EPISODE 1069

[INTRODUCTION]

[00:00:00] JM: A credit score is a rating that allows someone to qualify for a line of credit, which could be a loan such as a mortgage or a credit card. We are assigned a credit score based on a credit history, which could be related to work history, rental payments or loan repayments. One problem with the credit scoring system is that it is not internationalized. If I'm going from Brazil to the United States, I have a rental history of Brazil, and that information does not get naturally ported over to the United States. There needs to be a system for translating a foreign credit history to a US credit history.

Nova Credit is a system that makes a credit passport. Nova Credit is a company that allows users in one geographic location to make the credit history that they have built up to have credit in another location, namely the United States.

Brian Regan and Misha Esipov work at Nova Credit and they join the show to talk about how the company works and the problem that it solves.

[SPONSOR MESSAGE]

[00:01:10] JM: The Intrazone is a biweekly conversation and interview podcast about SharePoint OneDrive and related technology within Microsoft 365. Get highlights on usage, adaption and how SharePoint works for you. Subscribe to The Intrazone today. That's The Intrazone, I-N-T-R-A-Z-O-N-E. It’s all about show SharePoint fits into your everyday work life. The goal being to more easily share and manage content, knowledge and applications and to empower teamwork throughout your organization with the technology that you already have.

Subscribe to The Intrazone wherever you get your podcasts. Each episode of The Intrazone covers important topics and information about Microsoft SharePoint, OneDrive and related technology within Microsoft 365, including segments on news and announcements and topics of the week. There're guest perspectives from various users and partners and customers and

there is upcoming events and conferences and workshops. You can find all of this on The Intrazone podcast, I-N-T-R-A-Z-O-N-E.

[INTERVIEW]

[00:02:28] JM: Misha and Brian, welcome to the show.

[00:02:29] ME: Pleasure to be here.

[00:02:30] BR: Thanks, Jeff.

[00:02:31] JM: You both work at Nova Credit, which is a system for getting a US credit history derived from an international credit history, and I'd like to start on the topic of credit history. I was born in the United States. How is my credit history generated overtime?

[00:02:48] ME: Yeah, it's a great question. Misha here. Happy to try to take that one. There's this big and unclear world of consumer credit reporting. It's an industry that's been around for over 100 years. It's dominated by three big players that you may have heard of, Experian, Equifax, TransUnion, and these three businesses effectively have generated one of the most valuable data assets in the world. The way they do it is a very simple mechanism where over the course of many decades they have assembled over 10,000 what are called data furnishing relationships. Meeting they'll go out to basically every lender in the country and get those lenders to provide them with information about people's borrowing and then they will match that information to be able to find every loan that I have and then they make that data asset available back to those lenders for a fee.

[00:03:45] JM: How does the credit history process of the United States differ from the processes in other countries?

[00:03:52] ME: Yeah. Every country got its own flavor for how to think about this. I mean, just a little bit of industry context for you. 20 years ago, the credit reporting industry had about 25 credit bureaus, and today there are over 200 of them around the world. That industry has really

blossomed as a result of the big three US credit bureaus expanding around the world as well as a lot of work by the World Bank and the IFC to build credit bureaus in emerging economies.

The reason that credit bureaus are important is that they ultimately create this sort of safety and soundness of consumer lending where you are rewarded for good behavior and you're penalized for bad behavior. For the most part, every major economy has one. There's only one D20 economy that doesn't, and that happens to be France. I can share a long anecdote as to why. The biggest difference in the world of credit reporting is whether credit data that is assembled is what's called positive or negative. Positive or credit reporting is what we're accustomed to here in the US, which means both the good and the bad is reporting. If you pay your loans on time or if you go delinquent, both the good and the bad is reported to the US bureaus, whereas in other markets like Brazil as an example, they follow what's called a negative reporting environment, which means only the bad is reported.

[00:05:15] JM: If someone comes from another country and enters the United States, they moved to the United States and they want to build a credit history. What is the process that they take when they're coming from a place that has a very different credit reporting infrastructure?

[00:05:33] ME: Yeah. Prior to the Nova's existence, and you may have friends who've had do this. When you first come to the US and you apply for a financial product, whether that's a credit card, an auto loan, a student loan, an apartment lease, even a cell phone plan, those service providers will go and check with the US credit bureaus and the US credit bureaus will say I don't know who this person is. By no fault of your own, you sort of have this like blank slate and you will typically get rejected for those products.

