Real Expertise on Artificial Intelligence:
Views from Pfizer, Aktana, Veeva and Syneos Health Executives

Our thanks to Lisa Barbadora of Veeva Systems and Izzy Gladstone of eyeforpharma for their help in bringing this panel and content together.

Artificial intelligence is already a well-worn phrase, but few of us really understand what it means and how it will affect the conduct of our industry. Veeva execs Arno Sosna and Paul Shawah, Senior Vice President, Commercial Strategy, offered some background on AI.

Our panel of experts:

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"Machine learning is gaining broader traction in commercial operations, transforming the way the industry collects, synthesizes, and uses data."

In 2016, a stunning $8 to $12 billion was invested in artificial intelligence (AI), or machine learning, according to a report by McKinsey. The report also stated that healthcare is one of three industries seeing the greatest profit margin increases as a result of AI adoption, while Reuters reported that "the world's drug companies are turning to artificial intelligence to improve the hit-and-miss business of finding new medicines."

There are 9,500 drugs now in Phase One through Phase Three clinical trial development. This is a pretty remarkable number, but what's more impressive is that it's growing at a rapid pace, about 20% over the last five years: three-quarters of what's in the pipelines are considered potential to be first-in-class, and that is often where you see some of the step changes in bringing new, novel drugs and therapies to the marketplace. AI will help us get there even faster.

Early business uses of AI have proven successful in drug discovery, particularly in predicting molecule-target bonding, identifying new biomarkers, and uncovering new drug indications. Now machine learning is gaining broader traction in commercial operations, too, transforming the way the industry collects, synthesizes, and uses data.

New industry standards and development frameworks are making it easier and faster for software developers to build solutions for machine learning. As well, advanced computing hardware such as graphic processing units (GPUs) and chipsets are processing vast amounts of data faster than ever before—so much so that they are being characterized as bionic.

Actionable insights help brand managers, field reps, and medical science liaisons improve decision-making and take smarter actions to personalize their engagement with healthcare professionals and, ultimately, achieve greater commercial success.

It brings data together that we have on the commercial side—field data, digital data, patient data, claims data—unifying it to make sense and derive insights. But insights are only valuable if you can connect them with action.

How do you take the mass amount of resources that you have and apply them in a smarter way? How do you shift those resources up and down and turn up the volume and target different sets of customers and change your messaging and do that on a dime? It's about being more dynamic in your commercial model.

Here's a deeper dive into how that will happen, with the assistance of AI.

Why is healthcare one of the top industries seeing the greatest profit in artificial intelligence?

DAVID EHRLICH: The life sciences industry is a natural hot zone for the application of analytics and artificial intelligence. It's got an abundance of available data and complex business challenges, such as discovery of new compounds amongst millions of possibilities and a disconnected buying process that lacks typical pricing signals.

Heavy regulation has led to a conservatism reflected in the industry's belated adoption of new technologies and a reluctance to experiment with new business models or approaches.

During last decade, as blockbuster drug patents expire and as governments clamp down on pricing, life sciences companies face unprecedented pressure to reduce costs and improve productivity, making technologies like artificial intelligence ever more necessary for success. Add to this the shift from small molecule drugs to specialty, oncology, and orphan therapies aimed at smaller populations. Traditional mass-marketing will just not work in that environment—targeted, more personalized outreach is required.

ARNO SOSNA: There is significant potential for life sciences to leverage AI and drive greater effectiveness in commercializing new drugs and treatments. Life sciences is especially poised to derive value from AI because of the significant volume of data companies store and process—perhaps more than any other industry because of the stringent regulations to document everything. All of this data will be foundational to running advanced statistics and analytics. So organizations are in a tremendous position to use AI for predictive analytics and more data-driven decision-making across their commercial efforts. AI will enable the industry to automate commercial processes to improve efficiency in bringing products to market and keep pace with the investments they are making in drug development.

