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Solving for Tech Ethics
Episode 4: Intersecting
Bioethics and Tech Ethics
with Takeda's Nick Bott

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The Speakers

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The Script

Benna Ammanath

Hi everyone. My name is Beena Ammanath, and I lead technology trust ethics here at Deloitte. And today on solving for tech ethics, I'm joined by Nick Bott, global Head of Bioethics Tech Ethics and Responsible Innovation at Takeda. Nick, thank you so much for joining us today and welcome to the show. Can you share with our audience a bit about your background and how you got to your current role today?

Nick Bott

Sure thing. Great to be here. I'm a clinician by training clinical neuropsychologist. So my early days were spent both in clinical and research looking at digital phenotyping tools, developing them, testing them, performing research in clinical populations with these tools. And it was really there that I started to ask questions about, well, if these tools end up getting democratized and used by providers and patients, what is that going to do? How is that going to change their interactions with healthcare? I also ended up spending quite a bit of time in the academy at Stanford where I was a postdoctoral fellow in healthcare systems delivery design, and went on to help lead that fellowship for a number of years. And as you might imagine, healthcare system delivery design often includes a ton of technology involvement, figuring out ways that you can include or embed technology in different aspects of healthcare delivery. And then finally, I ended up for a number of years being the chief science and privacy officer of a digital health startup out in the Bay Area. That was, again, looking at forms of digital phenotyping for early cognitive decline and intervention, and I think kind all of those in many ways. I look back and they were kind of a nice combination of experiences that once I ended up doing more joint work with the pharma industry, ended up getting kind of brought in to my current role at Takeda.

Benna Ammanath

That's amazing.
So what's your current role at Takeda?
What are you focused on at Takeda?

Nick Bott

Yeah, so I lead our global bioethics and technology ethics capabilities, and that is a really interesting remit, and I say that for a couple of reasons. One, I take a certain amount of pride in saying that having bioethics and technology ethics together is a bit rare, I think within healthcare and certainly within the life sciences. Having bioethics capabilities is not rare, but thinking about them in relationship to technology ethics, I think is a bit more rare. We found it to be quite a fruitful combination, and it's very synergistic because what we're beginning to see in the bioethics field is that it's increasingly engaging with questions of emerging technology because technology is coming into play in these areas that have traditionally been clinical research questions of how you think about access or populations and vice versa. Right now, we're also seeing technology ethics when it's being applied in healthcare and the life sciences, having to reckon and wrestle with these fundamental bioethical questions. What does it mean to do no harm with a particular technology or to only bring hopefully good.

Benna Ammanath

Yeah, yeah, so true. And also there's so much you can learn from the bioethics space and apply it to tech ethics, right? Absolutely. It's not starting from scratch, especially for somebody like you who is straddling across both the worlds, and especially with gen ai now, this whole tech ethics space has exploded. It's at the center of attention for the average person, somebody who has not even been so close to technology as you have been. Right. What are some of the emerging technologies that have the most impact in your industry, both positive and negative? We are all talking about gen ai, but what are the other emerging technologies that you might be looking at, or even with Gen ai, what are some of the impacts you see?

Nick Bott

Yeah, I think it's a really good question, and I will certainly echo that ai, even before we were really on the hype cycle of generative AI was already a very important piece of emerging technology within the broader lifecycle of the life sciences. Certainly early on in research and development, AI and ML techniques have been used for quite a while for drug discovery purposes. I think what is really exciting and I think does lend itself to a lot of potential positive impact, are now the realities that generative AI are bringing to further expedite and create efficiencies for the drug discovery process.

It's often talked about, right when we're talking about the life sciences industry, that it's a very long life cycle to bring a medicine to market, and a lot of that time is eaten up through the research and development stage. And so one of the promises that I think we have heard a lot about early on, as we've gotten to know generative ai, it's kind of the role that some of these very interesting foundational large language models, whether it's alpha fold or others are able to do that, can have some pretty direct impact in drug discovery, whether that's target identification, looking for initial hits, it's screening, all those pieces of the puzzle. But I think I can also very quickly say that it's not just the early stage. I think some of the places where my mind goes unfortunately, are we think about coming out of COVID a few years and seeing the importance of information and disinformation. Those discussions I think are very top of mind when we think about the capabilities of generative AI where you can now develop content at scale in an unprecedented way, and thinking about how that is going to impact medicine development and medicine dissemination, I think is a really important and challenging topic.

