MIGHTY

CAPITAL

Sorcero Podcast Series:

How to Build Great AI-Powered Products for Life Sciences

Foreword by Sorcero CEO Dipanwita Das

Life sciences products have saved billions of lives and changed the course of human history. The development of antibiotics and vaccines, the discovery of insulin, the invention of so-called miracle drugs, and many other breakthroughs have doubled life expectancy globally and treated once incurable diseases. Never has the importance of life sciences products been more on display than over the last two years, when mRNA vaccines for COVID-19 went from theory to reality in under 100 days. This acceleration enabled the delivery of billions of doses of treatment in the middle of a raging global pandemic.

The sudden prominence of life sciences has supercharged the industry into a hotbed of technological innovation. Some of the largest enterprises in the world are transforming from pill companies to platform companies. They are working to transform patient outcomes with novel evidence before and after a product is approved and on the market.

For my part, as the CEO (and co-founder) of Sorcero since its inception in 2017, I have seen the industry's transformation firsthand. It is clear that the Age of Product has arrived for life sciences. Clinical and scientific data delivered alongside drugs and devices are now as essential as the therapies themselves. Complex disease treatments and precision medicine are all data-hungry, requiring physician-researchers to harness ever-increasing flows of information among clinical trials, clinicians, and real-world data from patients.

Thus, the use of data to make life sciences products effective is one of the most important — but least understood — developments in modern medicine. Sorcero is honored to play a role in powering this development through our omni-channel analytics and AI platform, Clarity, which enables our customers to measure what matters and informs the most important decisions for medical treatments, impacting billions of lives.

For this podcast series, I wanted to talk to the people working in key roles across this medical transformation. On the front lines, so to speak, are the medical affairs teams who have taken up the life sciences mission and now shape the adoption, appropriate use, and novel applications of therapies once they are on the market. Staffed by experts with advanced degrees in biomedical fields, they are responsible for educating prescribers, generating evidence and insights into the use of therapies and the unmet needs of patients, harnessing rapidly changing science, and much more. Yet they still lack the tools and platforms purpose-built to meet their needs.

In these podcast conversations, the importance of medical affairs is articulated elegantly by Donna Holder from Daiichi Sankyo International — a highly innovative cancer treatment company — and Luca Dezzani, M.D., one of the best known global medical affairs executives from the world's largest life sciences company, Johnson & Johnson. Both of these guests address questions of why medical affairs are important and why the time to make a significant difference is now. They also speak to new technologies and how life sciences is rapidly adopting emerging tech-driven solutions.

Jacob LaPorte from Novartis BIOME also addresses these questions in another rich conversation. We talked about innovation and what makes a great product for the life sciences market. One of my favorite parts of our discussion focuses on guidance to product owners and managers who are building software and analytics solutions for this market.

The series also addresses the critical issues of health equity and ethics, both AI-related and not. While all of my guests address the question of equity, Alice Choi of McCann Health is possibly the most eloquent. She discusses how people working in healthcare can improve equity through better clinical trial design and how the advent of decentralized trials is enabling a move toward more equitable healthcare. Donna Holder also speaks to health equity as a part of the core mission of medical affairs while seeking to reach optimal patient outcomes.

Several of these conversations highlight truly new technology like web 3.0 and blockchain. Luca Dezzani, for example, makes an effective case for the role of new tech in better trial designs, better data protection, and improved patient outcomes. However, he also reminds us that this will all take time. He lays out a 36- to 48-month timeline for us to start to realize the true impact of medical analytics and AI.

On the investor side is Tara Bishop, GP at Black Opal Ventures. As a physician-turned-software-entrepreneur-turned-venture-capitalist, Tara addresses the need for diversity and representation in VC — as well as in entrepreneurship — if we want to build a more equitable healthcare system. She also offers an optimistic outlook for the future of markets in life sciences and healthcare, including glimpses of products that will be truly transformational.

My sixth and final conversation, with Kevin Novak — Rackhouse VC and the former AI leader at Uber — is in equal parts informative and hilarious. We discussed the positioning, pitching, and building of AI-powered products. Kevin lays out precisely where in the market AI-powered products can make a real difference. I also enjoyed commiserating with him on how painful it can be to explain absolutely anything having to do with AI.