CHRISTOPHER BOONE: The potential for AI to transform the healthcare industry may be more

DROWNING IN DATA

DRUG DISCOVERY HURDLES

ACCESS TO HCPS

RELEVANCE OF MESSAGE TO TARGET

extensive than any other industry or vertical. There are a several factors priming AI to bring this paradigm shift for healthcare. First, the healthcare industry has always had a large amount of historical data. Providers, Pharmaceuticals, and Government agencies have large datasets often going back at least two decades that are now being leveraged. Furthermore, in addition to this historical data, we are adding and aggregating new sources of data at an exponential rate, such as: electronic medical record, genomic, payer, medication, and patient-generated health data from wearables and smartphones. Lastly, the ability to structure much of healthcare data and the adoption of data standards allows for the conversion of this data into machine-readable format that can be further interpreted by AI.

With these factors converging and creating large and diverse datasets, researchers and clinicians are strongly positioned to mine and analyze this data to spot patterns in the progression, diagnosis, and treatment of diseases. In addition to monitoring and treating disease, AI is also being used by healthcare administrators and managers to drive efficiencies and optimize processes across each stakeholder. In the coming years, I predict AI will touch and influence the work of every healthcare industry stakeholder and patients in some way.

AJ TRIANO: Unlike other industries, healthcare is a universal need that is under pressure to increase equitable access while reducing costs which makes it ripe for innovation efforts. Equally, AI has the ability to provide significant value at every stage of the healthcare

continuum. The word "significant" is important. The opportunity for innovation advancements in significant ways serves as a beacon for investment and innovation. As the healthcare AI industry matures, benefits may become more incremental in nature which could slow the influx of investment capital and resources as the perceived ROI diminishes.

What are some of the problems AI solves for us, in terms of efficiency and insights?

AJ TRIANO: We are drowning in data, which is beginning to have an adverse effect on patient mortality rates. Physicians are struggling with staying on top of the data at the patient level and the therapeutic category level. Medical information is projected to double every 73 days by 2020. This isn't just a matter of inconvenience.

It is actually a matter of health outcomes and mortality. In fact, the more years a physician is away from their residency, the more staying abreast of the latest data has been shown to contribute to an increasingly higher mortality rate with each year in practice (10.8% increase by 40 years of practice, rising to over 12% by 60). So, this isn't just an efficiency issue. It is an outcomes issue. AI has the potential to be an automated medical assistant that helps sift through all of the patient-specific data to look for clinically validated markers of risk or disease escalation, flag them for physician review and suggest potential therapeutic options that match the individual patient for the doctor to consider.

CHRISTOPHER BOONE: While it is still early days for the promise of AI to be fully realized, we see some nascent use cases of AI that hold the opportunity to lower costs and a deliver a higher quality of care. Specifically in the pharmaceutical industry, drug discovery is one area that is ripe for disruption. There are many aspects of drug discovery where AI can generate insights on large and complex datasets. Using analytics, deep learning, and pattern recognition, researchers can discover new targets, drug molecules or even discover novel uses of current drugs to treat diseases that these drugs were not originally intended for. The influence of AI in each of these areas of drug discovery can reduce the time, resources allocated, and overall cost for the pharmaceutical industry.

Another area of opportunity for AI in pharma is with advancing clinical trials. We see a great opportunity in our Real World Evidence team to use electronic medical record, genomic, device, and other nontraditional sources of data to match patients to clinical trials. Notably, AI can increasingly target patients most likely to benefit from a therapy. Equally powerful, we have seen that AI can also help mitigate potential risk and cost by reducing many of the inefficiencies we currently face with clinical trials, such as helping us better identify patients that may not be as well suited for the trial, segment those that may likely drop out of the trial, or work with patients who are noncompliant as soon as possible.

DAVID EHRLICH: Life sciences companies make huge investments in sales and marketing. A lot of this is wasted on communicating with healthcare professionals (HCPs) in ways that aren't actually helpful or effective, such as holding in-person meetings with HCPs who prefer emails or sharing information that is not particularly relevant to an HCP's specific patient population. AI helps companies figure out which information is most helpful, at what time and through which channel, for any particular HCP. This 1:1 personalization can generate a huge reduction in go-to-market expense, thereby freeing capital for additional research or price concessions.

