

Unlocking the value of Digital and AI partnerships for Biopharma: in conversation with PathAI

Baringa's Pharmaceuticals and Life Sciences Podcast

Josh Elliott: Hello, listeners. We're really happy to welcome you to this podcast hosted by Baringa's Pharmaceutical and Life Sciences team. I'm Josh Elliott, and I'm honoured to be joined today by Dr. Eric Walk from PathAI to talk about how strategic partnerships across different areas of the pharma and life sciences ecosystem are critical in shaping the future of precision medicine, which is an area where PathAI drives significant and highly innovative impact for patients. We really hope you enjoy the podcast, and if you'd like to hear more from our team, then feel free to access our articles, case studies, podcasts, and events through the link provided.

So, Eric, I was lucky enough to meet you over the COVID times when we worked together at Roche on an exciting project. But it'll be great if you could provide an introduction, an overview of your career story for our listeners.

Eric Walk: Absolutely. And first of all, Josh, thanks so much for including me in this discussion. I really look forward to it. Precision medicine is one of my favourite topics. So hi, everyone. My name is Eric Walk. I'm a pathologist and the chief medical officer of PathAI, which is a digital and computational pathology company based in Boston. I think Josh asked me to be part of this because I've had a 20-year career and lots of experience in the area of precision medicine, which I'll briefly summarise now.

I'm a pathologist by training and spent a couple of years practising pathology, but very quickly learned that I wanted to be more involved directly in precision medicine. And because of that, in 2002, joined Novartis Pharmaceuticals in the oncology business unit in a role that included translational medicine and early clinical development. And I'd say this is where I really saw the value and fell in love with the concept of precision medicine.

Stayed with Novartis for four years and was involved in many targeted therapies, which was the drug technology of that era, worked on companion diagnostics and then transitioned to the diagnostic side of precision medicine joining Ventana Medical Systems, which was and is the number one tissue diagnostics company in the world. Roche later acquired Ventana Medical Systems, and I stayed on with the company for a total of 16 years as the chief medical officer and was involved in over 20 different companion diagnostic development programmes and FDA approvals.

And then in 2021 left Roche to join PathAI where I'm chief medical Officer. I run quality, regulatory clinical affairs, and medical. But I would say the theme throughout my entire career has been precision medicine and if you will, precision pathology and innovation in pathology diagnostics. So, Josh, really a pleasure to be here and look forward to the rest of the discussion.

Josh Elliott: Thanks, Eric. It's great to have you. And it's clear precision medicine is a field very close to your heart, and although it's a very hot topic now and you fell in love with it early, I think it's taken a while for it to really take traction. So first of all, it would be great to understand the trends and perceptions in precision medicine that you've seen change over the past 15 to 20 years.

Eric Walk: I've really had the privilege of having a front row seat to seeing precision medicine take shape and evolve over the years, as I said, starting back in 2002 at Novartis, which really was around the time of the birth of precision medicine. And I distinctly remember the perceptions at that time and they were not positive. And so what happened, what changed perception was the data.

So there were multiple examples and multiple data sets clearly demonstrating that this new generation of targeted therapies were absolutely more effective in biomarker-defined subsets versus the entire patient population. At the time it seemed like, "Okay, great. This is going to be a standard way we did drug development." But there was then a long gap, a drought if you will, of no further examples of precision medicine targeted approaches until 2011 with the approval of crizotinib or XALKORI for late-stage NSCLC that harboured ALK gene fusion. So this was the first time gene fusions were discovered in a solid tumour. And this was really, I would say, if you will, the last nail in the coffin for one size fits all. And really I think it was that period that really silenced any remaining critics for precision medicine. And I think that takes us to the current day where everyone would, 100% of the field would agree that precision medicine is the standard by which drugs are developed today, not only in oncology, but all disease areas, biomarker stratified trials and go-to-market approach based on biomarkers and precision medicine. That's considered the default now in most cases.