With this collection, I hope to give insights to product managers, life sciences innovators, medical affairs professionals, and investors about where the market stands and what technological innovations can really make an impact. Here's to improved patient outcomes!

Dipanwita Das
CEO & Co-Founder of Sorcero

01 Daiichi Sankyo's Head of Global MSL Excellence on Improving Data, Equity, and Tech Partnerships in Life Sciences

This is the first conversation in Sorcero's podcast series on building great AI-powered life sciences products. Here, Sorcero CEO Dipanwita Das spoke with Donna Holder, Head of Global MSL Excellence at Daiichi Sankyo. They began with the question of what MSLs do, exactly, and why they are so important in the emerging field of life sciences products.

MSLs (medical science liaisons) are highly technical individuals who work in the field with researchers and healthcare providers, and usually comprise the biggest part of medical affairs teams. They play a critical role in representing companies with physicians and gaining insights around unmet needs. In her role, Donna works with the leaders of medical affairs organizations within Daiichi Sankyo, including region heads and MSL leads to uplift MSL capability.

Donna first speaks to the importance of raw data and the fact that algorithmic solutions are only as good as the information they are fed. Second, Donna addresses bias and equity, and the efforts that the industry is making in designing more diverse equitable clinical trials. And third, Donna urges the importance of partnerships and the idea of co-creating life sciences product solutions. Life sciences is a changing and emerging field. Nobody has all the answers — and that's a big part of what makes it exciting.

◉ On the importance of knowing your audience

Any product manager understands the importance of knowing the customer. And one of the main customers for the medical affairs function is the healthcare provider.

When Donna began working as an MSL, her team had limited information about healthcare providers. Now there are tools providing profiles and other data to help them have a rich conversation with their customers.

Another set of useful tools is in the area of insights. We hear this word all the time. But insights are only as useful as they can be tracked and understood, or as the patterns and trends can be extracted. Previously, Donna and her colleagues would do this manually, which is not just slow, but can leave out important information. Tools are now being designed to surface those trends and patterns early on and help Donna and her team make excellent decisions.

Donna says, “One of the areas that we’ve seen a rapid growth, and that we’re starting to use, is the ability to profile the individuals that we’re meeting with. There’s a number of different profiling tools. In the past, we would go to Google. We would ask through our networks. We would look on the Internet to understand who we are seeing and what’s important to them.

“Now with the depth of information that we have, we have a better understanding — through claims data, through new types of data — of what’s important to [the healthcare providers]: who they’re seeing, what type of patient populations they have, what level of trials they’re involved in. So we have much deeper information, which will really help us provide that contextualization…

“Moving forward, we need even more tools that are going to help us define and bring insights that will get deeper into what’s important for them. And then also bring back to the organization insights so that we can uncover some of those unmet needs. And those tools today, we’re doing a lot of that [manually]. But if we have tools that can rapidly identify insights and patterns that we might not be able to see manually, or that are taking up a lot of time, it’s going to be so useful in order to contextualize and bring value to what’s most important for them and their patients.”

On ethics, artificial intelligence, and equity

The quality of an algorithm — what it does and does not, what it suggests and does not — is entirely informed by what it has been fed. To use a colloquial phrase: garbage in, garbage out. Product leaders in the life sciences space thus have a huge role in informing the end result and efficacy of any AI or machine learning.

As Donna says, “We need to help feed the AI so that it starts to recognize the patterns and it builds on that. And so I want to understand better how we don’t create bias in the algorithms as a pharmaceutical company so that it is always pointing to our product [as] the best one.… MSLs, while they do have those deep conversations, they are regulated. So we do need to figure out as we’re building these tools, and that’s why it’s important for medical affairs teams to work with a partner, or an external partner, in building these tools to make sure that we don’t have that bias and really understand how to do that.

“When it comes to equity, something that I think has been a big part of the conversation with our R&D organization, is diversity in clinical trials. So ensuring that we’ve got diverse patient populations, and that we’re going to sites that have underserved communities, that have diverse patient populations, that are geographically distributed. And doing that, a lot of times our R&D organization is incented to get trials done. We want to get our products out to market as quick as possible. So going to sites that we know will produce good quality results is important.