ARNO SOSNA: One opportunity is to use AI to help sales reps make better, more well-informed decisions for improved customer engagement. AI can deliver highly relevant, data-driven suggestions, insights, and recommendations in real-time directly in a sales rep's daily workflow. This empowers sales teams with the right information exactly where and when they need it to drive better execution. Commercial teams can also use AI to ensure they are communicating with HCPs through their preferred channels.

Another opportunity for AI is to reduce manual data entry through image recognition. Tasks such as planogram monitoring will become much easier by simply pointing a device's camera at a pharmacy shelf to automatically identify and log products, as well as quantities. This will eliminate human error and allow field teams can focus on engaging with providers and pharmacists.

How will AI break down silos and streamline data analysis?

ARNO SOSNA: Commercial organizations capture a large volume of data across many siloed, disparate systems. AI will make it easier to identify patterns within large sets of data to streamline analysis and deliver rich insights back to the business. Having the right data foundation is key to leveraging the power of advanced analytics and AI. Machine learning will play a critical role in matching and cleaning data. Once data is cleaned and centralized in one location, cross-functional teams can work from the same reliable customer data, and AI can deliver deeper, more accurate insights across the organization.

DAVID EHRLICH: Efficient and effective delivery of the right information to the right HCP at the right time requires an omnichannel perspective. Brand managers can't focus on a marketing campaign without also considering what sales is discussing with their target HCPs and what those HCPs see when they visit the brand's web portal. In other words, to deliver on the efficiencies required, brand managers must be able to trade off high-cost channels for low-cost

channels in optimizing the channel mix for any given customer. Unfortunately, in most life science companies today, marketing and sales still report up through very separate organizations, and their activities are rarely well-coordinated. Effective use of AI will require active collaboration across these organizational boundaries.

It's been reported that 2019 will generate more data than the last 5,000 years. That's a lot of data to sift through and an impossible task for any human to do so effectively. AI helps companies analyze all available data and market dynamics to extract and deliver insights about what information an individual HCP wants, needs, and will make use of. Companies can use these insights to deliver the right information in the right way at the right time to the right person, boosting HCP engagement and improving care for patients.

CHRISTOPHER BOONE: AI can only scale with the wide availability of and encumbered access to large datasets. This was a significant problem in healthcare in the past, when these datasets were not readily available and significantly siloed. In addition, there were few data standards that those in the industry subscribed to. However, in today's environment, the ability to acquire and use data is one of the most important competitive advantages and this is often the driving force behind increased collaboration and efficiencies now seen in the industry. The increased demand for analytics and AI solutions is partly fueling the open data movement and enabling long established silos to finally be broken.

In addition to enabling these large data with increased collaborative efforts and efficiencies, the use of advanced analytics and AI solutions are also creating a demand for quality data. With data, we often say "garbage in, garbage out." With this increased demand for structured, clean data to feed machine and deep learning models, stakeholders now are incentivized to scale their AI solutions by increasing collaboration around data as well (both with internal and external stakeholders) and optimizing and streamlining their operations around how data is stored and shared. This increased collaboration is also helping streamline data analysis by democratizing the data across stakeholders and reducing repetitive or tedious efforts to access, clean, and generate insights from the data.

AJ TRIANO: This is a catch-22. For AI to work at greatest potential, it must have access to a variety of currently siloed data sources. That will require us to negotiate across P&L, policy and organizational barriers that are not incentivized well to share data. But, I believe we will see initial success in AI being used as a positive feedback loop to break down those silos in the interest of greater growth.

Beyond its obvious benefit to drug discovery, what are the aspects of AI that are particularly useful to sales and marketing?

CHRISTOPHER BOONE: AI has a powerful opportunity to completely transform the pharmaceutical industry's long-established commercial model. In the past, this commercial model was based on influencing clinician behaviors through education and by bringing awareness around your product. Now with many AI tools providing clinical decision support at the point of care, there is a change in clinical workflow and decision making that will require a shift in how the pharmaceutical industry develops and conveys its value. Most of this value generation, ironically, will need to be done using AI and analytical tools with real world and clinical trial data to prove the outcome improvement that these clinical decision support tools base their recommendations on.