**Benna
Ammanath**

Yeah. What are some of the best practices that you're seeing emerging? I mean, these are all real challenges and real impact to humans. What are some of the best practices that you're seeing emerging in this space to address?

Nick Bott

Well, there's a couple of things I guess I would say to that. I think one of the things that is true about emerging technologies generally is that they're always outpacing regulation. Now, I say that very quickly because within the life sciences, we are a traditionally regulated industry, and so we're very familiar with understanding the impact of regulations. So I think what we're seeing now is this kind of window, if you want to call it that beginning to close a little bit, where we're no longer just thinking about best practices because there hasn't been for a period of time regulations around some of this. And now we're kind of recognizing that, well, there's a really important role to play in understanding best practices, whether that's principles, et cetera, but we're now quickly advancing towards a time and a place where there's real compliance and regulations that have to be met. And I think that's a great thing. I think it's an important thing, particularly in an industry like ours. I will say though, that doesn't obviate the need for being able to utilize an ethical imagination with the types of use cases across the functions in a life sciences company to ask yourself the question just because we can. Should we?

**Benna
Ammanath**

Yeah. Yeah. That's my favorite line from Jurassic Park. I so wish for so many of these emerging technologies. Sometimes if we just take that pause and ask the question, I think it at least makes you think about the ways that things can go wrong. And I hear you on regulation, but I also think this is, we've entered that era where you almost have to collaborate with your competitors or with your industry peers to move the conversation forward because there are so many nuances, whether it's regulations or best practices, it's not going to be a one size fits all, right? So you have to compete, but at the same time, you can collaborate on coming up with the best practices and can just uplift the entire industry. What are your thoughts on that?

Nick Bott

No, I think that's a great point. Certainly within the life sciences, there are industry organizations like the I-F-P-M-A, the Industry of Federation, pharmaceutical manufacturers and associations that play that kind of a role. And to your point, it plays a pretty significant role in creating a unified voice, if you will, or an opportunity for people to speak from the same script. When we're thinking about some of these areas that the industry recognizes, Hey, this is where we're going in this or that area, or this particular technology can be used in these ways. How can we provide industry-wide best practices or standards that can support the industry as a whole, as opposed to trying to either create duplication or just compete in ways that maybe we shouldn't be competing? And certainly when you think about regulation, one of the advantages of really having discussion at an industry level is that hopefully you are then in a much better position to help support healthy regulation when it comes to some of these technologies.

Benna Ammanath

So Nick, you recently participated in a forum on the use of quantum and generative AI and drug discovery at the World Economic Forum Center for Trustworthy Technology. How was that experience?

Nick Bott

Yeah, it was a great experience, partly because I think it shows how the rate of change with technology just continues to accelerate in some ways. We can say, oh, well, we've gotten used to having discussions about ai. Well, and now very quickly, we're beginning to ask questions about, well, what's the role of quantum computing? Or at least quantum computing techniques, which can be to certain forms of artificial intelligence. And certainly there's already work being done to see how that can further aid aspects of research and development with drug discovery. And I think for me, it was particularly valuable to able to have a discussion with other industry peers to again, understand, well, where are we at with this? Where does this fit into current discussions about the role of these technologies? Is what learning do we need to do for those of us who sit in places and companies where our role is to help look around the corner and ask questions about, okay, this emerging technology is coming. How can it be best be used? What are the considerations that we need to bear in mind if we are going to utilize this? And so it offers a really great opportunity to have that sort of pre-competitive space, if you will, to have those discussions in a meaningful way that can provide alignment at the industry level.

Benna Ammanath

And what would your recommendation be to leaders who are not as ahead in their thinking on this topic? Obviously, every company, whether it's pharma, life sciences, or even financial services, there are going to be concerns around trustworthiness and ethical use of technology. What's your advice to leaders who might be just beginning to think about it?