“But now [we’re] able to use data to understand: What are the patient populations the sites are using? Where do we need to ensure that we’re getting data from all the types of patient populations, to make sure they’re represented so that we get data that can be representative of the patients who will be using our products?”

On the importance of partnerships in biotech

In life sciences, partnerships are truly important. Tech companies are working on novel solutions to novel problems in a changing market. This makes it essential to have input from multiple perspectives. The best case scenario is for tech, pharmaceutical, and medical teams to work together and co-create product solutions together.

Donna says that, above all, tech companies committed to transforming healthcare and patient outcomes must listen. “Listen to the pharmaceutical company,” she says, “what’s important and what their needs are. And really understand the roles and what it is that the medical teams do. If [tech companies are] trying to push their own agenda, it can work in the beginning. I hear [about] all of these fancy tools, and it sounds great. But once you start to scratch the surface, that’s when you really need to partner and deliver and develop something that is going to work, [and] that’s going to be compliant.

“So I’d say that that partnership — and I keep saying that over and over — is incredibly important. And it’s going to be important for them to have some knowledge, and I would say ensure that they’ve got people from the industry on their teams. If I work with a team that doesn’t have anybody that has a [relevant] perspective, that’s walked in [those] shoes, I don’t want to spend a lot of time educating them.”

02

McCann Health Medical Communications COO on Data, Representation, and Putting the Patient First

In the second conversation in this series, Dipanwita Das sat down with McCann Health MedicalCommunications COO Alice Choi. Their wide ranging discussion covers a host of issues, from how best to communicate scientific data in a world of increasingly accessible (but also increasingly complex) information; how to improve data sets and medical treatments through better representations in clinical trials; and what it means to truly put the patient first.

A recurring theme in the discussion is the increasing volume and complexity of data in life sciences. This makes AI extremely exciting as a technology that can power software products that support better decision making, augmenting — rather than replacing — the work of human experts in the field and laboratory.

On evidence-based scientific storytelling

Communicating science effectively is all important, whether in public health or in the prescription of drugs and products. Effective communication is core to the work of Alice Choi — and of medical science liaisons as well, with whom she works closely. Even as medical data becomes much more generally accessible, it is still incumbent upon those working in life sciences to share an effective narrative. Here, Alice introduces the concept of evidence-based scientific storytelling.

Alice says, “Over the past several years, and this even predates the pandemic, the pharmaceutical industry has been moving to a much more transparent model. We are moving away from a hard sell to a more scientific, evidence-based approach.

“And this is where the role of the medical science liaison teams comes in. The medical liaison now is becoming much more about a two-way scientific exchange. And that is a much more credible option than just having a raft of salespeople knocking on the physician’s door. I think what MSLs are probably feeling is the desire to be as evidence-based as possible. And that can be challenging because of the raft of data that one has to go through to stay current. That can be quite demanding.

“But then also, you have to combine it with the ability to have a narrative and exchange, and have a dialogue. And I think this is where the importance of what I’m going to call evidence-based scientific storytelling really comes in. So there is definitely a shift, as I said earlier, from that hard sell, knocking on doors to, ‘Hey, let’s have a robust scientific exchange.’”

On representation and data

When it comes to patient data being collected in a clinical trial scenario, Alice says researchers need to ask hard questions. First, Alice asks, “Is that actually representative of the patients who are suffering from that condition? And very clearly, there is still a huge problem with representation in clinical trials. I think that’s massive.”

Alice continues, “And there’s a lot of work that needs to be done there. It’s something that regulatory bodies like the FDA are very conscious of. They have a whole governance document on this. And it’s not just the under-representation in clinical trials that we need to be concerned about. It’s also in the treating population, and those who are communicating the data.

“It’s something that I do feel quite passionately about. And it’s not just to do with gender. It has to do with race, social mobility, ableism, and hidden conditions — things like neurodiversity. So I think there is a whole heap of work to be done there that we need to try and tackle collectively.”