Josh Elliott: What I find fascinating in this space is that it requires many different disciplines to make it successful whether that's data science, digital development, medical science, and then spanning all the way from diagnostics due to therapeutics as well. I guess in that context, it's difficult for one organisation or one entity to have all those specialist world-leading skills and experiences and capabilities to really unlock this. So I think in that respect, how important do you see partnering being across the ecosystem to enable precision medicine to flourish?

Eric Walk: Yeah. It really can't be overstated how essential partnering is in the precision medicine space. I think it's widely understood in the field that no one organisation or stakeholder can do it all themselves. I think no one would challenge that. And at its very basis, the fundamental tenet of precision medicine in the so-called co-development model is that there are two ingredients, at least two ingredients that are mandatory for this to be successful.

One is the drug of course, and the other is the diagnostic. And this then has created a really mandatory partnering paradigm between pharma companies and diagnostic companies. That's evolved certainly over the past 20 years. Referencing the field I'm currently in of AI, there's a very similar partnership dynamic. We see all major pharma companies building AI capabilities now, and I still think they're probably in that period where they're figuring out, "Okay, we probably do need to partner with AI, diagnostic company to take this through the FDA. But when do we do that and who do we do that with?" I think that's still in the sort of storming, norming phase of relationship building versus it's more mature on the assay technology side, in my opinion.

Josh Elliott: What's PathAI's approach to partnering with that wider ecosystem?

Eric Walk: Path AI and our partnering strategy, I would say we've been successful as a company. We're considered to be the leading AI developer in the pharma and in the clinical development space. And that's true because we understand what we can do on our own, but more importantly we understand when we need to partner. I think we've done a great job on our own building capabilities, both on the biopharma side and the clinical pathology diagnostic side, including our software image management system platform called AI site. Many algorithms for workflow efficiency, in precision medicine, PD-L1 and HER2 being examples.

But we realised that we can't do everything. So I would say our partnering approach is centred on expanding our reach into specific business adjacencies that would be difficult, time-consuming, expensive or all of the above to do on our own. And a really good example is our recent partnership with my previous company, Roche, which is focused on AI enabled companion diagnostics.

So the ingredients for this partnership are on the Roche side, they bring tremendous experience and credibility with pharma on the CDX assay side of precision medicine. PathAI is the recognised AI leader in the pharma space. But having said that, we don't yet have a CDX pharma partner relationship. So this partnership vision is to take the precision medicine CDX model to the next level and enable this whole co-development paradigm and accelerate biomarker CDX development and also unlock novel predictive biomarkers with AI technology that would otherwise not be possible with human pathologists interpretation.

Josh Elliott: What would you describe as the characteristics that make an organisation a partner of choice? What qualities do you look for from a PathAI perspective if you are partnering with a bigger pharma or bigger diagnostic organisation?

Eric Walk: Sure. I'm sure I'm not the first one to make this analogy, but partnerships are very much like marriages in that you know there are going to be ups and downs in the relationship. And so your goal really is to find a long-term strategic partner who can weather the storms as well as driving the successes. But I do think to your point, I think there are some specific qualities that we look for in that early dating phase, if you will, to try to find the best match. And in no particular order, these include what I call the innovation mindset. And that sounds like it may be obvious, but we've worked with companies who don't have an innovation mindset by intention. They have a "me too" mindset. And I think that's very important that you align early on. Are we about me too? Are we about pushing the boundary and innovation?

Second, and something that we already talked about is a data-driven approach for decision-making. I think this is really important to align on in a partner of how we're going to make decisions, go, no-go decisions, regulatory decisions, et cetera. And I think data-driven approach makes the most sense versus being caught up in technology fads or other trends that have not yet been proven.

Another important one is a shared appetite for risk. So I think we all know healthcare technology, healthcare development is a very risky business. So things fail, clinical trials fail, technologies fail, drugs fail, the science doesn't pan out. So just another way to say this field is not for the faint of heart, and I think both partners need to be okay with that. Another thing I look for in partners is on the capability side that those capabilities are complimentary and synergistic versus competitive.

