

Sara Armstrong:

On this episode of Innovation Ambassadors, we're showcasing the journey of Loka, an exciting Silicon Valley full-stack consultancy. Working with customers across industries to accelerate their generative AI, big data DevOps and design projects. As part of our AWS partner network, Loka has worked with hundreds of AWS customers. And we're here to explore the patterns they see emerging as they help customers harness the power of generative AI.

Well, I'm thrilled to welcome Bobby Mukherjee, founder and CEO of Loka. Bobby, thanks so much for joining us today,

Bobby Mukherjee:

Sara. It's a pleasure. Thank you.

Sara Armstrong:

I'm really excited about the conversation we're going to have, Bobby. Can you for our international listeners, maybe give us a little bit about Loka and your mission?

Bobby Mukherjee:

Yeah, so Loka was a company that I started many years ago to celebrate the entrepreneur. Prior to starting Loka, I had been very fortunate to have had a series of both adventures and misadventures with startups of my own, sort of the more classical venture-funded variety. And I had wins and losses with those, but I came away from that just in love with the journey of the entrepreneur. Loka was really built... The DNA of the company really takes into all those lessons that we can hopefully help apply to other entrepreneurs. So the mission of the company is really to find the world's most compelling entrepreneurs that are typically domain experts in a particular field, they're making a dent in the universe in their own way. And our job is to help enable them, accelerate them, and most importantly, get their offering to customers faster, help them ship faster. So that's a bit about us.

Sara Armstrong:

Love that. AWS has a similar long history with startups, over 280,000 startups working on AWS, so that really resonates. What brought you to AWS as a partner for your own business? You're an advanced tier 1 SI partner, and of course a very strategic partner for our AWS startup customers, designated GenAI, co-seller, partner. What brought you to AWS?

Bobby Mukherjee:

Yeah, so it's a great question and I love these moments where I can sort of reflect a little bit because at the pace that we run and our customers run, you don't really get a chance to do this. But it's actually a really great story. So eight years ago, Loka had hit a very nice sort of financial point in our journey and I was seeking more meaning in the types of work that we were doing. I wanted to focus on customers that had a mission that was more compelling to me, more compelling to humanity in some way. My dad is a retired physician, so maybe somewhere in my DNA, there was sort of a desire to help patient care. It was a bit late for me to go to medical school. My dad tells me I wouldn't have been a pretty good doctor. I think he's very right because I don't really like to color in the lines.

So I was looking for the intersection of technology, and healthcare was sort of where I started. And we were very fortunate and got some early success on the life sciences side with customers like Novartis. And then on the healthcare side, customers like Blue Cross Blue Shield Association. And we took these

successes and we felt that we could do more. And we could see that a lot of our customers were building on AWS because it was and is the clear leader in the cloud. So my journey with AWS really began in the summer of the pandemic, so the summer of 2020.

And my first entry point was with the healthcare and life sciences business development team, who I continue to be quite close with to this day. And what kind of brought us together was sort of a customer-centric view. We had done some really, really exciting things for life sciences companies working with large volumes of genomics data and how to operate that in the cloud. And I knew that this problem was not limited to customers we had done. I knew there were many, many more, and I felt that a big partner like AWS would be the perfect place to try and send that message out to more customers. So that's kind of how it began for us.

Sara Armstrong:

Wonderful. You've worked with over the past, not even year, I think worked with over a hundred customers to launch new GenAI workloads. Sort of stepping back a minute, we know that analysts estimate that GenAI will increase global GDP by 7%. That two-thirds of all US and EU jobs will be directly affected by GenAI market reaching over a hundred billion dollars by 2030. What were you hearing from customers about how they were navigating using this technology in their own businesses?

Bobby Mukherjee:

I think part of the benefits of having seen this movie a couple of times is that while history doesn't necessarily repeat itself, it does rhyme. And what I found was that it is a once-in-a-generation technological capability that is really going to have these sorts of world-changing aspects that you mentioned. And it was being driven by and is being driven by the C-level at these companies. So CEO and executive leadership, the board, they all sort want to get in on this, in this FOMO kind of way.

And our job was really to make sure that companies continue to focus on what I think all of us should be focused on, which is the customer and the customer experience, and then working backwards. So there's been a tremendous amount of possibility with GenAI. There are many ways in which we could use it, but I think the biggest thing that we found was trying to harness this fantastic energy that customers have, the excitement that they have about GenAI. But not fixating primarily just on that, but understanding what can GenAI do for your customer experience or for the acceleration of your own product roadmap.

Let's try and understand those things and then yes, we have in our arsenal many, many ways in which we could deploy this exciting technology to accelerate those goals.

Sara Armstrong:

Absolutely. That resonates so much. Over 90% of the products and services, even whole businesses that we create at Amazon are in direct response to customer need. And having that customer centricity right up front, you don't start with the technology, the technology is an enabler. To create that value, that business value, enhancing customer experiences. We hear from customers... Boosting employee productivity and creativity, optimizing business processes. What were some of those trends that you saw when you worked with those customers in workloads?