In addition to a shift in the how sales and marketing channels interact with physicians, the ability for deep personalization and messaging that was not available in the past can also be applied by AI to target and build KOLs. In addition to targeting KOLs, AI can also be used to identify the right patients or physicians with a specific patient base. With this shifting environment and increased capabilities, you will see commercial teams building their AI capabilities (if they have not done so already) and will begin seeing commercial teams using data and the insights generated to further explore value based care opportunities.

AJ TRIANO: We are used to seeing molecules approved with companion diagnostics. We are now entering the world of AI as companion clinical decision support (CDS) tools, with the FDA approving the first AI-based CDS tools this year. In fact, we have now seen the FDA approve 12 algorithms in 2018 for use in-clinic and at-home to help diagnose and manage conditions.

In addition, AI is creating an opportunity for marketing teams to deploy just-in-time marketing materials to doctors who have patients that would benefit from their molecules. Alynylam Pharmaceuticals has used this with suc-

cess. Predictably, we are also seeing conversion of customer support materials to automated chatbots across all channel types. Perhaps one of the biggest efforts to deploy AI is being done by Celgene's Pharmacovigilance team to create a highly automated drug-safety system that allows rapid collection, collation and automated analysis of high volumes of data to identify potential drug safety signals.

ARNO SOSNA: The most significant benefit of AI in sales and marketing is the ability to drive more informed actions with customers. AI captures and analyzes data in CRM, such as customer preferences and sales performance, to deliver recommendations for what a sales rep or marketing team should do next. These customized recommendations can include which HCP to contact, the best channel for outreach such as banner ads on a mobile phone, or the optimal content and messaging. AI analyzes all of this data so sales and marketing can better understand how to reach and engage their customers in various situations.

Over time, AI technologies will evolve to automate these recommendations to help drive better engagement. As it becomes embedded into enterprise systems, AI will become more intelligent, fueled by increasingly more accurate and widespread data. This will enable commercial organizations to leverage real-time insights, as well as data that is segmented according to each individual customer.

DAVID EHRLICH: AI enhances the ability to target exactly what information is most helpful to which HCP, at what points in time, down to the individual practitioner level. As long as humans are involved in the information delivery chain, AI can also help individualize a salesperson's or marketer's call to action based on their unique behavior and skill set. The implications are that AI can be a powerful change management tool to help commercial teams be more responsive to market changes and evolving strategies.

How will AI improve messaging and demographic targeting?

DAVID EHRLICH: Different people tend to consume information in different ways, from channel preferences to timing to the use of specific language. AI accelerates the ability to learn and ensure the right combination of these elements to achieve the greatest impact with any particular HCP. AI will help companies to shift from segment-based marketing to 1:1 personalization.

ARNO SOSNA: By analyzing massive amounts of data and detecting patterns that humans cannot see, AI can help commercial organizations drive more personalized interactions. Individualized planning and messaging can maximize the chance of engagement with a specific HCP. With AI, commercial teams can segment their data to finely personalize customer engagement based on individual behaviors.

The result is marketing segmentations that take each customer into context and enable systems to predict customer behavior more accurately. In addition, AI can analyze actions taken in the past to determine what worked and in what context. These insights will empower sales and marketing teams to deliver highly individualized information in real-time for better customer engagement.

CHRISTOPHER BOONE: With the use of AI to improve messaging and demographic targeting, the first and foremost concern for our industry should be to maintain and prioritize security and privacy. With the right consents and permissions from both clinicians and patients, AI can be a powerful tool to help to uncover how demographic features can be used precisely target certain populations and creating what is often referred to as a "digital phenotype." Healthcare is drastically behind the consumer technology industry in this area. If you look to more sophisticated technology companies in this area, such as Netflix, Google, and Amazon, they have leveraged their easily accessible consumer data to precisely profile their demographics and have specific messaging or recommendations for all segmentations.

