SCRIP
CITELINE COMMERCIAL

08 Mar 2024 | **Interviews**

BMS CDTO Meyers On Gen AI Use Cases, Long-Range Planning Models

by Anju Ghangurde

Bristol Myers Squibb's EVP and chief digital and technology officer, Greg Meyers, tells *Scrip* how the company is using data, technology and artificial intelligence to speed up the clinical research process. An AI engine that leverages real-world data to improve trial diversity and promising generative AI uses cases are some of the key topics discussed.

There's a lot going on at _Bristol Myers Squibb_ (BMS) as it seeks to integrate new technology into various applicable business elements, from early-stage research to clinical trials, manufacturing and all the way to commercialization.

In an interview with *Scrip*, Greg Meyers, BMS' executive vice-president and chief digital and technology officer, outlined how the major US firm is using data and technology to simplify and accelerate the clinical research process and also touched upon generative artificial intelligence (Gen AI) use cases that the company is excited about.

"Our mission is to uncover hidden patterns and insights from complex multimodal data using advanced machine learning techniques to develop faster, safer, and more effective drugs," Meyers stated.

Those data, backed with proper consents and authorizations, could come from different sources including clinical trials, large real-world datasets from hospitals and other medical systems, where information from patients receiving similar medicines to the ones being tested in the company's clinical trials can be gleaned, and also publicly available data that can be leveraged for additional insights, he explained.

Meyers has in the past drawn parallels between big data and an oil well – it's akin to "pumping oil out of the ground as we need more gasoline to move the car," he was noted as saying. About 30% of the world's data volume is currently estimated to be generated by the healthcare industry.

"The refinement of that data and being able to provide meaning to it, how you translate and refine that data into information that can connect together, is probably the biggest challenge that we face in the industry," the executive had earlier said in Technovation, a podcast for IT and technology hosted by Peter High.

Meyers asserted to *Scrip* that as the world generates more and more real-world data (RWD), BMS stands at the forefront of identifying highly targeted therapies, by interrogating these large data sets, leveraging AI and machine learning to elucidate the complex relationships between disease biology and novel molecular compounds.

"This is a trend that is already underway. Take for example non-small cell lung cancer, there is a specific genetic mutation which about 14% of all patients have. This mutation causes the production of one amino acid to be replaced with another which causes the unregulated growth of this particular type of cancer. We have a therapy currently in development that is designed to target this specific mutation," Meyers pointed out.

The executive was in India recently as part of a BMS leadership team led by CEO Dr Christopher Boerner to officially open a new facility in Hyderabad, which entailed an investment of over $100m and is expected to expand the company's global drug development, IT and digital capabilities. (Also see "*BMS' Boerner Bets On AI-Driven R&D In India, Points To Potential For MS, Lupus Drugs*" - Scrip, 4 Mar, 2024.)

Meyers was also part of a heavyweight panel that discussed the health-tech revolution at BioAsia 2024, which saw over 2,700 delegates in attendance and CEOs from *Eli Lilly and Company* and *Medtronic*, among others, address the conference. (Also see "*Lilly CEO: Affordable Generics And IP Support 'Not Incompatible Ideas'*" - Scrip, 1 Mar, 2024.)

Trial Diversity, Alliances

Meyers also touched upon the exponential advances in terms of power and sophistication that AI programs are making and how BMS expects to leverage these technologies at various stages of the drug development process. Supply chain resilience is another focus area and deploying predictive technologies/analytics appears to be where things are heading (*see side box*).

The company is investing in a number of advanced data science approaches to accentuate its clinical program, to improve diversity of trials and better understand the disease progression in a diverse set of patients, while also leveraging the "most robust optimal data science approaches" so biases are all

Long Range Planning Models

BMS, like most other peers, is deploying advanced data and analytic capabilities to

minimized.

"In terms of clinical trial diversity, we are deploying an AI engine that uses RWD about patients living with the disease to create, and adjust as needed, inclusion/exclusion criteria. By tweaking parameters, BMS can significantly increase the likelihood more diverse patients would be eligible," Meyers pointed out.