It's never going to be perfect, but if the net net is more complementarity and less competitive, I think that's part of the winning equation. And then there's some softer things that are more difficult to quantify or read in an annual report or something. Is it easy to work with a partner? How heavy or light are they on process? And related to that, people and relationships matter. So it's not just about the corporate identity. What about the people on the leadership team that you're going to be working with day in and day out? And also deeper in the organisation, can we work effectively together as a team? Can the relationship survive the speed bumps that are invariably going to happen? And this last comment probably could be a whole nother discussion, but is the culture and value system shared on both sides? I think that's super critical.

Josh Elliott: Yeah, I think the culture part definitely chimes with me because although partnering is essential as we've laid out in the space, our clients find it really, really hard, especially when working across disciplines. And there are some challenges that we tend to see time and time again when working in this space. Navigating different cultures is one that really chimes. So in a traditional pharma company, you are used to product development cycles that might span years and decades, whereas if you come from a pure tech background, your time to market might be a fortnight.

So how do you make that match as a mindset? I think another one we see challenges around, and you refer to it is alignment of outcomes. Are you genuinely on the same page pulling in the same direction, or do you have different incentives for what you want to get out of it? I think a third one we see very commonly is almost language translation between different disciplines.

So you're a data scientist versus a clinician. What's that language that you can find in the middle where everyone really understands each other? And I think that can sometimes be underplayed. So I mean those are three challenges that we commonly see. It'll be good to understand. Any top tips you have for others in navigating those challenges or indeed if there are any other big ones that spring to mind to hear what they are?

Eric Walk: Yeah. Maybe we'll start by continuing on the culture topic. And this has been an interesting journey for me. So when I left clinical medicine and joined industry, it was during the orientation they started talking about culture. And I distinctly remember what was going through my head and that was, "Oh, this is fluffy HR nonsense. This culture stuff really. Let's get to the science. That stuff doesn't matter." And I have to say 20 years in, and it didn't take 20 years, but I've come full circle 180 degrees. So culture in my opinion is so critical to the success of a company and therefore critical to the success of a partnership.

And alignment on culture is I think one of the first things that needs to be done during a kickoff meeting when you're initiating a new partnership here. And my only advice is to do your best to try to proactively choose a partner that shares the same sense of culture and value system. And if you find yourself in a partnership where the cultures are clashing, in my opinion, it is literally a timeout moment really.

So everything stops, projects stop, deliverable stop, and you need to reset and take time to align on the culture for the partnership. And maybe that's not aligning on the culture for both companies. Maybe that's aligning on the subculture just for that partnership. That could be mapping out of one set of cultural beliefs to the other set of cultural beliefs or values. It could

be a more fundamental reassessment of what culture is necessary to drive the specific goals for that partnership.

But I really think that is that important that if there's culture clash detected early on in the partnership, it literally is a reset moment, at least in my opinion. The second category you mentioned is, I'll rephrase and say, outcomes. Is everyone moving in the right direction? This is also a key element to partnerships, and I've seen many partnerships where that's true and where it's not true.

And so I think in a way it's obvious that of course you want everyone moving in the same direction, but that's always not the case. And so my advice here is during that kickoff meeting between the two teams establish very clearly what the objectives are of the partnership because oftentimes you have people heading in different directions just because they don't know north, they don't know true north. And so entropy kicks in and just everyone is going in a random direction.

So setting those clear objectives I think is obvious, but sometimes overlooked. And this includes details of the relationship that was created and articulated during the contracting process that's underlying the partnership. And sometimes there are some contentious areas in the contract, so you have to put the fish on the table, so to speak, and just make sure everyone is very clear. What's the rev share percentage? Are there competing priorities? Are there no-fly-zone, so to speak, areas where you're not going to touch? Get those out there as soon as possible. And maybe the last thing I'll say in this category is incentives drive behaviour, right?