To further advance in this area, technology and data sharing partnerships will be essential for healthcare to leverage both the large amounts of data we have historically as well as the data that is currently being generated in biomedical research and care delivery. By doing so, these organizations can redefine and significantly improve their understanding and relationship with their patients or customers. In addition, AI can further be used to increase engagement and create consistent touchpoints to maintain value and a relationship with patients. Technologies such as chatbots and trained automated messaging, for example, can help maximize engagement, even with limited resources.

AJ TRIANO: Algorithms and advanced analytics practices are being utilized to understand influencer patterns, prevalence and projected under-diagnosis rates

to help better target non-personal and personal promotion to areas of greatest need. We can then engage traditional promotional techniques, such as geo-targeting, lead scoring and multi-channel message personalization to deliver tailored messaging to the right at audience at the right time with efficiency.

How will AI affect things like doctor and patient access, and patient centricity?

DAVID EHRLICH: With the right data behind the scenes, predictive technology can help proactively identify the best care paths for an individual patient, identifying which therapeutic approaches will be most effective and highlighting where access is most needed.

CHRISTOPHER BOONE: AI will be a necessary tool to target and segment patient population moving forward. With this segmentation comes a greater understanding of needs and the ability to deliver more personalized care. In addition to not only delivering a higher quality of care, I believe it can also improve patient access to care. One frequent use case for AI tools has been scheduling, where AI can not only take into account historical no-show rates and busy times, but also factor in conditions such as local traffic and weather.

In addition, with the increased use of telemedicine and remote care, data from these platforms will drive the adoption of AI solutions to bring further value to the patients and clinicians who use them. AI can also contribute to more a patient-centric experience and increase access by creating improved channels of communication, including the use of chatbots in sustaining patient's engagement, tracking and interpreting signals

from wearable monitoring devices, bringing insight and support to users' smartphones, providing real-time access to clinical data for physicians, automatically summarizing and visualizing patient's data. This way, AI may help reaching the ultimate goal of prevention with potential to increase patients' adherence and compliance rather than just treatment. Also, AI has the potential to both significantly improve and streamline the management of chronic diseases.

AJ TRIANO: We should expect to see validated AI begin to augment the physician at point-of-care with patient monitoring and clinical decision-making The ultimate goal is to free the physician up to focus more on the humanity of healthcare delivery over the data- and process-heavy practice management today. These tools can be paired with remote-care tools deployed to patients to help extend reach between visits, provide greater access to consistent streams of data and enable AI tools to surface key indicators as flags for physician review. We will not see AI replace physicians, and we know from a study we did earlier this year that patients don't want that. We may see AI-based triage to expedite patient handling, as the NHS has done with Babylon health. Ultimately, we should see these tools enable the physician to return to a more patient-centric practice.

Innovative programs to mine EHR and lab data can help expedite identification of patients who may be at risk for a condition to streamline diagnosis and look for patients who show markers of disease progression faster for better intervention timing. AI can then help match specific patients to the appropriate list of medicines

most likely to assist the individual, just like it is being used to identify patient and molecule matches for clinical trials now.

What is important to note is there are patient expectations for a change in healthcare interfaces as a result of AI exposure in general consumer interactions. General expectations of consumer-brand interaction are being fundamentally reshaped thanks to AI. Those expectations are carrying over in to healthcare interactions, as well. Almost 60% of consumers expect that their healthcare interactions today will become more like their shopping experiences with Amazon. This change in expectations of healthcare creates a significant opportunity for companies to re-think how they design interactions with their customers, patients and HCPs alike. We conducted a survey of ~1,000 patients in the US and EU to find out what they thought about AI in healthcare. We learned that patients understand that there is a role for AI in the healthcare delivery continuum. 64% of respondents are comfortable with an AI triage or nurse assistant, much like what the NHS has deployed with Babylon Health in the UK for over 1.2mm people. But, they want doctors on the other side of the algorithm making the final decisions. Furthermore, they want doctors playing a key role in the development of the AI tools created—a cautionary message we shared at JPM/Biotech earlier this year with investors seeking to capitalize on AI technology in healthcare.

