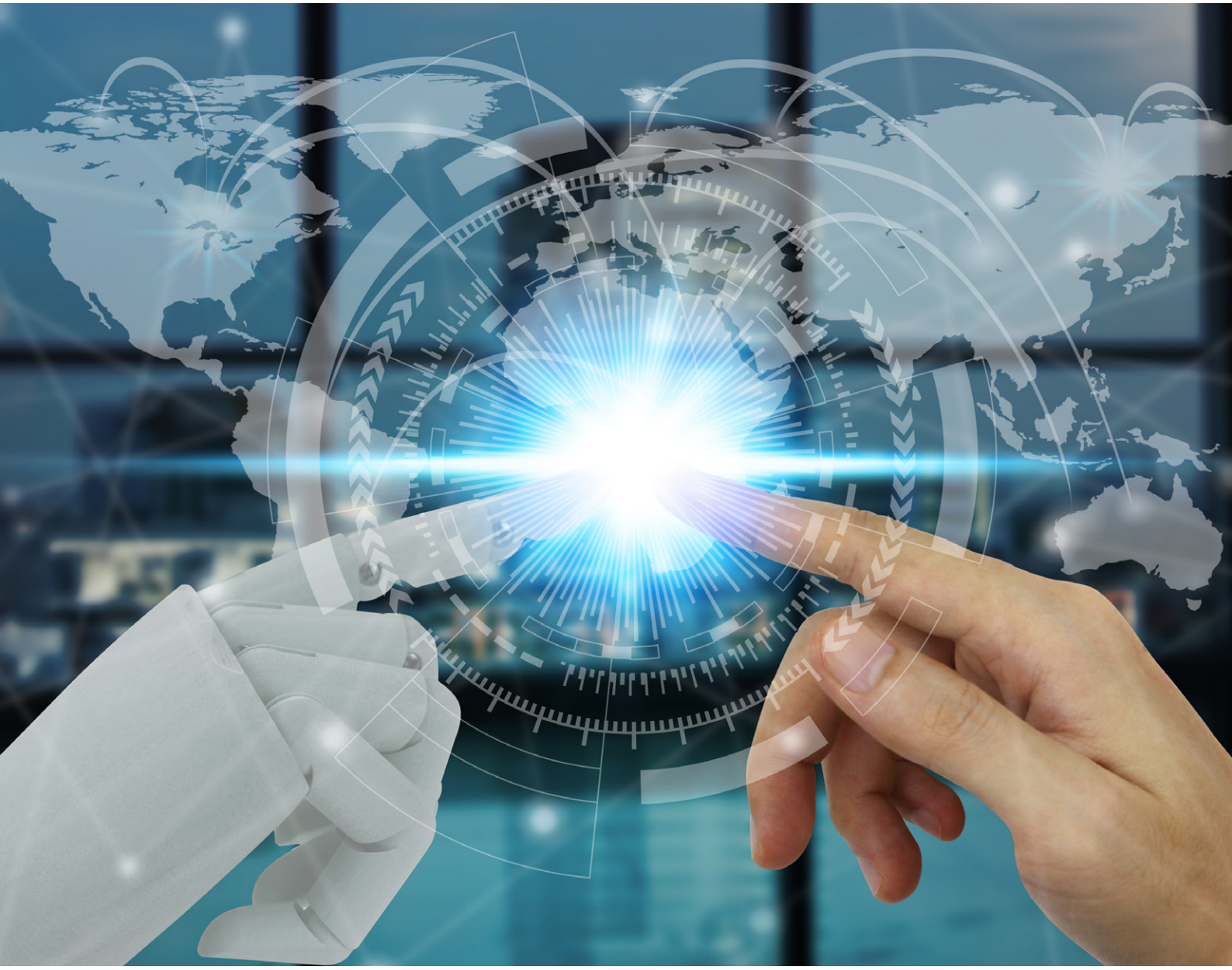

AI Solutions for Market Access

The main goal of market access teams is to achieve the broadest possible payer access with the best possible margins and the most advantageous reimbursement scheme. A tall order, no doubt, especially given the challenges mentioned above. Fortunately, there are a variety of AI tools available today to help teams do just that.

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Pricing

Pricing is an important but highly complex element in market access. It involves analyzing large amounts of data from ever more diverse sources—something AI excels at. Rather than spending hours pouring over clinical trial and real-world data (RWD), past drug submissions and evaluations, and global, regional, and historical pricing data, market access teams can simply feed this data into an appropriately structured AI system for fast results, largely free from human error and easily translatable into relevant, compelling insights.