On what patient-centric organizations do differently

Patient-centric care — in other words, putting the patient first — has become something of a buzzword among healthcare organizations. But what does it actually consist of in practice? For Alice Choi, it means several things specifically, from better communication with participants during and after clinical trials, to transforming technical nomenclature into plain language in order to better communicate published research.

Alice says organizations can talk the talk, but "you want to see what's actually happening. For me, that would be seeing patients have the opportunity to be involved, right from the clinical development process. It would be much more open dialogue and engagement around their participation in clinical trials. [And] what happens afterwards? Sometimes the communication just stops there. A lot of participants in trials would love to continue the dialogue, hear more about what actually happened to that trial.

"I think another nice thing would be acknowledgement of their participation and contribution. And I think if you were to actually do a search or review a lot of peer reviewed publications, I'm not sure that the overwhelming majority would thank or acknowledge the patients that actually took part in that trial and helped generate data."

Next, "on the communication side … peer review data can be notoriously difficult to access, and digest, and understand. Are we actually [trying] to make that more accessible for patients? Is a company actually committed to publishing their data in open access journals, rather than [via] subscription-only, behind paywalls? Is that company actually going out of their way to produce enhanced content alongside that data? And by enhanced content I'm meaning things like nice little slide decks, video clips, infographics to make that complex data more understandable.

And as a final thought, [a]re companies taking care to always produce a plain language summary alongside some of their more complex data so that patients, or even busy healthcare professionals — are we helping them absorb the data in the quickest, fastest, most meaningful way possible?"

03 Black Opal Ventures Founder on Building for Equity in Life Sciences Products

In episode three of this series, Dipanwita Das talked with Black Opal Ventures Founder Tara Bishop. The conversation touches on the discrepancy (sometimes) between buyers and users in life sciences, and what product people need to know about that. They also spoke about equity and representation in life sciences, and the potential of data (and AI) to remedy those problems through increased personalization. And finally they discussed Tara's venture capital mission of investing with an equity lens. Increasing the diversity of people involved in building life sciences is important because, as Dipanwita says, if you're not seated at the table — you're on the menu.

On the buyer-user dichotomy in life sciences markets

When building products for life sciences markets, a key consideration is the discrepancy between buyers and users. Users are most interested in technical features and whether those things will help them do their work. On the other hand, buyers are looking more at dashboards, reports, and expertise in the professional services that will make it easier for them to evaluate the business benefits of adopting that particular solution. So how does a product manager deal with this when designing products for life sciences and healthcare?

Tara says, "In a hospital system, with many of the software and the technical products that are sold to healthcare systems, the users are nurses and doctors. People on the front line who are actually doing the work. And these tools are meant to help them become more efficient or effective at their work.

"When you think about the buyer of that product, though, it's someone who is at the decision-making level. There has to be a value proposition. Can they actually cut costs by using this kind of product? Can they generate more revenue? And it's not always about revenue and costs and financials. It may also be, can we actually get to better care and put ourselves at less malpractice risk? Or less risk of making mistakes? Can we improve quality? There are lots of factors in there. But one of the most important is the ROI.

"That's the dichotomy that I see with the users versus the decision makers. And as you said, the decision makers may or may not be monitoring things on a daily basis or a weekly basis. But at the end of the day, there's some evaluation — quarterly, annually — where they would say, Is this product actually working? Is it generating the ROI that we expected?

"The end user is the person who you're building the technical and services product for. But you always have to have an eye on the decision maker of that organization and the needs that they have, too."

On the potential of data to produce more personalized healthcare outcomes

As discussed in previous conversations in this series, a major problem with any machine learning system is that it is only as good as the data inputs. Garbage in, garbage out. When it comes to healthcare datasets, a common problem is that data is not representative of population diversity. So could more data be the solution? Possibly, says Tara Bishop.

Tara explains, “We know that a lot of the data that are used for guidelines, that are used in clinical trials, are not representative. They do not always include all groups. And we’re potentially getting results, seeing outcomes, and [making recommendations] based on biased samples. The more and more we integrate data, the more and more risk there is that we just continue to propagate the issue of lack of representation in all things healthcare.

