

Albert Chou:

This is IT Visionaries, your number one source for actual insights and exclusive interviews with CIOs, CTOs, and CISOs, and many more. I'm your host, Albert Chou, a former CIO, former sales VP, and now a podcast host.

Randy Kern:

So Marqeta, we use simple open APIs that make it easy for any disruptor, any innovator to now bring a payment card into their system, whether that's kind of a core central part of their business, or even just sort of an aspect of how you do your everyday work. That innovation and the connections and kind of open APIs that let our customers get up and running quickly and easily without being experts in the space, and then still come back and add their special sauce, that's what the category's all about.

Albert Chou:

With the sheer speeding convenience of a credit card purchase, it's easy to overlook the complex systems that make that transaction possible. From the creation of the card itself to the near instantaneous core operation of multiple parties at the time of purchase, there's a lot that we take for granted when we buy like a cup of coffee. Today's guest is Randy Kern, CTO of the modern card issuing and payment processing platform, Marqeta. His stellar business resume also includes years of experience of powerhouses like Microsoft and Salesforce. And on this episode, Randy breaks down the evolution in integration of card payment technology and tells us why Marqeta is changing the game in the credit card space.

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Randy Kern:

Thanks for having me, Albert. It's great to be here today.

Albert Chou:

Hey, listen, before we get too deep into the technology, what I really want you to do is kind of set our audience up because I don't think we understand why this is a problem. Credit cards have been around for a while. You know what I mean? What was the problem with issuing credit cards? I didn't know this was even a problem, give our audience an idea of what's been happening and what Marqeta aims to solve.

Randy Kern:

So modern card issuing, and this is debit cards, credit cards really, and any payment card, it's a surprisingly complex space. And the legacy providers, if you were a company that wanted to use a payment card in your business, or you wanted to provide a payment card, a debit card or a credit card, for your consumers, there was an awful lot you had to do. You had to work with your banking partners. You had to work with the network. You had to buy some technology from a technology provider. And then you had to figure out how to stitch all of that together. You had to run the infrastructure. You had to have the connection to the network.

It's a surprising number of players. When you or I take a card and we go buy some gas or we buy a cup of coffee or something, it seems pretty straightforward, right? It's surprising how many people are

involved in that transaction behind the scenes. And if you were out there kind of doing that yourself and creating that card yourself and doing all that work, there were a huge number of pieces, and a lot of complexity, and whole domains you'd have to go figure out that probably had nothing to do with the innovation that you were trying to bring your customers.

So Marqeta runs all that in the cloud. We use simple open APIs that make it easy for any disruptor, any innovator to now bring a payment card into their system. Whether that's kind of a core central part of their business or even just of an aspect of how you do your everyday work, like on-demand delivery, for instance, that innovation and the connections and kind of open APIs that let our customers get up and running quickly and easily without being experts in the space, and then still come back and add their special sauce, that's what the category is all about.

Albert Chou:

Are your core customers like businesses? For example, every business has or it seems to be that they all have their own card. Coinbase has a credit card. Delta Airlines has a credit card, where you get miles. Hotels have mile points. Every retailer, merchant, or it seems like service, I don't know, everyone seems to have their own card where you can earn some type of special point on their system, seems to be issuing a card. Is that who uses Marqeta? Am I in the right ballpark?

Randy Kern:

Yeah, exactly. We're a B2B business, our customers or other companies, other innovators who want to use payment cards, whether they have direct consumers with those cards, you highlighted a bunch of great examples, like a Delta co-brand card, things like that. Or a company who is using cards, using payment cards, as part of their business, is using on-demand delivery. You need to give a payment vehicle, maybe it's a virtual card, tokenized into a cell phone, maybe it's a physical phone, in order to go buy a purchase and deliver it somewhere. That's an integral part of your business. So our customers or other companies, and sometimes the cardholder is their customer, is their consumer. Sometimes it's an agent or employee or a contractor for that company, as well.