As is the wider industry trend, alliances and partnerships are a significant prong of BMS' journey to bolster its early pipeline research, optimize the clinical trial experience, and contribute to data initiatives that may accelerate future innovations.

In the trials arena for instance, BMS had earlier partnered with ConcertAI to leverage its RWD for use in the design of clinical trials. Powered by ConcertAI's digital clinical trial platform, the alliance is employing digital innovation to redesign and redefine how pre- and post-approval studies are conducted.

"We have also worked with ConcertAI on designing software to help accelerate the clinical trial process itself from patient identification, consent, contract negotiations and more. We anticipate this will become the 'gold standard' for studying oncology therapies," the executive added.

In 2022, BMS also forged a multi-year clinical data science alliance with Owkin initially centred on cardiovascular

better understand and manage supply chain risks as the world navigates a period of heightened uncertainties eclipsed by geopolitical tensions and wars.

BMS's chief digital and technology officer, Greg Meyers, indicated that the company is building long-range planning models to visualize the company's manufacturing network over time to ensure "dual sourcing paths" for critical materials and products and to better understand the supply chain of direct suppliers and their direct suppliers.

The efforts also encompass exploring opportunities to apply publicly available data such as weather patterns, political conflicts, etc. to "predict potential bottlenecks and develop contingency plans," added Meyers, a former group chief information and digital officer at Syngenta Group, a leader in regenerative agriculture.

The pandemic exposed huge weaknesses in global supply chain networks across sectors and the ongoing Hamas-Israel and Russia-Ukraine wars and their ripple effects have only added to the turbulence. Experts have in the past highlighted the exponential complexity of global supply chains, with most large organizations having little idea about who their top 10 critical tier 2 suppliers are.

Tier 2 firms are typically those that deal with a principal company's main direct suppliers. (Also see "*The Golden Winged Warbler And Creating Pharma Supply Chain Immunity*" -

diseases. The deal came on the back of years of collaboration between the AI biotech and BMS that saw a number of successful projects, including ones pertaining to biomarker identification and improving trial outcomes with covariate adjustment, using RWD.

BMS, *Sanofi* and venture funds such as Fidelity, GV and Bpifrance are among those who have invested in Owkin over the years. (Also see "*Former Meta Exec: 'Culture Is The Greatest Challenge To Benefiting From GenAI*'" - In Vivo, 12 Feb, 2024.)

Generative AI Use Cases

BMS, like several peers, is also exploring new technologies like generative artificial intelligence (Gen AI) which is expected to potentially rewire the life sciences sector, with several promising use cases emerging in industry across the molecule-to-market continuum.

Pink Sheet, 26 Oct, 2020.)

Some big pharma players are estimated to have as many as 5,000 direct suppliers and each of these in turn may have up to 250 tier 2 suppliers of their own, resulting in more than a million different enterprises supporting an organization.

Pharma executives have acknowledged how even the smallest component from a tier 4 or 5 supplier could be the Achilles heel in an otherwise healthy global supply chain. (Also see "*Merck & Co, Indian Firms On Tackling Supply Chain Risks And A Hijack*" - Scrip, 26 Feb, 2021.)

The most obvious one being pursued, Meyers indicated, is around document question and answer, given that BMS, like any other life sciences company, relies on a lot of data and documentation as the industry comprises "endless research and studies."

"Some of our immediate efforts have focused on this space; being able to get accurate answers to complex questions that exist in our databases, and our proofs-of-concept have moved answering some of these questions from sometimes days to seconds," Meyers noted. (Also see "*Scrip Asks…What Does 2023 Hold For Biopharma? Part 6: Artificial Intelligence*" - Scrip, 10 Feb, 2023.)

In the more generative space, he referred to having to often create new documents based on templates of other documents. A simple example entails taking data that might be in a tabular form from the clinical study and converting it to a long form narrative that follows a certain ebb and flow.

"We've seen lots of early success in leveraging models to use sample templates and having them convert tabular data into long form narratives," explained the executive, who comes with wide-ranging experience having held business and technology management positions at Motorola Solutions, *Biogen, Inc.*, *Novartis AG*, *Johnson & Johnson* and PricewaterhouseCoopers.