Two AI-powered start-ups that I have investigated for example, have predictive value pricing models that have demonstrated up to 90% accuracy. Accurate predictive value pricing enables pharma companies to better adjust their approach to approval and reimbursement, while the ability to use and intelligently analyze ever more data from patient outcomes and clinical trials allows for value-based pricing that appeals to payers, all while providing maximum profits.

These types of AI-powered technologies have helped market access and pricing executives assess the performance of any new drug years in advance, with an advanced understanding of each factor influencing the final outcome and provide an opportunity to proactively build a strong data-driven case, which means that they can enter pricing negotiations with strong big data driven facts having all the different scenarios to hand.

And this is just the tip of the iceberg. An article by the Professional Society for Health Economics and Outcomes Research (ISPOR) highlights five different domains with high opportunity for impact from AI, all of which relate to pricing.

	Burden of Illness	Drug Utilization and Patterns of Use	Patient-Reported Outcomes	Comparative Effectivness Research	Economic Evaluations
Natural Language Processing		+ + +	+ + +	+ + +	
Text Data Analysis	+ +		+ + +		
Machine Learning	+ +	+ + +		+ +	+ + +
Deep Learning	+ + +			+ + +	

The rating represents the strength of the application of each method to the HEOR research activities.
+= less applicability; +++ = high applicability

Rueda, Cristancho & Slejko (ISPOR). "Is Artificial Intelligence the Next Big Thing in Health Economics and Outcomes Research?"

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Reimbursement

It's important to understand what causes delays after a drug is approved by FDA/EMA and must be submitted to the different formularies in the US, or the different country payers if in Europe.

The goals of these payers can be different – outside the obvious one of lowering costs – depending on their specific responsibilities, and if your submission doesn't align with them, you're wasting time and resources. For example, showing a significant savings in hospitalization in favor of your drug would be beneficial if a payer is responsible for total healthcare costs. Both the drug cost and impact of the drug factor into that goal. However, showing data on reduced hospitalizations to a payer whose responsibility is solely around drug costs may not be the best use of that meeting.

To ensure financial success of a drug, one needs to understand and incorporate the real payer drivers (for each payer influencing the decisions) in your strategy for each stage of development and commercialization.

Changes in policy can also impact speed to market. While this isn't an everyday occurrence, it does happen. In fact, as the industry continues to shift to more of a value-based system, it would be foolhardy not to expect policies to shift with it. Given the volume and complexity of these rules, staying on top of it isn't always as easy as it sounds.

Outcome-based contracts (OBC) and value-based models or "value pricing" are promising approaches to pricing and reimbursement, but require rapid analysis of large amounts of data to ensure advantageous reimbursement tiers are approved as quickly as possible and that providers aren't left holding the bag when expectations aren't met.

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Artificial Intelligence gives us the means to uncover and correct the inefficiencies in drafting and submission, so pharma companies can get to market faster. The optimal approach utilizes several techniques using a combination of natural language processing and machine learning.

Using advanced data mining techniques, it is possible to gather insights based on past industry-wide experience and information on policy changes and process alterations. You likely already have much of the data needed to optimize your strategy, although it may be scattered throughout disparate internal sources. When combined with publicly available data on your competitors' products and submissions and up-to-date information on policy change and process alterations, you can begin to uncover the factors that have the biggest impact on accelerating tie to reimbursement.

It could even enable time-to-market estimates and success probabilities for planning and budgeting purposes so you can prioritize your best chances of success.

These factors include everything from the type and tone of language used to the clinical trial data and pricing levels to local market trends and everything in between. When we analyze and compare the data using machine learning algorithms and natural language processing in the context of fast vs. slow reimbursement approval, it's possible to understand which of these are important to the decision-making process and outcomes of the reimbursement authorities.

In addition to the factors selected, an AI-powered approach can also uncover previously unknown or disregarded factors that would likely lead to more effective strategies. And these insights could be used to guide future submission strategies as well. It could even enable time-to-market estimates and success probabilities for planning and budgeting purposes so you can prioritize your best chances of success.