What you end up doing is finding hacks to get started. Those hacks include suboptimal products like secured cards where you'll actually give the bank $500 and the bank will give you a line back for $500 or, you'll ask your friend to put you on their like family plan at T-Mobile, or you'll look to friends and family to cosign something for you. There are a variety of hacks that people had to take.

Fortunately, after four years of hard-working and building data pipelines and infrastructure and data standardization around the world, we can now solve that information asymmetry. The way

we do it is we'll actually go around the world and access an individual's record from their home country only with their consent, only if they voluntarily and explicitly decide that I want this information to come with me to the US that we can then insert that information to provide incremental credit access to somebody that would otherwise be rejected.

[00:07:09] JM: Let's talk a little bit about how a credit history actually gets used in the United States. A credit history is used to inform a decision for a loan or a credit card issuance. What are the important signals in a credit history that will go into the decisioning process for the loan issuer or the credit card issuer?

[00:07:32] ME: It's a great question, and I will do my best to cover that one, but I think we're very fortunate at Nova Credit to have one of the best credit risk and analytics teams on the planet. For those listening, you may be familiar with the FICO score. There's also a product out there called VantageScores. If you go to like creditkarma.com and pull your credit score, what you're actually pulling is a VantageScore. So the creator of VantageScore, Sarah Davies, happens to be our head of risk in analytics. She's actually the person that tasked with the Herculean effort of building a global credit score, which is effectively what we've done.

In terms of the core inputs to that, it it's about are you paying on time? How many trade lines do you have? A trade line means like a credit card would be a trade line, or an apartment lease could be a trade line, or a utility bill could be a trade line. The more trade lines you have, the more experience with debt that you have, generally a higher score.

How many times have you been delinquent in the last 90 days? If you're showing delinquencies, that will hurt your score. Are you carrying a large balance relative to your available balance? That can hurt your score. Ultimately, there are a variety of factors that play into the development of a modern credit score. Those factors can differ slightly around the world, and a lot of our IP happens to sit in how do we standardize the various credit data definitions around the world and develop enhanced attributes, insights, analytics, scores on top of that?

[00:09:03] JM: Tell me a little bit more about the credit bureaus. The credit bureaus in the United States, how are they collecting data and why aren't these credit bureaus international?

[00:09:16] ME: The way they collect data is they've establish these relationships with lenders around the country that provide them with information, and these credit bureaus actually do in fact exist around the world. As an example, TransUnion exists in Canada. Experian exists in several large economies in Europe. Equifax exists in a lot of Latin America. They have expanded around the world, but none of them have their own global solution. They actually have more of a regional focus.

When it comes to this problem of supporting immigrants and newcomers with financial access, none of them can actually solve a significant share of this problem. If you look at their global footprint and map that relative to immigrant inflows into the US, they can each solve about a third of the problem through our existing partnerships with those three providers as well as the various independent bureaus around the world. We can now solve close to two-thirds of the problem.

[00:10:17] JM: And revisiting, before we get to engineering and before we get to Nova Credit, I just want to – A little more about the ecosystem that we're talking about here. In these other countries that have different reporting infrastructure, how much diversity is there? If you're trying to build a common layer for the different credit infrastructures of the other countries, how much diversity is there and how painful is to try to make a system that unifies those?

[00:10:52] ME: You should talk to our data team to really get to the bottom of it. But I think it depends on the country. I'll give you a specific example. Like in India, there is a fairly common form of debt that does not exist in the US system and that is called a gold loan. A gold loan is where you provide collateral to a lending institution in the form of gold that you happen to own, usually jewelry, and they will provide you with a loan that's collateralized by that jewelry. That is a specific trade line that doesn't exist in the US, like yes we have collateralized debt through a mortgage is an example of a collateralized loan, or you collateralize with a house, or an auto loan. But this construct of a gold loan doesn't exist in the US credit system. We have to deal with various cultural nuances that exist around the world to normalize this information into what we call a credit passport, which is the core of our IP, the same way that a passport is how you enter into a new country. Your credit passport is how you access financial services around the world.

[00:12:01] JM: Right. Okay. Explain what Nova Credit does in more detail.