Albert Chou:

As you're talking about this, I'm thinking about back in the day, whether it was Marqeta that figured this out or I think someone else figured this out. I remember back in the day, for example, if I flew on my honeymoon in 2006, and there was a credit card sign up, they would hand out paper pamphlets like, "Yo, do you want sign up?" And I'm guessing that went to some processor in the back end little paper trail kind of business. This is a highly regulated industry. I've been told that, for example, some of the API connections maybe that you currently depend on, probably took a little bit of nudging or a lot of nudging to get put in place. How has the technology transformed over the last, let's say, four or five years, maybe 10 years that's now made this available? Because it really wasn't that long ago where companies couldn't issue cards like this, you had to fill out paper forms, and so on.

Randy Kern:

The whole of space of modernizing the consumer experience that hasn't been long at all. And I flew back into the country a few months back and it was awesome to see how different... I think about paper forms on a plane. We used to have lots of customs forms you get on planes, paper credit card applications, technology, and really the mobile access to the internet has changed a ton of this. In my view, it's changed it for the better in that you have a much more dynamic, much more sort of responsive system. You need to get some help doing it. It's a lot easier than asking a piece of paper what you're

doing. I think it's interesting in the case of Marqeta to think about our journey getting here. So the company's about 12 years old and actually interestingly enough, started in a B2C space.

So we're very much in the B2B model that I just described, but the company started... The kind of the origin story was our founder, Jason Gardner, thinking about how to put Groupon coupons, which actually back at that point were pieces of paper at all as well. You printed them out. You had this piece of paper with this code on it. He said, "I want to figure out how to take this pile of Groupon coupons and put it on a credit card, a consumer credit card that then you could go and use to redeem your purchases." So that kind of started the technical exploration, and figuring out how you interact with the network, how you interact with a Visa or a MasterCard or a Discover or somewhat, and the ISO messages that get sent back and forth and the kind of nitty-gritty technical file format, if you will, are messaging format that makes payments work, that makes payments work across the network, across the card rails as they're called.

About six years ago, then the company kind of took that technology that he had built and the founding team had built and adapted it to this more B2B scenario and kind of went API first and was opening it up for others to innovate and differentiate. But that early kind of genesis, all that work of figuring out what was the nitty-gritty of the card network, of the messages that go back and forth, how do authorizations work kind of really the data flow that's behind what feels like a really normal everyday process. And frankly, when credit cards were first launched, I should know this off of my head, but I think it was in the early '50s, those processes, the settlement process, the authorization process, a lot of that was paper forms as well. So when we really think about how this industry has changed dramatic modernization and dramatic kind of change with the advent of technology.

Albert Chou:

So for anyone out here listening that was born after year 2000, which we have plenty of audience members after year 2000, it used to be back in the day in the '80s, they had these credit swipe machines. These swipe machines literally were physical machines that would press the card into a carbon paper, and then... So this validation, I know you currently validate instantaneously sub-nanosecond, whatever. It occurred in the back office. I don't know how they did it, but they got all their carbon receipts and they go figure out like, "Oh, who's valid? Who's invalid?" It was much harder to get a card back then. Give us an idea of what it takes to... What you're integrating with? How many API calls are you making now, when someone says, "I want to sign up"? How many calls are you making? What's being validated? I'm recognizing that payments is a huge ecosystem. And I think most customers have no idea because just like you said, swipe the card, they get paid, and they're out of there.

Randy Kern:

Yeah. We just use it. It's a fascinating space and it's been a lot of fun to learn because it's also a space where there are remnants of those carbon copy machines. And frankly, I should get one, have it here on my desk so I can show it to folks in the future. But there's sort almost remnants to that, not that we use carbon copies or pieces of paper anymore. But when you think about the whole flow, there's a real-time flow of the authorization when you swipe a card or you make an online purchase to kind of do that validation that you were just highlighting, Albert, to make sure that there are funds available, that it fits within the credit limit, whatever other constraints that payment card may have all the way through then settlement, which is kind of an out of band process that validates all those amounts.