The benefits of AI in this area aren't limited to just gaining insights. It can also streamline the execution of those plans and procedures. Using sophisticated techniques, you can develop the submission documents utilizing both the drivers for that formulary as well as the optimal language shown in previous submissions to work best for that formulary committee.

If we know who is on the formulary committee, we can ramp this up even more by analyzing the accessible data on the individual members of the committee to identify their drivers and utilize that knowledge in how the submission documents are drafted. In fact, we have also used AI to draft the submission documents tailored for different formularies (in the US) or different countries (in the EI). They still require a human to check them over as although grammatically correct, some sentences may sound odd. But the advantage of this is the AI can determine what language is best for which formulary, and what factors on top of price will sway that committee the most.

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AI can also assist by better identifying qualifying populations with greater certainty around efficacy, informing manufacturers on where OBCs are most likely to be advantageous, and, of course, tracking and analyzing outcomes.

Field reimbursement managers (FRMs) work on the frontlines of reimbursement. Given the complexity of their role, they are also uniquely well positioned to benefit from AI solutions.

Indeed, there are a number of ways AI can be used for simple faster reimbursement.

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Eularis Case Study: How to Use AI for Faster Time to Reimbursement

According to Pharmaceutic Executive, a delay in launch can cost a company an average of $15 million per drug, per day. This project was about using Artificial Intelligence to speed up the time to reimbursement on different formularies after FDA approval.

The Client Challenge

The client analysed how many $ were left on the table with everyday delay to reimbursement approval in different formularies. They wanted to see if Artificial Intelligence could impact this positively and speed up time to reimbursement thereby increasing revenue from their products.

The Solution

Using a combination of different AI techniques, to:

* identify the factors affecting time-to-reimbursement for newly launched medicines post market approval,
* provide insight into what to include in, or leave out of submissions for formulary inclusion
* find other important considerations and insights that have worked in the past to accelerate time-to-reimbursement.

The Outcome

Reimbursement was achieved much faster in the pilot of formularies using AI versus the ones not using AI. The average improvement in speed was 6 weeks. At an average of $15 m/day that can be left on the table, the amount of revenue gained from this simple increase in speed to reimbursement allowed a significant return on investment and the approach is now being rolled out to other products as well.

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Stakeholder Engagement

Pharmaceutical companies must engage more effectively with practitioners and patients. One way to do this is by leveraging AI to engage stakeholders across multiple channels and in a fashion that facilitates rather than impedes the free exchange of critical pharmaceutical and biomedical information. Digital tools that meet payers' and others' information needs, for example, powered by AI and accessing fully compliant healthcare and drug data, make life easier for formulary decision-makers. In fact, 52% of P&T committee members from a recent survey agree that interactive content "makes meetings with pharma account managers more valuable." And managing the data—and gaining insights from it—on all these stakeholders is another job perfectly suited to AI.

AI can also provide pharmaceutical companies with precious insights not only into patients and practitioners but also payers. Product presentations must be done with the right message, in the right language, and at the right time for a variety of stakeholders and audiences whose needs and expectations may vary widely. With the right AI strategy, for example, businesses can develop submission documents based on drivers specific to a given formulary, with optimized language according to previous successful submissions.

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Faster Answers for Market Access Analytics Teams

A challenge one big pharma brought to us was the fact that they were getting around 250 queries per week from their brand teams in the market access arena and they had a team of analytics professionals in the US, as well as a team in India so analytics was going on 24/7 with fairly large teams. Even so, it was taking days to a week to provide answers to their brand teams.

> ***What used to take up to a week to analyze was reduced to 15 mins in the automated platform.***

Enter AI. For this team an AI solution that was implemented was to create an integrated, clean, big data source, then AI was applied to create rapid answers automatically. The data was updated at the same times as it always was but automatically fed into the platform. The platform was layered with Natural Language Processing (NLP) so the queries could be put in as one would ask a human.

What used to take up to a week to analyze was reduced to 15 mins in the automated platform. On top of that the answers were also in visualizations as well which meant they were game ready for executive presentations as well. This system was described by the team as 'game changing' as after implementation 70-80% of queries were automatic leaving the analysts time to focus on where they could add value (rather than repetitive calculations) and deliver insights that are game ready for the Heads of Divisions.

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Conclusion

The challenges companies and actors face in market access today are significant, and only growing in complexity. Fortunately, artificial intelligence is a powerful, adaptable tool that pharmaceutical companies and their partners can use to improve market access and speed a drug to market, save team time, and deliver stronger financial results.