[00:12:06] ME: We've gone around the world and effectively aggregated the global credit reporting industry into a single user experience and API delivery mechanism. What that means in practice is enough, for example, in Mexico, there are two credit bureaus. These are both private sector bureaus or for-profit institutions. They're regulated, certainly, but they're not government entities. We've built partnerships with these credit bureaus, and in doing so, we are given the right through consent of a given consumer to go to that credit bureau and access an individual credit record.

Once we have access to that raw material, we will spend a lot of time refining it into what we – What I just mentioned around, around a credit passport, which is sort of our refined product, our finished product, and then we will deliver that product into an application flow here in the US. The way to think of the user experience is you just moved to the US from Canada, Mexico, the UK, India, etc. We've got about markets that we have partnerships in at this point, and you decide to apply for a financial product here.

We're public, for example, about our partnership with American Express. Let's say you decide to apply for an AmEx. You've never heard of Nova Credit before, but either your friend recommend you should apply for an AmEx or you got hit with an ad or something like that you choose to apply for an AmEx card.

You'll go through a standard application flow, and at one point in the applicant journey, it's determined that you don't have US history. That's where Nova inserts itself in real-time into the applicant flow. We'll then take the consumer through quick user experience to access their foreign history only with their expressed consent and then we will deliver the standardized credit passport in real-time to American Express so that they can parse that information, run their own sets of rules and ultimately in real-time take somebody from a rejection to an approval.

[00:14:12] JM: Right. The example you gave, like someone who came from India and they are applying for an American Express credit card in the United States. American Express would hit your API? Correct? And everything you just described would happen and then American

Express would have what you call the credit passport? What is it? The global passport? Global credit passport? Something like that.

[00:14:43] ME: Credit passport. You got it right.

[00:14:45] JM: Credit passport. Right. American Express basically gets something that they can assess even though this person came from India.

[00:14:54] ME: Exactly. That they did the best they could with the US system, and the US system came back to them. The US credit bureaus then said, “I have no idea who this person is.” Normally, they would reject that person at that point, but rather than rejecting them due to a lack of information, we give the customer the opportunity to import, transfer their foreign history that is delivered in a manner that is instantaneous, standardized, compliant with US standards with additional insights and scores and analytics on top so that American Express can then look at this new piece of data and make a more informed decision and hopefully get somebody approved.

[SPONSOR MESSAGE]

[00:15:41] JM: As a company grows, the software infrastructure becomes a large complex distributed system. Without standardized applications or security policies, it can become difficult to oversee all the vulnerabilities that might exist across all of your physical machines, virtual machines, containers and cloud services. ExtraHop is a cloud-native security company that detects threats across your hybrid infrastructure. ExtraHop has vulnerability detection running up and down your networking stock from L2 to L7 and it helps you spot, investigate and respond to anomalous behavior using more than 100 machine learning models.

At extrahop.com/cloud, you can learn about how ExtraHop delivers cloud-native network detection and response. ExtraHop will help you find misconfigurations and blind spots in your infrastructure and stay in compliance. Understand your identity and access management payloads to look for credential harvesting and brute force attacks and automate the security settings of your cloud provider integrations. Visit extrahop.com/cloud to find out how ExtraHop can help you secure your enterprise.

Thank you to ExtraHop for being a sponsor of Software Engineering Daily, if you want to check out ExtraHop and support the show, go to extrahop.com/cloud.

[INTERVIEW CONTINUED]

[00:17:15] JM: Remind me again, why don't the credit bureaus do this?

[00:17:19] ME: Yeah. It's a great question. There are a whole host of reasons that come down to it's hard to build innovative solutions. It's hard to align these large-scale multibillion-dollar organizations, but at the end of the day, it comes down to how, by virtue of being an independent new entrant that is tech first in our orientation, we've been able to aggregate this space because we can work with everybody and because we are nonthreatening to any one of them.

For example, if Trans Union wanted to go and aggregate their existing bureaus, they could only solve about a third of a problem. If you think about somebody who can only solve a third of the problem going to American Express and trying to get this product into market, that is not a sufficient solution. You need to deal solve this problem for the majority of people that are moving into the US every year, and by virtue of working with every major bureau, we're able to actually get to a critical mass of data supply and data aggregation that makes this product viable.