“That being said, I actually think there’s a real silver lining and opportunity here. When I think about clinical guidelines and the way they are structured, the ability to personalize while still being very evidence-based, is difficult to do in healthcare. And particularly if that evidence is based on biased samples, on non-representative samples, making those decisions almost feels like you’re going against the grain because the guideline says something.

“If we get to a point where, in fact, we can generate more unbiased data, we can actually generate more effective and more personalized decision making. Whether it’s to do a test or to do a treatment, and base it on much larger sets of data, a lot of real world evidence — data, things that are sitting in the healthcare systems and the payer systems and the pharma companies. We actually might be able to use AI to really improve and reduce the kinds of disparities that we do see in much of the trial world in healthcare.

“So there’s a potential for both opportunities. The risk of it actually getting perpetuated when datasets remain very focused on particular populations and lack of representation from other populations. But there’s also potential where, in fact, we can actually get much more data and then get much more pinpointed in what people are doing and what recommendations are on a very personalized level.”

On investing with an equity lens

In the final portion of their conversation, Tara speaks about her diverse experiences as a physician, an academic, an entrepreneur, and now a venture capitalist. In this latter role, a main focus is on equity when it comes to funding portfolio companies.

“We have an equity lens in terms of our fund. We think about the success of companies. But we also think about the impact that we’re having on global health outcomes. Are the kinds of problems that our portfolio companies are solving pushing the needle to improve healthcare? To improve access to care? To reduce disparities in care? These are all important things that we look at when we make a decision about an investment.

“Investing in venture capital isn’t the most representative field. There aren’t very many women in it. There aren’t very many women of color in it. There’s a lot of momentum and work being done to increase representation in venture capital. But we also feel that that’s an important area where we can have impact, whether it’s our ability to sit on boards, or to tap into our networks to bring in management teams or board directors who represent different parts of our demographics.”

04 Novartis BIOME Co-founder & Global Head on Digital Health and Technology

Episode four of the Sorcero podcast features a conversation between Dipanwita Das and Jacob LaPorte, Co-founder & Global Head of the Novartis BIOME. To begin, Jacob explains what BIOME is, and how it acts as something like an API for pharmaceutical company Novartis. Next, Jacob discusses how the present moment is particularly ripe for an explosion of digital health, due to a confluence of factors including maturing technology (like AI and Internet of Things [IoT]), implementation of key regulations, and the pressure of the pandemic to streamline healthcare delivery. Finally, they speak about what it means to build for scale in healthcare tech, and why data can be a common pitfall.

◉ On how BIOME is like the API for Novartis

Jacob first addresses the need for innovative solutions when navigating legacy companies through the digital transformation. He explains, “Many different companies throughout this ecosystem have placed a pretty big emphasis on transforming digitally. But of course, the problem is that the industry itself is not digitally native. So we’re almost always relying on an external partner, to some extent, to help us co-create these digital solutions.

The complication becomes how do you truly begin to co-create effectively if you’ve never done that in this area before? And that was really the question that we have started to answer with the Novartis BIOME.

“The best way I can describe it — to use a programming analogy — is we’re sort of like the API, for Novartis, into the digital health ecosystem. So, like any good API should do, it allows us to interact, write effectively, and exchange knowledge information. But obviously going beyond knowledge and information, and being able to plug in external capabilities that we really wouldn’t be able to build

with our own unique knowledge about healthcare systems, medicines, life sciences, to ultimately bring together and build something new that advances healthcare in some way.

“There are obviously a lot of complexities behind that. It’s a lot of process around, How do you find the right partners for your problem statements? How do you actually bring them into Novartis? … How do you, on the back end, create platforms? And [how] to actually rapidly create, test, and learn these new solutions?

“So we do all that. We operate in about 15 locations. [W]e believe in meeting the innovators in their ecosystem and really being a part of the ecosystems and contributing to them as a means by [which] we actually integrate and deliver our API, if you will.”

On why the time is now for digital health

From the development of machine learning to the Internet of Things, innovations over the past decade have set the stage for the flowering of digital health today. In addition to the maturation of technology, more recently the pandemic has jumpstarted digital innovation across the board.