So the goals need to be aligned on especially the goals that are in people's objectives that drive their bonus et cetera. And then the last unrelated topic you mentioned is speaking different languages and how to different stakeholders from different functional areas, for example, translate their language. And I've experienced this too, and I can relate to it directly having been in the medical part of these companies my whole career and having to speak with people on the development side or on the commercial side.

There can be lost in translation situations. And one example I'll give is something that I've experienced multiple times during a pharma diagnostic partnership, and that is on the regulatory process language. So pharma, they are very well, let's say, fluent in the regulations of pharma development. They are not typically fluent in the language of diagnostics regulatory process.

And so I've encountered this many times where we're tripping over each other because there's not clear communication on the diagnostic regulatory process versus the form of regulatory process and how the two need to fit together. So what we've done that I've seen successful is literally create a glossary of terms for what these terms mean in the context of the regulation of drugs and diagnostics. And also, I've done little training sessions where I've given an overview, a primer of this is how the diagnostic regulatory process works, and you have the pharma partner being the students, and they're very appreciative because most of it is completely new to them.

And so my advice is take the time to educate each other on the partnership with a focus on key concepts and processes in your world that may be different between the two parties.

Josh Elliott: Thanks, Eric. I think that's really sage advice and I think a lot for others to take away from those solutions and ideas about how to address those. I think the one that really resonated with me was your idea of not rewriting cultural values of respective collaborators, but developing that subculture. Where do you meet in the middle? And I think it aligns to the outcomes and the incentives. I think what we've seen work well with some organisations is saying, "What are the three critical behaviours we have in common and that we need to uphold? And how can we incentivise those two behaviours?"

And if we just get those three ways of operating right, is that going to lead to a better business relationship? So I completely get your previous thinking around culture being quite fluffy. I think one more key challenge I was keen to get your views on today is how to measure the success and impact of collaborations with your partners? Like you say at the contracting stage, there are those financial terms, and that's one way of looking at the success of the partnership.

But we get asked time and time again, how do we know if it's going well? What are those leading measures, lagging measures? How do we know this partnership is really achieving what it sets out to? So it'd be great to understand from your experience how best to measure success and impact when collaborating with others.

Eric Walk: Yeah, sure. No, it's a great question. And in healthcare, it's my opinion that ultimately this is about creating novel value for patients, right? That's why we're all here is to bring innovations that drive new solutions for patients, clinicians, and the field of whatever disease area you're in, oncology or inflammatory, GI, etc. But having said that, you do need to as part of a partnership have specific metrics that you look at. And these things could be new product launches, new drug approvals.

It could be more specific milestones along the way because a lot of the partnerships that I'm part of are long term, so it can be challenging to measure metrics just because these are year long or multi-year projects. So other things that I look at as a measure of success are publication of key data and study. So are you co-presenting at congresses in abstract poster, oral presentation, podium form?

Are you generating IP? This is usually covered in the contract that new IP generated during a partnership is typically shared. But is that actually occurring or are you making new discoveries as you thought about along the way? So these are some of my thoughts on the specific metrics by which you can measure the success of a partnership. But just to go back to the patients, that's really what it's all about.

The mission, the vision at PathAI is about improving patient outcomes with AI-powered pathology. And if we're not doing that through our partnerships on our own, then there's something wrong and that should trigger some discussion.

Josh Elliott: Been a pleasure speaking to you today, and I would love to say a big thank you both from myself and from the listeners of this for joining me for the discussion today. And look forward to our future discussions and seeing what the future holds for PathAI.

Eric Walk: Thanks so much, Josh. Really, again, appreciate the invitation to be part of this fascinating discussion. And I look forward to future discussions because I'm sure precision medicine will continue to evolve, and so we'll have to have round two of this sometime in the future.

Josh Elliott: Absolutely. Let's do it. Thanks, Eric.

Eric Walk: Thanks, Josh.