It's kind of the checks and balances to make sure that everything was done, and that's the process where money moves from the cardholders' bank into the merchant's bank as well. And so the whole architecture of this actually is sort of a modern technology first version of what was first run with people

and paper and some really rather impressive physical processes, if you will. Nowadays, the integrations are all software, but they're still relatively simple. The integration for authorization is, like I said, kind of working on this payment rails, you send a standard ISO message or you receive a standard message from the network. What's curious about this is actually part of why modern card issuing is so helpful and so powerful in bringing a product to market more quickly, allowing a company to innovate in what they're interested in and their focus of disruption, instead of just figuring out how to play in the space.

In a lot of cases, this is not just hitting a URL on the web or something. These are sort of more dedicated networks. They're more secure, they're more reliable and they're very tightly connected and managed by those rails, by those card companies. So the Visa, the MasterCard, Pulse, et cetera, these underlying card networks or payment networks, they have pretty specialized gear and the trust and needs to connect to those, and therefore participate in those message flows is pretty complex and quite a bit of work. So it's not thousands of different touch points, but they're very complex. These are message types that have evolved way back effectively from that carbon copy. And now they support cross-border transactions, multiple currencies, all kinds of different things that were never envisioned when the systems first put in place. So the message formats are kind of archaic and complex, then you think about settlement.

Well, that's a whole another file. It's what we call a bank file that we get from the bank and kind of matching all that up and making sure that the right real-time transactions happened and then the right money movement happens after the fact. So it's interesting. It's not a huge wide surface area. Although we have a wide surface area of APIs and interactions that our customers use to customize how they want to use payments and how they want things to work quite a bit. We really connect to our bank partners. We connect to the networks and that's kind of the majority of what we need, but the depth of those interactions and the complexity to make those work 24/7 to make sure that you and I can buy coffee, can buy gas, can get on that plane if we need to, that's really where the hard part lies.

Albert Chou:

And I just went and traveled internationally. So two things I know, right? Number one, I know that not every major banks are on the cloud, that's a fact, not every major... So cloud has not solved everything. You're going to have to connect to data center processes. You're probably going to be limited by whatever speed, of course, that their data can retrieve and make settlements or validations, whatever that API call is. Then like you said, transactions are global. So I just went to Pavones, Costa Rica, which is in the most remote part of Costa Rica down here, the Panama border.

I'm swiping on a terminal that I'm not familiar with. It's probably South America, Central America terminal. I couldn't name it if I wanted to. So I'm swiping on that terminal. So it's got a ring back cross-border to a different currency because I'm buying in Costa Rican colones. It's got to ring back to my bank in America. I don't know what infrastructure they use. It's got to then validate. I have the money, then it's got to agree instead a contract with the processor and the bank on their side that says, "You will get paid," And this has to happen-

Randy Kern:

Within seven seconds.

Albert Chou:

Seven seconds, that's [inaudible 00:13:25].

Randy Kern:

As a tech guy, it feels like an eternity, right? You're like seven seconds. I can do anything in seven seconds, but the reality is it's pretty hard. And it's for the reasons you just highlighted. There are so many players in that cycle, so let's break that transaction down even more, right? You swiped your card on some point of sale device.

Albert Chou:

Correct.

Randy Kern:

That device is from a particular company, that's in the business we call a merchant acquiring. Those are the companies who kind of provide the credit card machinery or debit card machinery, card payment machinery to accept payments on behalf of the merchant via card network.

Albert Chou:

And for our audience, every country has their own companies. This was not a square terminal. This was not a Micros or whatever. It's not something I've never seen. I don't know what it was. It was in Spanish.

Randy Kern:

And it's probably been there a while. And to your point, it probably had a dial up connection. It probably had a phone call that it made with a modem back to that merchant processor or that merchant acquirer, excuse me. That company then in turn needs to pass that message. So you swipe your card. It collects some data from your card, collect some data from the salesperson running the transaction, the amount, the company, et cetera, that you're buying this from, you're making this transaction with. The merchant acquirer then sends all that to the card network on your behalf, maybe you are using a Visa card-

Albert Chou:

Sure.