Jacob says, “Innovation is driven by necessity, right? If you have something that’s working, you’re very unlikely to switch to something else because you perceive the risk. If you have something that’s not working at all, like some parts of our healthcare system during the height of the pandemic, you’re willing to try a lot of things. And that’s what we saw happen.

“As a result of that, you started to see some temporary policy shifts that have supported that. The embedding of digital health solutions in the US, for instance, is getting rid of state licensed insurer agreements [where] physicians had to get licensed in every state in order to practice, which really had impeded telemedicine. We’re starting to see that policy being extended. Could it be extended so that … that license or role is completely changed over the long term? That has yet to be determined.

“You’re starting to see other policies that were put into place. Again, I’m speaking from a US-centric point of view. But some of the stuff that was put into place with the 21st Century Cures Act [is] now coming to fruition in 2022 and 2023. EMR companies and other providers that amass data are now being required to create standardized APIs to be able to exchange these data. But importantly, that is being enforced now, so they’re having to actually do it. So I think because of these near term catalysts, we’re going to see an amazing period of digital health where we’re going to be able to, hopefully, more rapidly exchange data. [And] some of these other policies [are] curbing some of the barriers to entry.”

On building for scale in healthcare platforms

Building technology for scale, especially when it comes to AI in healthcare platforms, can run into problems of standardization. Jacob cautions product innovators to think carefully about the data.

He says, “My general rule of thumb is, when you’re building for scale, thinking about an advanced analytics platform in healthcare, you need to be really concerned about what is the data that you’re looking at. Is this data that you’re generating off your platform — which allows you a lot more control over the type of data, the structure of the data, the ontology of the data — that then makes it a little more amenable — or much more amenable, as it may be — for ML? Is it data that someone can actually easily provide to you? Is it operational data that people typically track in very similar ways? Or is it data that is very hard for people to give you access to? Either because it’s governed by laws and regulations, [or] it’s fragmented.

“We’re usually talking about, in machine learning, in this context, healthcare data and being able to predict or help diagnose. The problem is we tend to take a very small set of data that someone has access to. It produces really promising results. But then what happens? They can’t get access to other data as easily. Or the data is fragmented. It’s structured very differently than what it might have been in the original context. And that makes it very problematic to scale a lot of these clinical decision support tools that I see out there. So that’s what you have to take into mind.”

05

Johnson & Johnson VP of US Oncology Medical Affairs on Working at the Nexus of Medical Innovation

For the fifth episode in the Sorcero podcast, Dipanwita Das sat down with Johnson & Johnson VP of US Oncology Medical Affairs Luca Dezzani, M.D. The conversation centers on the idea that medical affairs is really at the nexus of medical innovation right now; medical affairs professionals are forging key partnerships with stakeholders in tech and medicine, directly impacting the care of medical patients in critical fields like cancer treatment — which is Luca’s area of focus.

Luca explains why he made the shift, initially, from oncology to medical affairs. He also explains why life sciences organizations are becoming platforms, rather than simply deliverers of pills. And finally, he speaks to what product people need to know about working with medical affairs: namely, partnership is key.

On the unique opportunity of working in medical affairs

Medical affairs professionals play a key role in healthcare. At a time when life sciences technology is advancing rapidly, medical affairs is at the confluence of technological data coming in and medical information that needs to go out to patients and stakeholders.

As Luca puts it, “Medical affairs, and medical affairs professionals in general, have a unique opportunity to really be at the center of the healthcare ecosystem. If you think about it, medical affairs, whether you are in the field or working in home office capacity, you do engage with top opinion leaders in the particular therapeutic area you cover. But you also engage with medical societies, with patient advocacy groups, with payers, and with policymakers.

“And then internally … within the pharmaceutical company, you engage with other players in developing new medicines for patients, such as research and development. Or clinical development, commercial sales, market access. So if you are a medical affairs professional, you really feel that you are somehow the glue, or definitely at the center of this entire ecosystem that is striving for making a dent — in my case, in cancer care.”