ARNO SOSNA: AI will have a significant impact on how field teams access customers, particularly hard-to-reach HCPs. AI takes all data into account from previous interactions or communications with a particular HCP and deliv-

ers real-time insights. These can include why the individual has been difficult to reach, and what strategies or channels have been effective in similar situations. As a result, AI helps improve a rep's chance of engaging those doctors with a relevant message in the proper channel.

AI technologies will also act as an internal change agent, breaking down siloes between long-established units in the industry. Marketing and sales can come together, which will trigger better service for HCPs as well as patients in the long term. Since the number of patients is higher than the number of HCPs, the data challenge around improving patient access will be even greater. But the reward is clear—delivering new, life-changing treatments to patients faster.

What are some of the best examples you've seen of the application of AI in the healthcare marketplace?

ARNO SOSNA: Next best action recommendations and greater channel utilization are two examples of applying AI in the healthcare marketplace. For example, one pharmaceutical company used data science with CRM to improve the efficiency and effectiveness of using email. AI identified HCP channel preferences and guided reps on what message to communicate, when, and through which channel. The company not only increased rep usage and adoption of email, but also doubled the channel's performance.

CHRISTOPHER BOONE: Today, part of the challenge with evaluating AI solutions is separating reality from the hype. When

realigning AI expectations and capabilities, we have seen the best examples of AI are when you use these solutions to augment—not necessarily replace-- the work of clinicians, researchers, or administrators. This augmentation is seen in multiple ways. First, we see it through the automation of repetitive or extensive work that models can be trained to do easily. For example, in Pfizer's Real World Evidence team, we are exploring natural language processing and learning techniques to mine large electronic medical records, device, and payer data to make insights on disease. Likewise, in a clinical setting, adminsitrators could use AI to detect medical record mistakes, automate data input, improve scheduling, etc.

In terms of detection or diagnosis of disease, this is still quite early. However, one of the areas we have seen AI to be promising is with visual pattern recognition, particularly with medical images. There are many examples of using CT, MRI, and retinal images to diagnose a wide range of conditions from cancer to diabetic retinopathy to hypertension—all with varying accuracy. While most early examples of successful AI applications are in augmenting current workflows, processes, or decisions, it is not unreasonable to except total automation of their work as well once the models become more refined.

Where are we currently with AI, and where will we be five years from now?

CHRISTOPHER BOONE: Healthcare AI adoption is still in its early stages, but unlike other technology adoption curves, AI receptivity

