David: Welcome to the Microsoft Industry Experiences Team Podcast. I'm your host David Starr and in this series you will hear from leaders across various industries discussing the impact of digital disruption and innovation, sharing how they've used Azure to transform their business. You can find our team online at aka.ms/indxp or on Twitter at Industry XP.

David: Okay. On today's show, I want to welcome Waleed [Ayub 00:00:39] who is Chief Technology Officer at Rubikloud Technologies. He is a product and technology leader with over a decade of hands on experience empowering talented teams and building an impactful enterprise SAS products.

David: Welcome Waleed to the show.

Waleed: Thank you for having me.

David: Rubikloud is an artificial intelligence company and has created a cloud native, machine learning platform, especially for retail. Waleed, can you tell us a little bit more about Rubikloud maybe and the solution that you created for retail?

Waleed: Yes, I'd be glad to. I'd like to start off by taking a step back and sort of realizing that there's this narrative that sort of has consumed us that retail is dying, that there is this massive sort of apocalyptic kind of story around retail and it goes something like retailers didn't innovate enough, therefore they are failing. It's more complicated than that and I think what's actually happening is there are some fundamental changes that are affecting two sort of major axis of the retail kind of a problem, which is consumer expectations are changing wildly in terms of what we want, when we want it, how quickly and then that's kind of having a secondary effect on the supply chain, being able to forecast the behavior demand and are these things in your supply chain?

Waleed: So in that sort of context, we built out this platform that really focuses on data. Making sure the data itself is accessible, clean and available and sort of a cloud agnostic, environmental cloud native environments and then the second is sort of the machine learning and AI being vertical specific and tackling problems in those two areas.

Waleed: So on one hand, we have a solution that supports merchandisers, manage their price and promotion plans as it relates to forecasting and optimization and on the second hand, on the second area, it's more about a solution that helps marketers and loyalty practitioners build customer strategies and tactics based on data insights and AI.

David: Curious, are you using your customer data to train your models or do you already have trained models in place that you use to just analyze customer data?

Waleed: So it's a bit of a mix of both and that's a great question because it really comes down to both, what's technically possible and sort of what the arrangements we have with our clients allow us to do.

Waleed: We train on each individual client independently, but we sort of inform the larger kind of framework of our models based on various kind of problem areas that we see and I'll give you a quick example.

Waleed: Seasonality is a very big sort of confounder or driver in being able to predict demand in a given timeframe. So we can architect an algorithm that helps us properly identify seasonality as an input into say, a forecasting engine, but then when we actually train that model, we train it on a particular client's data independently of the others so that we're not really mixing data together.

David: Best AI for retail? Why is retail so special?

Waleed: I think we can take it from two perspectives. Again, thinking about the data and how the data needs to sort of be ingested, structured and labeled in order for the second thing, which is the machine learning to be true.

Waleed: So on the firsthand, we have sort of built our own tooling that allows us to express concepts in retail more specifically than you would in a sort of a general way if you're incorporating things like banking or telco.

Waleed: So we have a retail specific data model and ontology around that that allows us to express various phenomena about retail in a very specific way, which then allows our machine learning and sort of the myth of artificial general intelligence is a myth for the very reason that the most advanced AI techniques today are very vertical specific. The algorithms that you build to predict certain things about retail don't really lend themselves to labeling an image or doing other things say in different verticals.

Waleed: So the way that we've built our system to be very retail specific, I believe gives us sort of that edge that allows us to be very relevant and also very custom built for retail use cases and then within that certain sub verticals within retail, like grocery or retail drug, and certain other fast moving goods kind of worlds.

David: You know I absolutely love how you described the myth of AI. How are you using Azure to deliver on the solution that you just talked about?

Waleed: Yeah, I mean, that's a great question, because one of the biggest sort of things that have unlocked our ability to do what we do is cloud and specifically Azure making sort of elastic compute accessible to even the smallest startups like we were in 2013 and 2014.

Waleed: So the democratization, let's say, of infinite compute has really allowed us to provide these types of solutions and services through our platform to our clients, but specifically the technologies around data platforming and data warehousing, things like SQL Data Warehouse, some of the containerization components, and also things like HD insight, which allows us to access parallelization in order to scale out our training and scoring algorithms, has really helped us be nimble and agile in delivering these services.