Nick Bott

And so I think this is a great question. This might be a bit of a hot take, but I think that having meaningful discussion about technology ethics outside of a foundation about ethics in general, or having a culture where you can really discuss what does ethics and values look like at a company or at an organization period, whether it has to do with technology or not, I think is really the prerequisite. So I guess another way of saying that is I think for those that are early in this discussion, it's much more important to begin to think about how do I create the spaces and the environment in my organization for ethical decision-making and an ethical consideration to happen, period? Whether that has to do with technology or not, I think if you jump to trying to solve for a particular emerging technology, or you recognize that, okay, there's this technology that's getting a lot of pipe and we need to come up with a way to think about it ethically devoid of that foundation, I think you're going to end up with a very shallow and likely unsustainable way to really scale and impact the organization.

Benna Ammanath

Yeah. And how do you bring your employees along? Because there's obviously a lot of hype and headlines in the news, and I'm sure you'd face it in your day-to-day role. How do you translate that headline to what is the organization doing, or what are some of the best practices that we are bringing in from an employee perspective?

Nick Bott

Yeah. No, no. I mean, just following that previous question, I think that's a great follow on because I think what it does is it forces you to have to understand, do we have enough of a vocabulary for ethical thinking and decision-making generally across the company, that when these headlines and these new technologies do come up, we can actually translate them in ways that we're not starting from scratch. We may need to develop certain particular ways of talking about a specific technology, or there may be specific nuances. But again, I think the value of having that fundamental ethical culture and a way for employees to be able to wrestle and consider the ethics generally of a topic become really valuable because it just creates a lot. People can join the conversation much more easily, even if they're not a technology expert. And I think for companies that for large companies, you can't expect every employee to have the same tech fluency.

But everybody, and I'm fond of saying, and I think you're fond of saying this too, fundamentally, ethics is a team sport. Ethics is not one person's job, is not. While I sit in the role that I do, I don't believe for a second that I'm the only one that's trying to uphold the ethical culture at Takeda. That is a part of every employee's role. So what I do see as paramount is how do we ensure that these conversations can happen in a way that doesn't feel intimidating, or, oh, unless I have all of this background, there's no way I can possibly even engage. I think that's a huge loss if that's what people come to.

Benna Ammanath

Yeah, no, such a good point. And as you know, I lead technology trusted ethics here at Deloitte, and I don't think it's one person's job. It's impossible to solve it as just one person doing it. And especially today, every organization, every enterprise you look at, it may not be a core tech company, but it is tech enabled, right? Whether it's in your marketing function, finance function, whether it's in your core product like drug discovery, there's tech embedded in every part of the organization. So having that base level of fluency and at least knowing whom to call or who to ask if you could be that marketing intern looking at evaluating an AI driven personalized marketing tool, but you should know what kind of questions to ask, and being able to then know whom to reach out to. I think that base level fluency, common language is so crucial and making it a team sport, the first step is to make sure that everybody's speaking the same language and knows who to go to.

Nick Bott

That's, that's a great point. And I'll say one of the surprises or discoveries I've had on that front is a lot of times when you travel across different functions in the company, you kind of have to be a language learner because how certain technologies or certain considerations of technologies are going to be spoken about in you were mentioning marketing versus data science versus technology architecture, they are different. And that doesn't necessarily mean that one group is talking about them correctly and one is talking about them incorrectly. I think a lot of times they're all talking about it, but they're talking about it in their own kind of dialect in their own way. And part of what I see my role is often playing that role of translator, of saying, okay, I see how this is showing up in how people are talking about in these different areas of the business. How can we make sure that nothing's getting lost in translation? And how can we make sure that there is a common language that we all, when we're saying this, we get what each other's saying, so we don't have misunderstandings or worse, we simply think that someone isn't talking about it at all when they might be.

Benna Ammanath

Yeah. Yeah. And at the end of the day, it's not just our professional lives. It impacts up. These emerging technologies are impacting our personal lives too. And so how do you think about technology that you or your family might be using in personal lives and the kind of trust and ethics implications that come with it, especially as somebody who, this is part of our day-to-day job, at least I do it. I'm curious whether you try to translate it into maybe when your kids are using a technology or immediately, oh my God, what are some of the things that could be going wrong right now? How does it translate to your personal life as a leader?