seems to be moving at an accelerated rate-- only limited by what is technically feasible today. A few years ago, the lack of freely available data and insufficient data infrastructure made the adoption of AI solutions unscalable. Today, we have more access to diverse sources of data and advanced supporting technologies, such as more hosting capabilities and analytical tools. As a result, all healthcare stakeholders are increasingly beginning to evaluate their own strategies, opportunities to adopt AI solutions, and opportunities to bring value to the data they own. In addition, companies are grappling with how much of a leadership position they would like to take in this area. With the more visionary executives, you will see new projects that will explore a wide spectrum of use cases and how AI can be used for end-to-end drug development and commercial purposes.
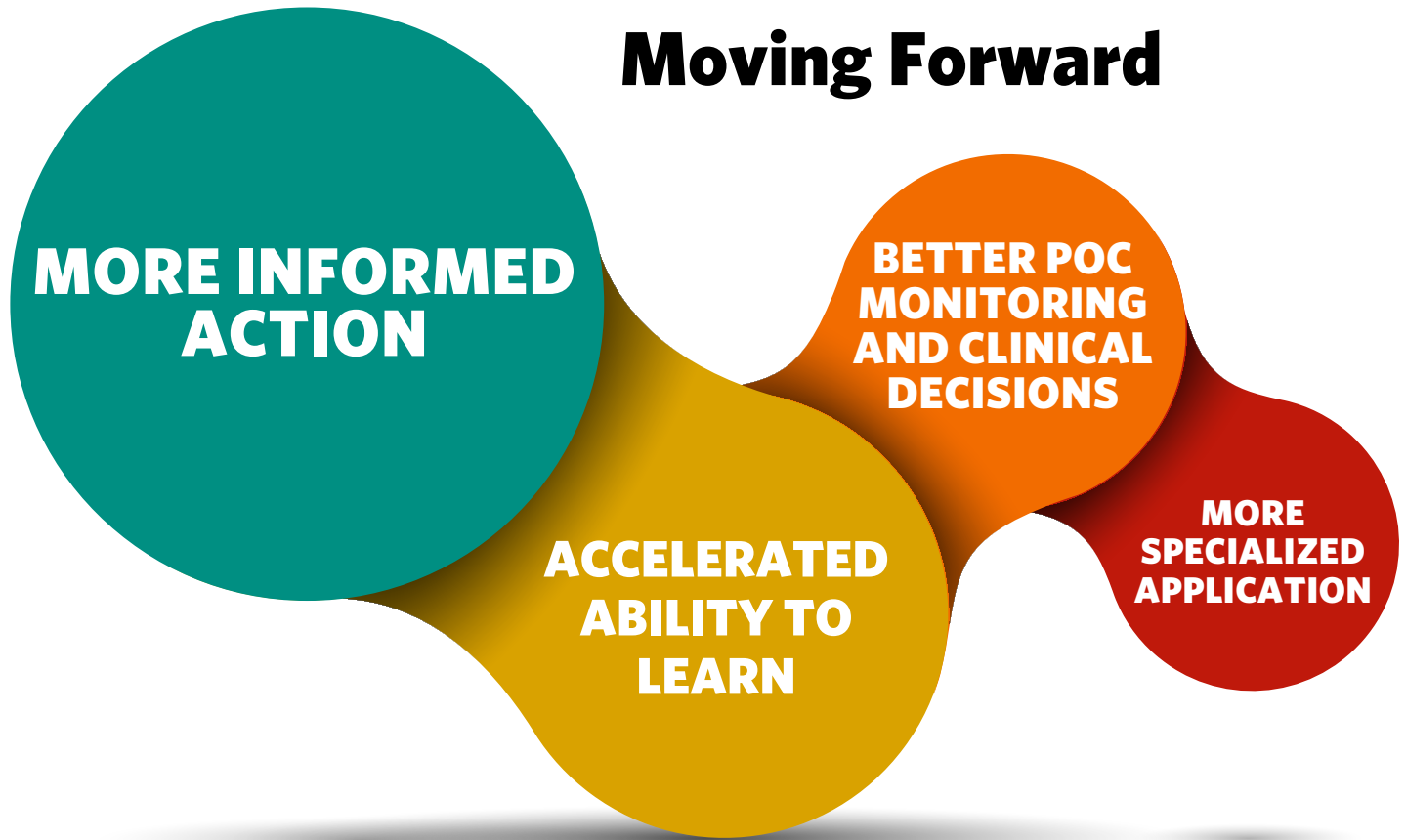
Five years from now, I believe some of our learnings and successes from these early AI projects and will be further applied and implemented at scale. The trends today favoring AI development and adoption will continue to accelerate and the hope we now have around the impact AI can bring will be much closer to reality.

ARNO SOSNA: We are currently in the era of specialized AI—meaning that while AI performs one task, it cannot execute any other tasks. To achieve more general AI that can complete a variety of tasks, every industry—not only life sciences—has a long way to go.

Over the next five years, we will continue to see specialized AI applications become more embedded in enterprise business software of

Moving Forward

MORE INFORMED ACTION

BETTER POC MONITORING AND CLINICAL DECISIONS

ACCELERATED ABILITY TO LEARN

MORE SPECIALIZED APPLICATION

all kinds. We see this happening already with Google Mail suggesting and pre-populating answers to emails—a capability that is pervasive and built within the application. Once this functionality becomes ubiquitous, companies will be able to automatically complete manual and repetitive tasks with built-in AI capabilities that have endless scalability.