For help on where to start, pharma market access executives can start by reaching out to the author Dr. Andrée Bates (abates@eularis.com) (who pioneered AI in pharma sales and marketing in 2003) for a confidential discussion on what can be achieved for their company.

Fortunately, artificial intelligence is a powerful, adaptable tool that pharmaceutical companies and their partners can use to improve market access and speed a drug to market, save team time, and deliver stronger financial results.

ABOUT THE AUTHOR

Dr Andrée Bates

Dr. Andrée Bates is a pharmaceutical industry veteran with 30 years in the industry and 20 years working specifically in pharma AI. She brings blended expertise in Artificial Intelligence (AI), Pharmaceuticals, and Strategy. Dr. Bates has led Artificial Intelligence powered projects for numerous top-tier pharmaceutical companies in diverse areas such as clinical trials and R&D, market access, regulatory, medical affairs, and sales and marketing. These have all resulted in measurable growth in revenue, profit, and market share for her clients. Having worked in the pharmaceutical industry since 1993, and AI in Pharma since 2003, she has a detailed understanding of the pharmaceutical environment and how AI can be leveraged compliantly and effectively. She has authored many articles in peer-reviewed journals and industry reports. She has also been a guest lecturer on Healthcare Innovation and AI in multiple university MBA programs: INSEAD Business School (Fontainebleau), the Erivan K Haub School of Business at St Joseph's University (Pennsylvania), Fordham University (New York) Global Healthcare Innovation Management postgraduate program, and Bayes Business School (Formerly Cass Business School – The University of London), and she lectures on AI for Boards at Henley Business School at the University of Reading, as well being a guest speaker in numerous internal pharmaceutical company meetings and international conferences in UK, USA, Latin America, Canada, France, Germany, Spain, Hungry, Poland, Japan, China, Singapore, and Australia.

About Eularis

Eularis exist to help biopharma and healthcare commercial teams who want to weave FutureTech like Artificial Intelligence (AI) and Machine Learning (ML) and Virtual Reality (VR) and Augmented Reality (AR) and Internet of Things (IOT) to solve their challenges and deliver unprecedented measurable results.

The Eularis team of experts have extensive qualifications combined with many years of real-world experience in both biopharma and AI companies. The mix of qualifications (MD, PhD, MBA, M. Sc., M Engineer.) along with prior experience in executive-level positions in top 20 pharmaceutical companies ensures our clients have the right strategic and tactical questions solved and planned with cutting edge technology and AI. You have access to Pharma AI Futurists, Pharma Board level team, and AI Strategists, and Data Scientists and Big Data Engineers and Developers to ensure you are playing at the top of your game.

Every project is unique and begin by developing a deep understanding of your strategic needs and your data. Then, we plan the right approach to meet your strategic needs and transform your performance.

Learn more
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TRY ONE OF OUR CORE SERVICES

1 AI STRATEGIC BLUEPRINT

Give us your most difficult challenges to solve with AI and FutureTech!

The problem of poor AI impact comes down to a lack of strategy and pre-strategy. We know AI is impressive, and we see the results all around us. So why do many pharma AI project never pass the pilot stage? There is a plethora of evidence as to why not having a strategic AI blueprint before you begin is problematic and leads to project failure. We create strategic AI blueprints to ensure all AI projects meet the company's strategic objectives and move the needle for maximum impact.

2 AI DEPLOYMENT BLUEPRINT

Ensuring the key foundational elements required for success in your AI FutureTech projects are in place.

In the pharma environment, we face unique challenges. Knowing where you want to go is one thing, but the trap many then fall into is ensuring that the key foundational elements are in place (e.g., finding the right data, getting through internal legal and compliance, buy vs build, tech planning SOW, choosing the optimal AI vendor etc.) so that you can execute quickly. Our deployment blueprint accelerates your ability to industrialise the opportunity effectively by taking care of all these foundation pieces enabling you to easily commercialize the most effective solutions rapidly and seamlessly.

3 AI MODEL IMPLEMENTATION & TECH BUILD

End-to-end solutions focused AI and tech implementation

Tech implementation from end-to-end including tech project planning, implementing security procedures, data discovery, data staging, data preparation, data AI modelling (with ML, NLP, Generative AI etc) model evaluation, UI/UX creation, integration services, software integration and cloud services, perform testing and quality controls and launch.

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