SCRIP
CITELINE COMMERCIAL

Gen AI In Drug Discovery

But R&D is potentially where Gen AI's high-impact value gains lie.

Meyers indicated that the company was leveraging generative AI and machine learning tools in the early drug discovery process to shorten optimization times of potential drug candidates and drive the "highest quality molecules" in the early development pipeline.

"We are deploying this technology in the protein degradation space as we build upon our legacy and scientific expertise in the field," Meyers stated.

BMS's protein degraders iberdomide and mezigdomide, both in multiple myeloma, are already among the most advanced assets in the segment, which has seen growing interest and a string of deals, including large ones such as that between _Roche_ and Monte Rosa Therapeutics. Earlier this month, C4T and _Merck KGaA_ linked up to discover two targeted protein degraders against critical oncogenic proteins. (Also see "_Merck KGaA Is Latest Partner For C4 Therapeutics' Protein Degradation_" - Scrip, 5 Mar, 2024.) (Also see "_BMS Spends $100m On Orum's Antibody-Guided Protein Degrader_" - Scrip, 7 Nov, 2023.)

> ### _Astellas Exec On Tech Tools For Better Go-No-Go Decisions, Gen AI_
>
> By Anju Ghangurde
>
> 06 Dec 2023
> Astellas's senior director, head of enterprise insights and digital solutions, digital, analytics and technology tells _Scrip_ how data analytics and deductive hypothesis-oriented simulation are driving improved strategic decision-making across the organization. He also outlined some early generative AI use cases and the promise of digital twins in medicine.
>
> _Read the full article here_

Gen AI is expected to unlock significant value, improving both the speed and quality of drug discovery. McKinsey & Company expects the new technology to deliver potential value of 15-25% of operating profits for pharma when deployed across areas like R&D, content for commercial reps, etc.

A senior McKinsey executive had earlier outlined use cases in areas such as target identification where the global management consultancy could help a pharma client deploy a "clinomics" approach to establish a proof-of-concept genomics platform for a single therapeutic area in under eight weeks, identifying about 200 preliminary variants of interest in the pipeline.

"These variants were mapped to protein targets of interest in the client's internal datasets, generating an end-to-end discovery pipeline," Vikas Bhadoria, senior partner, McKinsey &

Company, told *Scrip* in an interview. (Also see "*McKinsey Exec On Generative AI in R&D And Pharmacovigilance, Digital Twins*" - Scrip, 7 Aug, 2023.)

AI Collective

Meanwhile, BMS is also working to accelerate Gen AI exploration and value with enterprise-wide tooling, helping colleagues leverage the latest concepts with "guided prompting."

Meyers has also, more distinctly, put in place a "community of practice," christened the "AI Collective," as part of efforts to empower the company to "confidently" explore the Gen AI space.

"This is a small group of practitioners from across our company including our research, development, global product supply/manufacturing, commercialization, analytics and IT groups who provide the company with a holistic view of the possibilities of Gen AI," he explained.

These practitioners act as a voluntary internal advisory board to support teams in working on AI use cases, adapting to emerging technologies in the rapidly evolving space.

Your early take on Apple's Vision Pro mixed-reality headset and its potential in healthcare?

Greg Meyers: "While we do not comment on other company's products, I fully expect that augmented reality will fundamentally change nuclear imaging and diagnostics and will be very valuable in assisting doctors in the operating room.

"We are still in the very early stages of this technological trend and there has never been a more exciting time to be in technology in the healthcare and life sciences industry." (Also see "*GSK CTO, Boehringer Exec On The Metaverse And Pharma's Foot In The Door*" - Scrip, 9 Mar, 2023.)

"One of the main factors we consider when determining whether to adapt open-source or collaborate is whether we're able to internally build a solution that addresses our unique needs more quickly than possible than with an external one," Meyers said.

However, since the space is evolving so quickly, the approach is something that the company is "revisiting every 6-12 months," he added.