Randy Kern:

... so that's going to get sent over to Visa. Visa then kind of does some of the processes into their own to validate things. Then it looks at the card number. It looks at all the information that was put on the wire, put on that rail by the merchant acquirer and figures out that, "Oh, that's a Marqeta processor card. That card is powered by the processing task is Marqeta, so that means Visa is going to route that transaction to us. And then we have to do all the work behind the scenes, maybe with your bank, maybe with the company that kind of sponsored your card if you work with a neobank or something in order to decide if we're going to authorize that transaction on your behalf or not.

And that's both cardholder fraud, that's merchant fraud, that's understanding balances and everything else that might happen, the cross border, currency work, everything you just highlighted and outlined. Then the determination to authorize or decline that transaction gets passed back to Visa, pass back to the card rails, traverses the card rails, goes back to the merchant acquirer, goes back down that dial up line and eventually shows up on that terminal saying that the charge was approved and it went through or, "Oh, there's some problem. You need to try it again."

Albert Chou:

That's right.

Randy Kern:

Seven seconds is a long time, but there's a lot that has to happen virtually anywhere in the world within that seven-second window.

Albert Chou:

So one of the truths of engineering software is if I am plugging in, the more third parties I integrate, the harder it gets. And I think most people would agree that to be true, right? Then you add a mix of technologies in different states because I learned this, just working with a couple startups recently, they build and select companies that maintain structured APIs, great documentation. That's how they select their partners. How easy is it to integrate and work together? And in the payments game, you don't have that option. So I'd love to hear your philosophies on how to... I don't even know if you consider it untangling it.

Or do you consider optimizing it because the reality is when you are in the payments world, you cannot dictate to the others what they need to do, and you might not have options, right? When I build software for myself, if I'm a cloud-native company right now, I have options. I could say, "Who's going to be my [inaudible 00:16:54] provider? Who's going to be my assistant and switch provider? Who's going to be my identity provider?" Those things aren't available to you. You're going to have to use what you have available to you because like you just said, you need all these merchants and rails to agree that this is a payment being made. What's your philosophy on how to untangle or optimize that scenario?

Randy Kern:

So the way I think about it is, first and foremost, it's the experience I want to give our customers, right? So the companies and innovators that are using Marqeta's APIs and using our platform and using our expertise to bring payments to their innovation and their disruptions. I want that layer to be as cloud native, as pure, as innovative, as easy to use as you could possibly imagine. Great standards for our APIs, great documentation, development environments, testing tools, simulators, all that kind of stuff to make the experience of consuming us as straightforward, if you will, and as modern as it possibly can be. That's where I start. And then to your point, there's really critical, effectively fixed parts of the infrastructure. They're all evolving and changing, but it's a slow process. And it's going to take a while before all those pieces are really to that level as well.

So think of the Visa, the banks that we integrate with, all of those partners. They provide great APIs in a lot of spots. And there's a lot of spots where it just works the way it does and has for a very long time. So architecturally, in order to keep our engineering and our product teams innovative, to keep them effective and efficient, we try to build our internal service architecture in ways to sort of separate those various concerns and provide maybe a more modern interface. Maybe it's a queue-based interface or maybe it's GRPC or whatever it happens to be inside our system, inside the cloud. And as much as we can, keep those integration points, keep those sort of... It's almost an impedance mismatch. The way we'd like to build microservices and like to build features and functionality inside Marqeta and the way our customers want to, we sort of need to build this sort of impedance measure, if you will, between that world and the frankly much bigger, but in some cases, more difficult to program with world of card networks and banks, and frankly, these very large established systems.

Albert Chou:

It sounds like you're taking cloud native services that you have. If it's not an optimized service, you try to figure out a way to optimize it with existing cloud services. I think I'll give you an example and you tell me if I'm on the right page. I think we did something like this, unbeknownst to me now, and I hear this. We did something this once when we was running a drop shipping store and the main supplier, it was for skateboards, they weren't really that advanced. They used this file EDI. It was basically a CSV sheet and they uploaded it. You could only request it once.