Nick Bott

This is a very loaded question, so I can go deep on this. There's a couple of things that I'll comment on. So first, I'm a big question asker for my own kids when it comes to technology. And so I'm often just offering up questions about, well, what do you think this technology could be used for? Or What do you think would happen if you use this technology every day for eight hours? Or do you think there are things that the person who created this technology had in mind and is this or that what they had in mind? Or why or why not? And so I do think that technology affords us a very fertile ground for those sorts of kind of questions and considerations. And I actually find it really fascinating to ask it from someone not of your own generation, whether it's your kids or otherwise, because it's very important to recognize that you have your own perspective, and it's important to hear how other people view it. Now, the other thing that I'll say that I'm a huge fan of, and this is certainly with my own kids, is the role of science fiction.

Whether that's reading, listening to audio books, watching films. I am a huge fan of the use of science fiction and literature and art of different forms to again, raise these questions to the surface surface in ways that hopefully allow a more nuanced or deeper amount of reflection to happen when it comes to whatever technology is in question.

Benna Ammanath

Yes, yes. So true, so true. And one of the things you realize is just the definition of ethics and trust is going to change from generation to generation. If you look at even something basic privacy, for us, it seems like we're hyperfocused on keeping our data private, but I have two teenagers and they, they're willing to share their data to get the right kind of service that they need. They're much more open about it. So everything that we do is going to change and evolve over time. What we're doing today is just at this point in time, and there's going to be a generational shift as the thinking, the challenges, and the nuances and new technologies come into play as well.

Nick Bott

It's a great point, and in my role at Takeda, just to kind of follow on that real quickly, I think one of the challenges, but I think it's a rewarding challenge, is to your point, asking ourselves the question. Okay, we're answering this question in the now or maybe in the short term, but if we were going to look back five years from now, if we're thinking about potential outcomes, could we still look back five years from now given the different types of scenarios we've thought through and still feel good or feel like we were consistent with our values and our ethics in making the decision that we did? And I think that's important for two reasons. One, because I do think there is a certain element of needing to look around the corner and ask those questions, because that's part of what it means to develop and maintain trust. But to your point, it's also important because is you can't predict everything. And the reality is sometimes the outcomes will change. And even though you might make a decision in the short term that is considered and reasoned, well-reasoned, perhaps you still might need to change that in the future based on other issues that come up.

Benna Ammanath

Yeah, yeah. So true. So true. One of the things that I think is crucial for leaders is to have that personal and professional observations of technology to form those opinions and learn from different generations almost, and that's right in our families. So I think there is so much to learn, and we've talked a lot about trust and ethics, but Nick, what are you most excited about in terms of generative AI or emerging technologies? What's a use case or what's something that you hope that this technology can do based on what you are seeing today, what are you most excited about from a tech perspective?

Nick Bott

Well, certainly within the life sciences industry, I am very excited about the role that these of emerging technologies are going to play in bringing medicines to market faster, and not just bringing medicines the way that we've always brought them to market, but to bring medicines that are higher fidelity, that are more targeted, more personalized. We have done a better job of understanding the side effects and perhaps obviating those because of the roles that just simply the volume of data and simulation that can occur with some of these emerging technologies will allow for. So I think from a life sciences perspective, I think that's incredible. And I think in an industry like this where it's guaranteed that almost everybody at some point in their life is going to touch it, I think that is a goal or a bar worth shooting for. I think that is also hard for me not to see how we are going to witness a pretty amazing transformation in how whatever job we're doing, whatever role we're playing, are going to be working. I do think that seeing the advancements in how generative AI can support humans in a myriad of tasks or a myriad of ways is kind of mind boggling. And I think there's a lot, there's a lot, I mean, again, lots of fertile ground for ethical consideration there, but I do think there is going to be a lot of change in how we think about just work that we do, particularly knowledge work.

Benna Ammanath

Yeah. Yeah. Can you share a little bit about maybe a project or a favorite example of something that you've done that an audience that our audience can learn from?

Nick Bott

Sure. Well, I mean, something that I will speak to, and it kind of goes back to what I mentioned earlier about my love for science fiction and imagination. And this is a very, I think, simple example, but one that I find has been really fun to bring to Takeda has been, my team worked on putting together an analog, something very analog, an analog card game that we use to help develop and create environments where we can really wrestle with the ethical considerations of emerging tech. And I know we're by no means the only ones that have done this, but what I find really fun about it is so much of the work that has to be done in ethics is creating those opportunities for conversation and deliberation.