Bobby Mukherjee:

What GenAI really has a superpower around is unstructured data. So imagine a 5,000 word scientific paper or imagine customer reviews like you might see on a Yelp, but hundreds of thousands of those. Up until GenAI, it was a really, really manual and not scalable process to sift through all those

unstructured reviews and write-ups and papers and summaries and so forth, without human intervention. And Gen AI overnight changed that. What we are seeing is that chatbots, there's this term RAG that people use in relation to this. The RAG chatbot is today what having an internet web page was in 1998, it is still the most efficient starting point and entry point for a company to take advantage of GenAI. So probably the key trend is, first an understanding that do you really have an actionable and interesting unstructured data set? And if you do, chances are very high that a RAG based entry point is the right starting point. So that's definitely been one of the key trends that we've seen.

Sara Armstrong:

Yeah, I really like that idea that you talk about. I think of it as harvesting this data that corporations, businesses, et cetera have been saving for sometimes years and never could quite unlock the full power of deriving insights from that data.

Bobby Mukherjee:

And a really exciting example of that is with one of our customers, Pendulum Therapeutics. So they're doing some really innovative work in gut health and this term harvesting really resonates with the opportunity that they have, which is that they have a ton of feedback in the thousands from customers about how they're interacting with their offering. And it's just not scalable to read each and every one of these and then try to organize them and then try to find something actionable. But again, I go back to what we should all be fixated on, obsessed about, which is the customer experience. And Pendulum wants that as much as Loka wants that as much as AWS wants that.

And what's happened is, to your point about harvesting, which I think is just a beautiful term, if you think about it. For years they have been amassing this gold mine of customer information for reviews. And what GenAI has done, thanks to what we've been able to do, partnership with AWS, is sort of unlock the value of that. Get some actionable synthesis about what are people saying about this offering, how are they using it and how are they using it in ways or how are they reacting to it in ways that we didn't think about but are incredibly compelling?

And then feeding that back into the roadmap so that the next versions of what they ship have that sort of built in and present a better customer experience. I mean, it's really quite magical.

Sara Armstrong:

That's really fascinating and it sort of harkens back to something that you shared earlier about your father being a doctor. And I'm wondering in the life sciences realm, what you're seeing there, what kind of advancements we're able to achieve with GenAI?

Bobby Mukherjee:

Yeah, it's really compelling. You mentioned my dad, I think I once asked him, "How many patients did you treat or did you do surgeries on in your career?" And I think he said about 6,000 and that's a really compelling number. But then you imagine that on planet Earth there are, I don't know, 7.4 billion people. So there's a lot of lives to help. So that's kind of what got my own curiosity involved with life sciences, is that the scale of impact, if you come up with a kidney therapeutic or a heart disease therapeutic or a cancer therapeutic, it can affect the lives of a big chunk of that 7 billion population. So with GenAI specifically, I know that the very large language models get all the press and are they AGI or not AGI and I'll leave others who are experts in that field to kind of have that debate.

I'll happily grab the popcorn in a chair and listen. But what I have found and what Loka's seeing with the hundred plus customers that we've implemented GenAI. And a lot of those have been in life sciences is

that this year and next year, and I think for the foreseeable future small purpose-built models are going to lead the way in value, near-term value. So for example, in life sciences, what we are seeing is that there are some really compelling large language models. Like ProtBert, which is sort of a protein-based large language model that can be used in the drug discovery journey. So for listeners that maybe don't know, drug discovery, while unbelievably compelling for humanity is a really, really difficult task. How difficult? Well, it takes a minimum of 10 years and billions of dollars to maybe get one drug that works.

So anything you can do to help that journey is super meaningful. Proteins are sort of the workhorses of the body and these large language models that are focused on that particular aspect of science without question accelerates drug discovery. So literally you have an opportunity to get to the cure for cancer quicker. And I can assure you that for me and the teams that work on those projects, it's a fantastic day in the office.

Sara Armstrong:

Absolutely. Getting it down to that human element of how we can use technology for good and to achieve more. And something you said really resonated also with me. It was like one of the hallmarks of the whole history of AWS has been about choice. And that model choice, when we talk to customers, being so important because different models are good for different types of workloads, summarization, reasoning, language support, et cetera. You want that flexibility to use different models and even create your own. What are some of the architectural patterns or services that you see your customers using?

Bobby Mukherjee:

Yeah. Well this is where I think AWS has really taken a novel and exciting approach in this whole GenAI world. So what AWS has said, because this is core to their values, is again a customer-centric approach. We're very excited about GenAI, but what we're most excited about is customer experience. So with offerings like Bedrock, what AWS has done is put an incredible amount of flexibility in the hands of the customer. They put no obligation on the customer on which model they should use simply because they've invested a king's ransom in building it. AWS has continued to be a cloud leader. I believe that data has a gravity, so it makes most sense to build your GenAI application at AWS. For that reason, for the data gravity reason and the choice reason, that offerings from AWS like Bedrock allow, which is bring your own model. We really don't care. What we care is that you're getting the innovation you want for your customer experience. So it's the obvious choice when we're talking to life sciences customers. Because there are very niche models, I mean, we talked about ProtBert, there's ESM.