And so we're like, "Okay, well, we have to build a job, basically that request it in real-time," or frequently like a cron job that does whatever period of time, so that we never sell a skateboard that's out of stock. So that's basically what we did, but we used this cloud service so that we had up-to-date inventory accounts because this thing only gave you the file one. You couldn't run an API. So we basically figured out a way around an API and say, "I want this inventory file every time a web visitor hits my site, so I always have the updated counts."

Randy Kern:

That's the exact analogy, right? So I think it was kind of putting a interface service or a more modern API service, if you will, on top of whatever other systems we're integrating with. And frankly, we're talking about this to use for external integration and to help with this cloud versus more legacy impedance mismatch, but the reality is you're involving your own systems. You probably do something like this as well. As you think about... Maybe you've got V1 of one really key, critical piece of your architecture and you have an idea of where it needs to evolve to, but it's hard to do it in place, and you're much more in this spot where you almost need to start another version and work there. One of the first things you do, if you've got a bunch of customers or users of that is you think about how to create a veneer. How to let the old service speak the new API or vice versa so that you can make that transition as smooth as possible? So I almost think about the same thing when I'm thinking about external integration points as well.

Albert Chou:

Another layer to your organization in which you're a part of is this software layer where you're building actual user controls for these payment tools. On one side, it feels like more backend, I would say, type of system, API calls for a lot of companies, if I were to name other companies and be like a Hashicorp, right? It's for developers to use and integrate systems and tools. But then you also have a front end layer. Give us an idea of how you oversee it because you oversee it all. You guys have a software layer, and, of course, you can explain to our audience what it is. Marqeta offers services, where you can put controls, spending limits and things like that. For example, if I'm a company that's issuing cards, I can control it by people. How many digital cards can they create? There's a lot of options basically, and you've built control layers for all of that.

Randy Kern:

And in fact, it winds up even being more complicated than this even. So Marqeta isn't it always when you start to peel something back.

Albert Chou:

Yeah, yeah.

Randy Kern:

Marqeta's a B2B company, but the cardholders, they need experience as well. My customer's customer needs an experience that's right as well. And mostly, that's provided by my customer, but there are a few key spots where we've realized that it's pretty complex. And so we provide building blocks, just direct things you can just pick up and use. And one of my favorites is 3DS. Especially if you make an online transaction internationally, you might get an extra challenge back from the network. A sort of, is this really you? It's almost like the card network version of a CAPTCHA.

Albert Chou:

Yeah, okay.

Randy Kern:

It's kind of hard to do that, right? And arguably that our customers should build that, but we actually provide effectively an SDK and some posted building blocks and components to implement that feature as well as a few other places. If you need to change the pin number on your debit card, for instance, we know what our customers have to build that over and over again. And there's APIs, if you want to, you can do it yourself or you can have us do it for you. So we actually have many layers of things. And I kind of joke with our team, sometimes that Marqeta, at least in the engineering side and the sort of run time, it's an iceberg. There's a huge amount of stuff that's going on behind the scenes that... So these messages flowing in and settlement happening with banks to move money around and all of this really critical stuff so that our customers business and their customers' customers are successful and they're able to buy whatever they need on a regular basis.

But the little bit that peaks up above the waterline is really, really critical, even though it's a relatively small amount of the overall amount of work and sort things that are going on. So I highlighted the piece above that waterline that a cardholder kind of our customer's customer uses, but the bulk of it is for our customers directly. We call that the Marqeta dashboard. It's a web-hosted service. It's got some great analytics, it's got all the control and configuration pieces you had if you were discussing some of our sandboxing and kind of testing features as well. And so that's built by a dedicated team that kind of owns that experience for the whole company and provides a really topnotch sort of enterprise web portal UI, if you will, to manage your usage of Marqeta. And as you say, there's a ton of things you do there. There's configuration. There's operations type things like dealing with chargebacks or disputes.