David: So can you say a little bit more about how you use HD insights in your implementation?

Waleed: Yeah, for sure. There's two primary ways where HD insight helps us out.

Waleed: The first is on that data ingestion component, especially when we're doing sort of batch ingestion as opposed to real time. When we're doing batch ingestion of data we're able to essentially parallelize some of those workloads by using a managed Hadoop service, which HD insight is in order to sort of speed up those processes, make them a lot more scalable and then on a similar token, you can use them for certain machine learning workloads where you can again leverage HD insight and the parallelize capabilities there to be able to run models faster and scale them out.

Waleed: So if you're running a training job on several terabytes of data, you can have that run a little bit faster obviously if you paralyze it across multiple machines which things like HD insight allows us to do.

David: What has your partnership with Microsoft meant for you?

Waleed: There's a couple of axis on which I look at sort of the value of the Microsoft partnership. One of the main ones is the strategic alignment on Go-To-Market and technology.

Waleed: On the Go-To-Market side we've seen how Microsoft has really started to adjust themselves or structured themselves to be vertical specific and that's really helped us because then we can both leverage and have meaningful relationships with the various kind of arms of the Microsoft world very much geared towards our specific vertical, which is retail. Go-To-Market can be different depending on different verticals that you tackle and so having specialization there helps.

Waleed: Then the second being the technology piece, the cutting edge aspect of the technology. We see sort of some of the visionary aspects of what's to come and we're the kind of company that usually latches on onto some these technologies before the mainstream typically does and having Microsoft be a partner in that has been great obviously.

Waleed: Then the second one I would say is really being able to access a partnership kind of world that allows us to sort of enable that Go-To-Market to both help Rubikloud, but then also we can be that sort of retail expert within the Microsoft ecosystem that they reach out to and say, "Hey Rubikloud, what do you know about this particular problem in this vertical, in retail specifically?" and so we get to be that expert, essentially, that vertical expert in that relationship.

David: So you've just validated something that's been going on at Microsoft among the few teams and that is that we've kind of arranged ourselves in industry verticals so that we can speak the language of the customer and it sounds like you're validating that decision.

Waleed: Oh, I think that was a great decision. I think it was one of the decisions that really tilted our focus in terms of being, leveraging, that Microsoft partnership to the extent that that we do now.

David: Now I get to ask you the really fun question. What are some of the more truly disruptive things that you see happening in retail?

Waleed: You know, that's a great question and I think there's two ways to answer that. One of the ways is to really look at, it's kind of the common way that it's done, which is look at some of the sexier or more attention grabbing technologies that exists out there. Things like robots and stores, drones and things like that. I tend to err on the side of the sort of, maybe, the slightly more tangible or pragmatic component of it that's still visionary. It really, for me, it's around the supply chain, being able to take what's a very complex process. In some cases you may be one retailer that has hundreds of suppliers, which then has thousands of suppliers behind them and being able to sort of have this abstracted kind of system that's still fulfills things to your door in a day or something.

Waleed: The complexities that get created there, a lot of the problems within that complexity are really well addressed by certain artificial intelligence techniques and I think that you're going to see a lot of innovation come out of that world, the supply chain world, and you're looking at things like automated fulfilling machines, right? Like there are certain companies that can take delivery routes and completely automate the execution of those delivery routes, direct to customer homes, based on realtime consumer feedback on websites and stores and things like that, which is a very, very challenging problem, but one that is sort of almost engineered for artificial intelligence as a problem space.

Waleed: Then there are similar things, like being able to manage future looking demand. You know, what is my demand going to be six to eight weeks from now given a whole host of things happening today, both in terms of my manufacturing supply and also what consumers are demanding and being able to have strong inventory positions and inventory turns, which ultimately affect the bottom line and top line of a retail company.

Waleed: So those are the kinds of areas where I tend to focus a lot of my attention and see a lot of the innovation starting to happen.

David: This has been an absolute pleasure speaking with you today. Also had the distinct pleasure of interviewing you by myself, which we don't do very often on this show.

Waleed: Thank you so much, David. Yeah, it was a pleasure to chat.

David: Thank you for joining us for this episode of the Microsoft Industry Experiences Team Podcasts, the show that explores how industry experts are transforming businesses with Azure.

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