[00:18:27] JM: Okay. Let's talk a little bit more about what is happening on your backend when American Express hits your API because they want information about somebody who just moved from India. Just give you an overview of – Maybe you could give me an overview and then Brian could maybe shed some more light engineering-wise on what happens when AmEx hits your API.

[00:18:55] ME: Maybe I'll speak a little bit to the user flow in a little bit more detail and Brian can speak to that the technical systems. From a perspective, the way to think about it is, as a newcomer to the US, you are in search of American Express card, right? You want to get approved for this product and there's no other way to do it. In the middle of your application, we emerged in the form of an Iframe on the AmEx page and take you through a workflow that takes

up to a couple minutes, 1 to 2 minutes, that gets us the information that we need to identify you in a foreign bureau to handle the legal compliance regulatory complexity of global data privacy and global consumer reporting and then also to authenticate you in real-time with the foreign bureau based on the unique authentication standards of every country that we work with only then to receive the raw file from the Bureau, standardize it, repackage it, expose it in our API and make that available to American Express.

[00:19:59] JM: Brian, do you want to chat some engineering light?

[00:20:01] BR: Yeah. Definitely. The bureau integrations there, as Misha talked about previously, they are – I think we've been able to identify some commonalities, but really each individual bureau integration is its own beat. I'd say at a high-level, what happens is we go and we attempt to find a record with this credit bureau, bypassing some PII, personal identifying information that we've collected from the user on the frontend. Then the bureau generally will generate some KBA, so some questions that we can present the user to provide some knowledge-based authentication. We'll collect that information. We'll present the questions, collect information, send it back to the Bureau who will then validate the answers to those questions and then we'll pull that report. The report can come in a number of different formats. I think most commonly, it's XML. It could be some fixed with file as well dealing with some very old technologies, which is part of the part challenge in building the products that we happen to be building.

Then once we pull that raw credit report information, there are a number steps that happen in backend, and our systems will interpret that information, will map it. What we mean by mapping is we work with our data team to map the fields that were getting from the credit bureau and then normalize it to match our canonical internal data format. We'll push that information into our Nova scoring system. So we also work with a data team to generate a score based on the information that we're getting for the credit bureau for that particular country and then generate either a PDF or a JSON payload and then pass that backup to the client for rendering.

[00:21:53] JM: Got it. Does the interaction differ from different clients? If there's somebody like – Like if AmEx is requesting the credit passport verssus like a tenant screening product, like this

person form India is applying for an apartment. Does the rental application credit passport differ from the credit card passport?

[00:22:21] BR: It does not. No. But I will say that the data that we be provide the enterprise customer is dependent on that particular configuration and integration. We have the credit bureau data that we have brought on to our platform. We have alternative forms of data. We have scores that we generate. We have scores that the credit bureaus generate, and enterprise uses that information in different ways and we have this modularization effort going on to where we can feature flag things and turn different data streams on and off depending on the needs of customer. But I would say that overall, they're still looking for the same top-level items that you would find on a standard US credit report and using that decision.

[00:23:10] JM: When you reach out to the Indian credit infrastructure, tell me about how you actually get the data. Because I imagine, those systems are highly variable and how technically sophisticated they are? It's unlikely that India and Brazil and everywhere else has a consisted API surface that you can just like request data from. Can you tell me about the different integrations with these different geos?

[00:23:39] BR: Yeah, definitely. There are, as I mentioned, some commonalities. We've kind of identify these three different phases that most credit bureaus happen to implement. The first one is just identification. Does this user – Do you recognize this user? The second is generating the knowledge-based authentication questions, and then the third is actually pulling the report.

As far as the handshaking an the technologies used, that really varies pretty widely. What we see most often is that we're communicating – Getting XML payloads back from these credit bureaus. In some cases, they're building the KBA mechanism purely for us and we're telling them what those questions should look like so that we can properly authenticate the end consumer. It's really on a bureau-by-bureau basis and we've managed to bring on one bureau today that's using JSON, which is a real delight. For the most part, it's just some of these older technologies, which is as an engineer, one of the things [inaudible 00:24:47] Nova Credit, is you don't want to – I don't want to be building things that anybody can build. I think the email to integrate with all these different bureaus and doing a hard work to be able to pull that data into our platform in a common format and present that to our end customer is really challenging.