I mean there's just a lot of these kinds of more in the crevices models that maybe don't get New York Times headlines but are going to help drug discovery happen faster. And things like Bedrock just accelerate the deployment of these things and get them into the workflow faster.

Sara Armstrong:

Right. With that same underlying security baked in from the very beginning, right. Very important, the life sciences work that your customers are doing. I'd love to switch to talk a little bit about the innovator's mindset. You spoke early on about being inspired by that entrepreneurial spirit since we're both in Silicon Valley. You know that idea of experimentation having by its nature an element of failure and embracing that failure as learning. So wondering what your reflections are, how Loka approaches this idea of experimentation.

Bobby Mukherjee:

Success in entrepreneurship is not a straight line escalator ride up into the right. It's more like a pinball machine and a pinball, it kind of bounces around and then you hit a number and something really exciting happens. Eureka! How can you get to that Eureka moment faster and better? And I think it's through the spirit of experimentation. There's a class that I mentor at Stanford, and one of the most important things they teach in this entrepreneurship class at Stanford is, "Get out of the building. I know that you entrepreneur person are very excited about this concept and it's great that you have this energy, but do people really want this? Are people really going to pay for this?" And they're always like, "Oh absolutely." "Really, but how? How do you know that?" And they don't. And the best thing you can do is get it out there and get it in the hands of your customers. So what I see is... The most valuable thing is experimentation gives you a license to get it in the hands of the customers and see what they think.

It's okay if they like it, but they like it a little bit less than you love it or they outright, hate it. But the most valuable thing is not the win or the loss, but their reaction, which is what experimentation does for you. It gives you this license to go get it, go find out what they think.

Sara Armstrong:

That's right.

Bobby Mukherjee:

They'll tell you something super valuable and I assure you it's not going to be what you think it was, but you're going to be so much better for it knowing it. So that's the mission of Loka is I want to get the entrepreneur's innovation in the hands of the customer as quickly as possible. And maybe help the entrepreneur a bit, get into the experimentation mindset. This Edison mindset of, "No, I didn't fail 10,000 times. What I did was I found 10,000 things that didn't work."

Sara Armstrong:

I love that we often talk about the launch being the start, not the end and having that feedback loop for voice of customer. And it comes back beautifully to what you were describing, with harvesting that customer data information and insights to how do you build a product that is customer-centric focused. And data-driven decisions can be made about how you can improve products over time. So that's a perfect circle there. Bobby, thank you so much for being with us today. Sharing a little bit about what you're seeing with trends and the exciting world of GenAI and how Loka is helping your own customers. What's next for Loka as you look to the future?

Bobby Mukherjee:

We're still excited today as we were when we first started the business about helping entrepreneurship faster. And what I like to do is... Borrowing from your company's founder Jeff Bezos. One of the things I once heard him talk about was that, "I think about in 10 years time, what's still going to be the same?" And I think at the time, one of the examples he was giving was that, "I've worked very, very hard and this team here has worked very, very hard to make two-day shipping a thing. But in 10 years time, do I think customers are going to want ten-day shipping? No, they're going to want faster shipping, next day shipping, next hour shipping, next minute shipping."

So for us that North Star is helping customers ship their innovations faster with a customer-centric view. A lot of that, a lot of customers are going to benefit from GenAI. If they have what we talked about earlier, this harvesting of unstructured data that's just kind of locked up in a vault not being used, and now GenAI can unlock it and there are magical customer experience in the way. But that's not

necessarily the case for everybody, not everyone could benefit from GenAI in the same kind of way. But that's not to say that there aren't things that AWS, Loka and customers can do together today. So for that, I would say please do not forget the AI in GenAI.

We have been very fortunate with the GenAI wave and it is great, but that overnight success took 10 years. I started investing in our data and analytics and machine learning swim lane 10 years ago because of the boom that was happening with Silicon and the boom that was happening with big data. That overall wave continues to be present. And the way that I would kind of explain how this all fits in is, GenAI is sort of like the current Mount Everest, but data and the overall possibilities with AI is the Himalayan range. And don't forget where this all fits in and what's possible.

So we'll continue to help customers that have interesting unstructured data problems with GenAI. It's just an amazing time for them. But there are many other customers that have unlocked reservoirs of data, harvesting of data that is in forms that other forms of AI can benefit that AWS has offerings for, that could be unlocked today. So I think balancing those things is probably one of the most important things that I'm trying to focus our customers and our team on.

Sara Armstrong:

Right. Yeah, I appreciate that idea of democratizing the use of machine learning, artificial intelligence, GenAI will continue, and those durable business imperatives, no one's going to want to pay more or get their items slower, right. Exactly. That's a good point. Finally, I wanted to let the audience know that you have your own podcast Bobby called What Fascinates You? Conversations with entrepreneurs, engineers, scientists and visionaries that are bringing world-changing innovations to life. So really enjoyed listening to those podcasts of yours and I want to thank you for coming on Innovation Ambassadors.

Bobby Mukherjee:

It's been a real pleasure. Thank you so much, Sara.