On the shift from pills to platforms for life sciences organizations

In the past, life sciences companies tended to focus on research and development of specific medications or pills, and getting those into the hands of doctors treating patients with matching ailments. Now, the work of these organizations is much more comprehensive — and often focused on prevention.

Luca explains, “We don’t have to have patients to actually treat their cancer, in our case. We can start much earlier with early detection [and] screening. So we can actually act on society at large and on people that may not be patients yet so that we prevent them from becoming patients in the future. So that’s a very easy example of how platforms work. That also captures the kind of diagnostic component, the screening and precision medicine component.

“The next big thing is very much the precision medicine piece. The idea that we then do have a much clearer understanding, from a biological standpoint, of the cancer or the disease patients have. And we can be much more targeted in addressing that particular mutation or targeting that particular alteration that is causing or driving cancer.

“Moving into the more advanced stages, in my case in cancer, there you have an entire ecosystem that is actually touching patients one way or the other. You obviously have the healthcare providers. That’s an easy one. Then you have manufacturers, like pharmaceutical companies.

But then you have other stakeholders. You have, obviously, the payers, and they play a key role in giving access to medicines to patients. You have policymakers. And then you have the entire ecosystem of people that help patients. As I mentioned earlier, patient advocacy groups. You have caregivers.

“Bottom line: the idea is, it used to be, in the past, a one-on-one relationship between the patient and the doctor. And to a certain extent, that’s still the case. And you had manufacturers and other players providing the ingredients to that relationship. Now it’s becoming much more of a seamless integration of different stakeholders across the entire ecosystem. So that’s why we are now focusing more on platforms of care, rather than point of care, or just bringing a pill to a patient.”

On why partnership is key to building life sciences products

Most medical affairs professionals have a background in medical science, not technology. Thus, when it comes to finding the right product solution or new technology, collaboration and partnership are paramount.

Luca says, “We need to acknowledge what we know and what we don’t know. We are not IT experts. We are not technology experts, and we need to partner with people who are experts in those fields. So to me, this whole concept of finding the right partner for your journey is key. [And] if you think of the other way around, that’s also the case. When you speak with technology people, obviously they do understand technology deeply. But they may not necessarily understand life sciences as we do. So that’s the real definition of partnership and potentially synergy.

“Probably even before looking at what particular solution or technology that vendor is working on, the most important thing I’m really looking at is the mindset. Can I see myself working with this group, in partnership? Can I see us growing together? Can I see us building this solution together, so that we will both learn and we will both get something out of this out of this journey?

“And of course, then, it needs to be robust technology. And all the other more specific areas that you tend to evaluate as you choose your right partner. But again, to me, the most important thing is very much this mindset of,let’s figure it out together. Let’s work together. Let’s grow together. Let’s make it happen together.”

06 Rackhouse Venture Capital Founding and Managing Partner on Funding Artificial Intelligence in 2022

In the sixth and final episode of the Sorcero series on building AI-powered life sciences products, Dipanwita Das spoke with Rackhouse Venture Capital Founding and Managing Partner Kevin Novak. First up was the question of why funding in life sciences suffers from lagging expertise on artificial intelligence (AI) technology. They also talked about the reality that AI is still very early in its development, and why futurecasting — the ability to have increasingly accurate forecasts for complex scenarios — may be a generalizable principle with wide application in machine learning technologies. Finally, the conversation considers the issue of ethics,including the question: even if AI is better than a human being in a certain area, when and how do we consider it good enough?

On the impact of lagging expertise in life sciences funding

When an artificial intelligence founder comes to a venture capital (VC) firm for funding, there are many considerations to keep in mind. Top of mind is demonstrating that this is a good product with good product-market fit. But there is a major obstacle: many VCs might not have AI experts on staff to accurately assess the technology at hand. Not only that, but since a VC is involved in a systematic exercise of building out a portfolio, there is only so much time to assess a company.

Kevin says founders would be well-served to understand that diligence process a bit more. And they should also find compelling ways to present their technology to non-experts. He says, with AI there is the fundamental question: “What is this technology? Is it differentiated? Are their forecasts for how this product is going to evolve realistic?”