I think availability is also challenging. We've security concerns. Some of these bureaus we have to spin up infrastructure in that country to fulfill local, legal and compliance requirements. It's really challenging work, and looking for more people that are ready to rise to the challenge.

[00:25:24] JM: Yeah. I mean, this is the moat that I guess you're building. If you imagine like an XML payload coming from India and you've got to build some consistent way of parsing that XML payload and normalizing it with all the other countries that you're interfacing with, it's not an easy thing to solve. What's the infrastructure like for the processing of those different payloads? When you are getting back this payload that's in a format from India that's totally foreign to you, how do you normalize it and make it aligned with the US credit standards?

[00:26:08] BR: Yeah. I can't give enough credit to our internal data team who does a lot of the hard work upfront by looking at the raw data that we're getting from these credit bureaus and then providing us with the format that we need to telling us exactly how we should be mapping this to our internal canonical format.

First step is take that XML and transforming it to JSON is something more usable. We use NodeJS on the backend. We've got JavaScript all over the stack. Much of the boilerplate that is needed for a country integration, actually, we have some code generation tooling that we'll do that first automatically, which has allowed us to increase velocity there. Then we have a common set of middleware for error handling and XML parsing and such.

But once we've got this data and we've transformed it into JSON, we've mapped it into our internal format, then the scoring is also based on the data that we happen to get from our data team. When you're coming up with a credit score, you can do it in a couple of different ways. One is using a population ranking system. Literally, ranking you stacked rank with the rest of the population in your country and then taking math stack rank and comparing it to the US stack rank. The other way to do that is just measuring absolute risk, and that approach is a little bit more nuanced. But the approach that we take is also dependent on the quality of data that we're getting from the credit bureau.

[00:27:44] JM: Got it. Can you tell me more about the structure of the teams at Nova Credit? There's a lot of domain-specific information here obviously, credit infrastructure, for example. How do the requirements for credit infrastructure get translated into conversations to the engineering teams and what are those different teams?

[00:28:10] ME: The core industry domain knowledge sits with the credit risk and analytics team. That this person, Sarah Davies, who I mentioned earlier who built VentureScore. That team is responsible for going around the world, building these partnerships and ultimately developing the formula for how to take that gold loan in India into our overall global data format of the credit passport. They work very closely with the engineering team and the product team to sort of bring together a high-quality of data standardization, user experience, and overall, like uptime and system stability to bring an enterprise- grade solution to market.

[SPONSOR MESSAGE]

[00:29:08] JM: Vettery makes it easier to find a job. If you are listening to this podcast, you are probably serious about software. You are continually learning and updating your skills, which means you are staying competitive in the job market. Vettery is for people like you. Vettery is an online hiring marketplace that connects highly qualified workers with top companies. Workers and companies on the platform are vetted, and this vetting process keeps the whole market high-quality.

Access is exclusive and you can apply to find a job through Vettery by going to vettery.com/sedaily. That's V-E-T-T-E-R-Y.com/sedaily. Once you are accepted to Vettery, you have access to a modern hiring process. You can set preferences for location, experience level, salary requirements and other parameters so that you only get job opportunities that appeal to you. If you have the right skills, you have access to a better hiring process. You have access to Vettery. So check out vetter.com/sedaily and get $300 signup bonus if you accept a job through Vettery. Vettery is changing the way that people hire and the way that people get hired. Check out vetter.com/sedaily an get a $300 signup bonus if you accept a job through Vettery.

Thanks to Vettery for being a sponsor of Software Engineering Daily.

[INTERVIEW CONTINUED]

[00:30:44] JM: Is there much data engineering or data science across the platform or is it mostly just the cleaning up of data?

[00:30:54] BR: This is a timely question. We just went up the data engineering team. We are a data company and we're dealing with the supply and demand of data, and I think as we grow, a data engineering team is going to be a really important function going forward. We do have a data scientist that sits on Sarah Davies' team on the credit team that is analyzing this data, coming up with the mappings and credit scores.

Within engineering, there is no ML function to speak of currently, and the reason for that is we are not loan originators. We're not underwriting. If we were to go to an American Express with some sort of ML-based solution, then we would be able to get a meeting. I think these companies are still very interested in coming up with credit scores the traditional way and rightfully so.