It can be difficult to start those conversations, or it can feel hard to really get them off the ground, or it can feel hard to keep them going. And so this project has been really fun because it's really leveraged, as I mentioned before, a lot of the existing language and culture that has been a huge value for Takeda for over two centuries now. And we've leveraged that in a way to really develop this kind of card game that is fun to play, really allows people to dive deep in these sorts of ethical considerations and is pretty, it's, there's not a lot of fear in kind of stepping up to the plate in this regard because there's a lot of imagination involved. So that's one fun example of just how trying to bring the ethics conversation to the organization I think can be done in some interesting ways. I think that's one of the first things that stands out to me because seen some really fun conversations happen with him.

Benna Ammanath

I totally understand it, and I think I've shared this with you, but my team put out a training which is kind of gamified using virtual avatars, and it also ends up, it's a training, but it's put in a way that's very engaging, and there's lots of questions back and forth, but at the end of it, you walk away with something. And I think it's just to add to what we are talking about earlier, how do you build that common vocabulary which anybody in the organization can relate to. So I have to ask two more questions. Sure. What keeps you up at night.

Nick Bott

Yeah, so one thing that I will say has come up in my mind quite a bit lately is just recognizing the divide that is continuing to expand when we think about the role of emerging technology. And that divide can happen for a number of reasons. I think part of that divide is simply access, but I think part of that divide is also the fluency and how quickly these technologies can be adopted by some. And then the ways that that acceleration of adoption can lead to increasing disparities of the people who are going to make use of technologies and those who are not. And certainly with some of what we're seeing with technologies like Gen ai, that brings up a lot of concerns around, well, how is this going to impact employees across any number of fields? So I think that is a genuine concern of mine, and I think it's one that, it's an implication of technology. It's not necessarily one that you can avoid, but I do think it's one that requires thoughtful consideration by those on both sides of the spectrum. And I think having those inclusive discussions, not just with the early adopters, but with those who may be reluctant and to really understand, well, how do we move society forward with a technology like this in a way that doesn't just further divide?

Benna Ammanath

Yeah. Yeah. Nick, you and I could keep talking to you for hours, but unfortunately we are at the end of our time. And do you have any parting words, wisdom that you would like to share with our audience?

Nick Bott

Well, I would go back to a couple of things we've already talked about. One, I think that ethics, whether it's tech ethics specifically, or ethics more generally, it's a team sport sport. It's something that if you're in a position where you're helping to lead this capability at a company, it's a wonderful opportunity, but one that ultimately doesn't rest on any one person's shoulders. And it's ultimately about bringing others along in that same journey. And the other thing I would mention is the role of imagination, I think is paramount as we continue to engage in this conversation of emerging technology, because it is almost a guarantee that we cannot, we are not going to see all the applications of these technologies, but I think if we spend some time using our imagination, we can certainly come up with a lot of the scenarios we don't want to have happen and then spend some good time.

Well, how do we ensure that those positive outcomes that we can envision will happen and mitigate the ones that we really would prefer not to see? Another example that comes to mind, Dina, of some recent work has really focused on thinking about how we audit AI within healthcare and the life sciences more specifically. And we were actually given the opportunity to apply and recipient of the dame submissions for novel work in the role of technology ethics. And our work is really focused on thinking through and understanding what is going to be required when we're thinking about auditing and monitoring AI and ML solutions that are being developed, particularly in the life sciences. And I think this is a really exciting and important area of research and work for us, because as we may mention earlier, we're quickly moving into a place where in certain markets globally, we're seeing compliance and regulations coming into effect, and this will include the monitoring and auditing of AI ML solutions within healthcare and sciences. So that's been a really fun and meaningful opportunity both to think about that question with specific context to our industry, but also to engage with a number of collaborators and other recipients from other industries to learn about how they're thinking about these questions for themselves.

**Benna
Ammanath**

Yeah, yeah. Yeah. No, that's great. Nick, thank you so much for joining the show today. As always, enjoyed our conversation and would love to have you on the show again sometime, but keep doing what you're doing. Thank you so much.

Nick Bott

Thank you. Appreciate being here.

**Benna
Ammanath**

Thank you for listening to today's episode of Deloitte Solving for Tech Ethics podcast with our guest Nick Bott from Takeda. I'm your host, Beena Ammanath, and I look forward to having you join us in our next episode. Take care.

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