He says, “When you don’t have a lot of domain expertise, that last bucket of diligence on a hard AI product takes a ton of time. If I’ve never seen natural language processing before — and there’s this thing called embeddings — if I have to go from first principles all the way to ‘Is this company investment grade?’ in 40 hours, most firms just throw up their hands.”

Due to a lack of technical expertise, many VCs simply invest in startups similar to other companies that have been invested in by competing VCs. “So,” Kevin says, “you end up with like a bunch of over-competed segments [with] companies that are similar to each other.”

“Rackhouse has a very technology specific thesis to make my diligence process easier. But also, it’s just something I personally love. And we’re very industry and sector agnostic. And the reason we’re able to do that is because 80% of my diligence time is spent learning about the industry, in the sector and all the other stuff. So I think the lack of creativity in investing and the lack of domain expertise are pretty intrinsically linked, just from the nature of how a firm diligences a company.”

On why AI futurecasting should get investors excited now

Access to data is not a problem in 2022. There are many data points about any given topic. But is that data usable? This is where AI comes in: it can take a huge data set, distill it, and enable accurate models of trends that help suggest improved behaviors, on everything from an individual’s financial decisions to better health practices.

Kevin says a fundamental value proposition of AI technology now is “the ability to have more accurate forecasts further out in the future for increasingly complex scenarios. For example, what Sorcero is working on is the ability to take increasingly diffuse, increasingly complex concepts — in Sorcero’s case embedded in the language — and distill them down to a framework that computers can understand, that human beings can understand. That distillation, I think, is very fascinating and very valuable to businesses, when you think about what that means for the future.

Especially in the industry and sector space, I’m very intrigued by what better forecasting with more diffuse data can do for risk, for lending, for climate modeling. That same model, which can help health insurance companies price insurance better, or price their risk better, can also be used to suggest [to consumers], do [these] three things to improve your health. Or do three things to meaningfully move your premiums in your favor. And here’s the prescriptive causal relationships between all of these things.

“When you think about the reams of information out there across all of these different sectors, the sum total of published documents, of strings of characters since humanity has started writing stuff down, and how much of that is functionally walled off from individuals, from computers, and what we can glean from that, I think [it] is really fascinating. The stuff around drug discovery; you see a lot of headlines [about that]. I think that is the leading indicator of something much more generalized.”

On AI and ethics

Two major areas of AI application are health and finance. And since these arenas have a big impact on people's lives, builders of these AI applications must contend with regulators. They also run into issues with ethics.

Kevin says that the mere existence of this debate is a healthy indicator. "Even the fact that people are anxious about this is itself an indicator of health in society. In fascist states, there's very little debate. So first of all, the fact that we are having a debate makes me feel good."

"One of the things I think happens often is when most people, even product managers, are looking at different technology choices with different approaches, it's a subjective comparison of options on the table. Does AI do this better than people? Does Deep Learning do this better than a rules engine or something? And it is a [subjective] assessment. When you shift the question to *Is this ethical or not*? it is an objective assessment against a third party framework.

"So it is possible to live in a world where a company can say with confidence: AI issuance of mortgages is generally more ethical than human beings. And if you think about problems with redlining, or communities being marginalized, that's [an objective] comparative statement. The other question — *Is AI mortgage lending ethical enough*? — is a different question. I think people talk past each other. It can both be the least bad option on the table, and still not good enough, or vice versa."

In Closing

These collected podcast interviews offer a vital snapshot of the Age of Product in life sciences right now. The conversations reflect some of the vast terrain, from the transformation of medical affairs work, to stewarding legacy companies through the digital transformation, to what AI founders need to know about venture capital investors.

The digital product revolution has come to healthcare. Artificial intelligence is changing the relationship between healthcare professionals and data, and allowing life sciences organizations to transition from pill companies to comprehensive preventative healthcare platforms. While AI makes data more usable, effective rapid solutions are only possible through better, more equitable trial designs, and strong partnerships between the human stakeholders working at the nexus of the revolution in digital medicine.

All of this adds up to an exciting time in healthcare, for professionals and patients alike. While life sciences outcomes have already resulted in so many benefits for humanity, all eyes are on the latest innovations in AI-powered products for life sciences. The future is bright.

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