[00:31:43] JM: Hey, Misha, can you tell me more about the b2b market here? Because you're talking about – Basically, what you sell is a product for American Express or the rental infrastructure use case, like coming from India and I want to rent an apartment. I don't have a credit history there. It's in the best interest of the rental company to go out and find my credit history if they can. Tell me more about the different companies that would want to integrate with Nova Credit.

[00:32:18] ME: As I mentioned in the beginning, like the underlying problem is felt most acutely by the newcomer, by the actual consumer, and the problem persists in all sorts of use cases. Getting a credit card, getting an auto loan, getting a student loan, getting a mortgage, getting an apartment lease, getting a cell phone plan. But as a business, we have to go to market and build a product that for each one of those use cases requires some customization depending on how distribution works for those products and such.

From a go-to-market perspective, today we've really focused on going after credit cards, student loans and cell phone plans. Those have really been the three products that we've focused on

and we work with a number of Fortune 500 companies now who really use us for tapping into a customer segment that was previously unavailable to them.

I think that the way to think about the overall value proposition is really a demographic argument, where if you look at US population growth today, about 60% of our population growth comes from migration. What that means is that in any given year, there are more people who are moving to the US than there are Americans born. If you fast-forward 20, 30 years, Americans aren't having a lot of babies and the expected share is that migration needs to drive about 80% of US population growth. That means that there are four times more people expected to be moving to the US than there are new Americans born.

If you are a lender, a telco provider, an apartment leasing company and you don't have a strategy for how to attract and retain this growing share of US population growth, then you demographically lose market share over time.

[00:34:23] JM: How do you find those companies that are looking for a unified credit passport? Do you have a look at an outreach strategy or is it mostly inbound?

[00:34:37] ME: We're really focused on – At least within that within the business of credit cards and telco, those are highly concentrated industries. In cards, the top 10 players are close to 80% market share, In telecom, it's really the top three carriers have the vast majority of the market. We're in the business of well hunting. We are in pursuit of an in partnership with some of the largest companies in, frankly the world, and ultimately unlocking their ability to serve this customer segment more fairly, more equally and instantly.

[00:35:16] JM: Brian, can you tell me about a difficult engineering problem that you're working on right now?

[00:35:22] BR: Yeah. I'm having a hard time choosing, and let me tell you why, because throughout my career, you run into challenges as you're integrating with some ancient API, right? You'll run into challenges as you're working with an enterprise to come up with a solution that's not only secure, but allows them to integrate pretty easily without doing too much work on their end. You run into security compliance challenges as you're protecting the data of your end-

users. I think there are infrastructure challenges as you're thinking about what does it looks like to spin-up servers in China or Australia.

Really, challenges that that you encounter when you need to deliver with really, really high-quality, because your products live on other company's websites. The data you're delivering impacts whether or not the users get a credit card right, right? I encountered some these challenges in different places throughout my career and I would say here at Nova Credit, we have all of those challenges all at once, which is really interesting. I think that that's why Nova Credit engineering is a fun and challenging place to be and that's why I am excited to be here in month number two now and feeling like a kid in a candy shop at all the opportunities that we have in front of us.

[00:36:47] JM: Yes. You were at a firm before. You've seen fintech infrastructure from a few angles. Are there any broad reflections you have on how fintech is changing or how the underlying infrastructure related to financial technology is changing?

[00:37:05] BR: Yeah. I think what we know, and we're getting a validation from customers, is that we can just move much more quickly. We're investigating some things here at Nova credit around bringing on additional valuable data streams on to the platform that can help our customers in the challenging times that we're in right now outside of the data that we have been previously. Sorry to be vague, but I don't think we're ready to unveil some of those efforts up to this point. But as our customers are looking around for different companies that help them solve these problems that they're facing, they're not going to go to an Equifax or TransUnion to solve those problems. They're going to look to a firm or a Nova Credit. I think it's important for us to continue to be surveying the landscape and seeing where we can step in and move quickly to help our enterprise customers and also our end consumers.

[00:37:59] JM: Misha, do you have any reflections from your time building Nova thus far about how fintech more broadly is changing?