You need a way to deal with a situation where someone says, "I didn't make that charge." Okay, what do you do? Well, the network lays out all these rules about it, but then the actual workflow so that someone can actually look at it and figure it out and bring it to resolution. These are complicated things. And so the dashboard provides tools and workflow and UI to do all that. And interestingly, our customers kind of go into two categories. One group kind of uses all those tools and runs their card programs themselves, but another group actually leverages Marqeta to do that for them. And so that dashboard I'm talking about is both used by our customers as well as a lot of folks inside the company on a daily basis as well. So it's a really, really important part of the system, even though the iceberg is a lot bigger under the water.

Albert Chou:

But that's why I wanted to ask you because it becomes an everything kind of play. We already talked about... You have the connection layers so that people can build and set up their cards and validate and cross ballot settle payments and all that stuff. But then the management layer, which means you're fielding requests or feature requests from an endless array of people because you hit the nail in that because I was thinking about it as you were talking... I'm going to name some brands. You don't have to



say that they're Marqeta customers, although if you want to, it's fine. I have a Hilton Amex card, but it's managed through the Amex gateway. So the Amex gateway is... And they might be Marqeta customer too, I don't know, but they have their own gateway, right?

And I have a Fidelity card, it's managed through Fidelity's gateway and I have a Target card, it's managed through Target's gateway. So it makes 100% sense that Target and Fidelity their core business is not card management. And therefore, they would want to use your interfaces or APIs to build a simple layer. So they have a card management platform. It's not their core business. They don't know what to expect doing those things. There's like several lines of business. I'm assuming you have project managers over each and every single core product or core business line. And how do you guys envision doing this because it's all integrated, but it's kind of separate?

Randy Kern:

The main business or the original business we have is issuing and processing. And we've kind of grown into that and expanded that obviously with lots of features and capabilities and new ideas and support in that space, but also adjunct things that open up new capabilities for our customers and new experiences as well. We were talking about 3DS and the international support. We launched a product called risk control that does real-time scoring for the sort of fraud probability of a particular transaction that helps our customers make better determinations to approve or deny a transaction. So as we kind of add things in this space, as you'd expect, we have product managers whose day job they live and breathe the domain. They really understand what our customers need.

They spend a ton of time with our customers and with prospects really kind of building out a vision in the future for how they can make this part of the ecosystem, this part of the payments experience far better and far easier for our customers and make it much more approachable, much more effective, kind of API first and modern and allow of a disruptive company to take advantage of more and more capabilities. And once again, focus on their day job as much as possible. So internally, we have product managers, we've got obviously an engineering organization and we primarily use Scrum. Well, we use Agile across the board, depending on the team.

There's a bit of Kanban there. There's a lot of Scrum as well, depending on what kind of work the individual group is doing. But yes, you expect there's product managers dedicated to particular customer segment. In some cases, a particular line of business, whatever granularity that allows you to focus and yet have a broad context. So you're really meeting your customer's needs. And then working obviously hand in hand with the technology organization to build those features, to build that roadmap and then to run and operate the system that we have on behalf of all of our customers. We're involved in their payments, we're moving their money around. I mean, trust and reliability and security really is job number one.

Albert Chou:

I'm trying to imagine your critical incidents dashboard. Listen, I was at a social video management software company and we would know every time like an API call failed, so it didn't bring back tweets. You know what I mean? Because the marketers wanted it, and it felt like it was always going off. You know what I mean? It felt like it was always going off as in something that had happened and we used New Relic and then Splunk to monitor that. And I just like your critical incidents dashboard must be just crazy. I don't know. I think I saw on your website and how many transactions or... Maybe, I don't know your transactions, maybe you could tell me, but it's like 99.99% uptime, all right? And then that equals how many data points a second? It's probably crazy.

Randy Kern:

It's a lot.

Albert Chou:

It's insanity.