DAVID EHRLICH: One of the most successful scenarios we have seen is a significant increase in the consumption of information based on simply changing the order in which the information is offered to an HCP. There are millions of possible permutations of messages, and companies can use AI to determine which ordering will result in the highest HCP engagement.

AJ TRIANO: We will see a concerted effort by both the healthcare industry and outside groups to push for regulation and agree upon rules of engagement. The Partnership for Automation and Innovation in Healthcare (PATH) formed in 2018 with an inaugural meeting focused on developing co-created guidance and governance to ensure meaningful AI application to healthcare. We will continue to see the rise of AI-based clinical decision support tools. I predict some of these will be created by pharma companies to support their molecules in the same way as we have seen companion diagnostic tools. We will see investment in AI to help expedite diagnosis and progression detection by both private industry, physician-coder entrepreneurs and healthcare giants. We should also expect to hear some resistance expressed out of concern for privacy and intended use. But, my hope is that the proactivity we are seeing to create governance will allow us to keep focused on the potential benefit, instead of becoming mired in theoretical risk.

DAVID EHRLICH: We are fast approaching the "Trough of Disillusionment," as expectations for AI's impact have grown rapidly beyond its capability today. Many people think you can simply throw a bunch of data into a bucket, layer AI algorithms on top, and get all of the answers you seek. We may have the ability to do that five years from now, but today's most effective use of AI requires investments in data preparation, clear framing of questions to be addressed, and painstaking model-building.

MEET OUR PANEL OF EXPERTS

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Vice President, Head of Real–World Data and Analytics Center of Excellence
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The Global Real-World Evidence Center of Excellence is responsible for expanding the strategic use of real-world data across the enterprise, enabling effective real-world data access and flow throughout the organization; increasing real-world data innovation; improving data quality, reliability, and availability; and establishing RWD governance models. Previous to his tenure at Pfizer, Christopher was a health informatics professor at the University of Cincinnati, VP of Real World Informatics and Digital Strategies at Avalere Health, National Director for Outpatient Quality and Health IT at the American Heart Association, and a senior consultant at Deloitte Consulting.
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PFIZER is a leading global healthcare company, with a large suite of products focused on internal medicine, rare diseases, vaccines, inflammation and immunology, and oncology.

DAVID EHRLICH
President and CEO
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David is a seasoned Silicon Valley veteran who's helped start, grow, and lead numerous successful technology companies. He has helped organizations of all sizes establish business models, build product/marketing strategies, and meet their go-to-market challenges. Prior to launching Aktana, David was executive in residence with Mohr Davidow Ventures, and before that served as CEO of ParAccel, an early pioneer in the field of analytic databases. David also held senior level positions with NetIQ Corporation, Visual Networks, Inverse Network Technology, and McKinsey and Company, where he played a leadership role in the firm's Asian telecommunications, electronics, and media practice.
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AKTANA empowers life science sales and marketing teams to provide beneficial information to the physicians they serve, using data-driven suggestions and insights,.

ARNO SOSNA
General Manager
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After working in IT roles at Cap Gemini Ernst & Young, and IDS Scheer, Arno joined Veeva in 2011 as product management director for Europe. He move on to positions as Senior Director, VP and General Manager of Product Management CRM and is currently General Manager of CRM and Nitro for the company. Arno has also served since 2017 as CTO of Align Biopharma, a life sciences industry standards group, established to make it easier for healthcare professionals (HCPs) to work with life sciences.
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VEEVA SYSTEMS' industry cloud solutions provide data, software, services and an extensive ecosystem of partners to support critical functions from R&D through commercial. Veeva helps companies of all sizes bring products to market faster and more efficiently, and maintain compliance.

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AJ has a 15-year career history in healthcare technology and communications with a track record of delivering innovative technology pilots in healthcare. His understanding of how to navigate the tension between leading-edge innovation and regulatory compliance achieves results for clients and their customers. Leveraging his passion for UI/UX and connected health technology, AJ spent the last two and half years working closely with Apple and major academic research institutions and hospital systems to deliver mClincal research using Apple's ResearchKitTM and remote care programs using Apple's CareKitTM frameworks.

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