[00:38:07] ME: Yeah. I mean from a b2b prospective, which is kind of core to our business. I mean, arguably, we're b2b2c because we do have a critical consumer element. I think to piggyback of what Bryan is saying. If you think about being in the shoes of a bank and trying to

tap into all the innovation that's happening, it takes you a very long time to build a single integration. We're not talking months or sprints. We're talking more like quarters or, unfortunately, a couple years to build a new data integration for them, and that has to do with just how complex their legacy systems are.

In a world where many of the fintech lenders are able to build direct immigrations into a variety of new data sources, that speed of technology adaption is something that banks really struggle with. There are opportunities, and I think Nova Credit is an example of this, of bringing a platform-like solution where through a single partner you're able to access a variety of new data sources that had been used by the fintech ecosystem and you're able to do that with some of the largest lenders and players in the world that bring an incredible amount of scale to that innovation.

[00:39:26] JM: Is the long-term goal of Nova to offer your own credit products to consumers, or do you just see have a line of sight towards the business products at this point?

[00:39:38] ME: Yeah. The way we talk about our long-term vision is the statement a world beyond borders. The basic premise here is that we have a fundamental belief that eventually the world will become a single global consumer finance market. Today, as an American, you can bank with American banks. You can borrow from American banks, and the US financial system is pretty good. It certainly has room for improvement, but on a global scale, it's pretty good. Whereas if you currently live in an emerging economy and your banks may not be as sound or the cost of capital may be quite high, you can really only bank and borrow in the confines of your own country.

Today, the unique capability that we've unlocked is by virtue of being able to move credit data around the world. We can solve the problem of financial access for those who physically migrate. If you physically move from country A to country B, we're the only company in the world that can access your data in country A and use that for your benefit to unlock products in a new market. We solve the problem of financial access for physical migration.

But I think the long-term vision is to take that capability and use it to unlock financial access for digital migration. Meaning, people who don't have plans to or haven't set foot in US but are able

to bank can borrow around the world the same way that you can bank – The same way that you can buy products on Amazon all over the world. The same way that small businesses can actually and corporations can borrow around the world or high net worth people can save money around the world or borrow around the world. That capability is not really been extended to the mass population. The reason for it is ultimately a data problem, and we've sort of laid the foundation to be able to crack that puzzle in the long-term.

[00:41:37] JM: How is the business shifted since COVID-19?

[00:41:42] ME: We're spending a lot of time with our customers and looking for ways to support them. AT the most macro-level, borders are obviously currently shut. So the volume of immigration happening right now is certainly decreased, but I still believe in our board and our investors still believe that we're long-term right that the coronavirus does not kill the American dream. Ultimately, people still want to move here in pursuit of opportunity of education, of employment, of love, whatever your reason for immigration, but there will be some period of time, or the world adjust to this normal and that gives us an incredible opportunity to really look inward and continue to build a category-defining company and world-class product. I think in terms of just the timing of our series B, we were incredibly fortunate to have just raised $50 million round a few months ago. So we get to be in a position of strength and play offense of this environment and continue to bring some of the best and brightest and mission-driven people on the team.

[00:42:46] JM: Okay. Well, Misha and Brian, thank you both for coming on the show. It's been great talking to you.

[00:42:49] ME: Likewise. Thanks for your time.

[00:42:50] BR: Thanks, Jeff.

[END OF INTERVIEW]

[00:43:01] JM: Over the last few months, I've started hearing about Retool. Every business needs internal tools, but if we're being honest, I don't know of many engineers who really enjoy

building internal tools. It can be hard to get engineering resources to build back-office applications and it’s definitely hard to get engineers excited about maintaining those back-office applications. Companies like a Doordash, and Brex, and Amazon use Retool to build custom internal tools faster.

The idea is that internal tools mostly look the same. They're made out of tables, and dropdowns, and buttons, and text inputs. Retool gives you a drag-and-drop interface so engineers can build these internal UIs in hours, not days, and they can spend more time building features that customers will see. Retool connects to any database and API. For example, if you are pulling data from Postgres, you just write a SQL query. You drag a table on to the canvas.

If you want to try out Retool, you can go to retool.com/sedaily. That's R-E-T-O-O-L.com/sedaily, and you can even host Retool on-premise if you want to keep it ultra-secure. I've heard a lot of good things about Retool from engineers who I respect. So check it out at retool.com/sedaily.

[END]