Randy Kern:

It's a lot, yeah. When you think about incidents, there's sort of the false positive rate for your alarms as well. So we're constantly working to improve and optimize the detection threshold of those alerts to make sure that we always know if there's even the tiniest problem or frankly in many cases we try to get ahead of it. And if anything starts to even operate in a different way or out of the norm, even if there's no problem yet, we want to trigger an alarm and know about it. On the other hand, we don't want to kill the team and be alerting all the time about stuff that really isn't a problem and isn't going to become a problem. Fine tuning that precision and recall, if you will, alerting and on monitoring, it's obviously a challenge for Marqeta. It's been a challenge in every services job I've ever had, getting good observability and a good kind of precision and recall for alerts or alarms or whatever your organization calls them, it's hard work.

Albert Chou:

Yeah, no doubt about it. The way I say it is when we were in marketing, people would be like... I will always kind of sneakily in my gut, be like, "Nah, it's not that big of a deal." People don't really need to see the most up-to-date tweet by the second. It's not that big, but you're in payments. So this is a big deal. It's got to be up, it's got to be running. When you think about the innovation and the progress that's happening across the payment space, what do you foresee whether Marqeta's going to play a role or not? I mean, it sounds like you guys are. What as we, as consumers and businesses, what are we going to see start happening over the next five, 10 years? Some of the things that you're really excited about that are like, "Hey, this is going to make things easier in payments." I'm really curious what your perspective is because obviously you're on the inside since you're building it.

Randy Kern:

Yeah, it's awesome. You and I have already talked about quite a bit of this. It used to be paper and now it's computerized. Certainly, in my own experience, even just in the last few years, more and more of my... As a consumer, I mean, not in context of Marqeta, but as a consumer, more and more of my experience is centered around my cell phone. And even if I'm using a physical card, I get my balance on my cell phone. I can look at recent transactions and make sure that I know what's going on. I can pay attention to my spending. All of that is really becoming mobile first. And frankly, between that and some of the things around AI that help provide better insights and better data, new kinds of rewards and opportunities to help me save and earn. I think some of these things are really, really exciting.

And when you think about each little individual one, you might go, "That doesn't matter too much," but I know in my experience, we'll look back at a couple years of this innovation and the actual experience as a cardholder, as a consumer is really, really different. And it's much more fine tuned to me. It was interesting when you were talking about, is it critical if they get that one tweet or not? On one hand, you're like, "Yeah, it's just noise. And it's one out of a thousand, who's going to care?" On the other hand, if you're microtargeting, if you're AB testing, if you're trying to really use this to build data and an understanding of your audience, then missing one can be really critical, right?

Because you send out one particular test, one particular scenario and you have completely erroneous data now, as a result of it, you build the wrong inference and you go make a change that's really not appropriate. The parallel here that I'm trying to build is sort of the card program for one, you and I probably both have signed up over the years for the Delta card or whatever happens to be. I think you said Hilton a minute ago, that's a particular audience, right? And we travel. We stay in this hotel. These points are valuable to us, but you and I probably have all the same program. We've got the same rewards. We have the same point structure, et cetera, et cetera. Well, with a much more modern platform underlying all of that, you and I could have a very different program.

Maybe I only travel for work, maybe you only... I wish this was true for you. It probably isn't. Maybe you only travel for pleasure. The kinds of hotels you're going to stay in, the kind of rewards, the kinds of benefits that you and I would need in that world are going to be different. It becomes untenable to get to the point where every single card has a different, almost experience attached to it without a much, much, much more modern platform behind the scenes. Lots of data, lots of AI, much greater abilities to process advantage to these things as opposed to humans needing to kind of set them up and say, "This audience we're going to support this way, and this audience we're going to support that way."

Albert Chou:

When you were talking about the evolution, I started thinking about what have I noticed in the last couple years, things I noticed that I like a lot, real-time notifications of payment that is... I like that.

Randy Kern:

It gives you comfort.

Albert Chou:

It gives me a lot of comfort. I've also noticed that fraud attempts have dropped dramatically in the early 2000s, middle 2000s even. I think everybody got a Walmart charge for \$500. What is this? You would see it and you'd have to dispute it. And of course, most people that disputed them, they would win their judgment, but I know there's a lot of money lost in that process. It feels like fraud has gone down a lot. I know that credit cards, like you mentioned now that they're integrated more to, or I guess the physical card, but also your mobile phone are interconnected, it now knows like, "Hey, you're in location A. There's a swipe in location B. That doesn't seem right. You're not at your computer." I know they can tell that I'm at my computer, so I don't think you're buying something physically in Texas while you're physically in North Carolina. Are you trying to buy this right now? No. You know what I mean?

And I think of all these mainly really noticeable in fraud. I mean, I think that is for sure. Something I've noticed as a better thing. When you think about the future, crypto's all the rage right now, other payment methods, a lot of times that people are talking about peer-to-peer lending. What could potentially happen there? I think peer-to-peer lending can change the world. I really do believe that because of how hard it is to get credit when you are starting a business. It's like really... I mean, for those of you guys never started a business. It's not likely. You can't get credit, right? You might be more likely to get a VC deal than you are to get a credit card issued to you, getting credit of significance is really tough. Where's your perspective on these other alternative forms of payments and alternative funding methods? Are they on the horizon? Are they in the next three years or are they the next 10 years or are they really far away because there's a lot of obviously buzz about these potential new financial tools?

Randy Kern:

My sense is we have these things today. I used Cash App person-to-person transfer, P2P transfer, to pay for something a couple weeks ago, or I guess just last week. I think what's interesting is, how do we bridge all these worlds? That's what's kind of unique about payment cards because they have the reach. I mean, you and I were just talking about international travel, a pretty remote, telephone connected terminal with a modem that you'd never seen before and yet it all worked. And so I think what's really interesting is how do you support a company, how do you support individuals who want to innovate and disrupt and experiment, but give them the best of both worlds.

Give them the reach to all the merchants out there already, all the cardholders out there already. How do you sort of connect these worlds so that you don't have to make this mammoth jump over the wall? You don't have to say, "Well, I'm either kind of in the current main payments economy or I'm going to jump entirely over and I'm going to be in the crypto economy." And I think what's really interesting is, and frankly, what will help those innovations and disruptions and experiments be tested out and the successful ones, the ones that make the world better that remove some frustration or friction or pain from either consumer or a commercial context, you can give them reach. You can give them almost a bridge into the current world, I think that will only help.

And there'll be setbacks in the space. There'll be experiments that don't work. There'll be things that we try that seem great on paper. And when you get out there and really do it, you're like maybe I don't want to buy coffee with my eyeball on a Thursday, who knows what it is, right? But the more we can empower innovators and disruptors and entrepreneurs to try these things, to see what fits to get access to that support, get VC funding, get loans, whatever it happens to be the more these things that are out there and tried, the more likely are that we have real lasting value creation that helps consumers, and it helps commercial enterprises in their needs to make payments and move money each and every day.

Albert Chou:

With the way you describe that, I want to tell a scenario that occurred to me while I was in Pavones, but I couldn't do anything about it. And if what you say comes true, I could have done something about it. So a lot of the local restaurants, they don't... For example, if they're serving fish tacos or something, they're waiting for the fishermen to come in for the daily catch, they purchase it with cash. They have fish, they sell it to the tourists and that's their day. But if the fishermen come back empty handed, they actually don't operate. They don't have fish because some of them don't have enough credit or potentially cash to buy commercial at the market so that they can buy it a retail price, so they can mark out at a restaurant.

I befriended a family there and they asked for some money, I didn't have enough cash to give them money. He was like, "Yeah, give me a hundred bucks. I can pay you back plus this." And I was thinking like, "How far away are we before I can lend that on a credit basis and get paid back digitally?" So I don't have to be there to like, "Oh, did I get paid or not?" As people are swiping cards, I'm getting my repayment back. I just help this guy out in another country. I mean, it feels like the possibility, we're getting pretty close and whether that's becomes widely adopted, I don't know, but it feels possible. It feels like that can be possible pretty soon.

Randy Kern:

I'm a firm believer that the more you open things up, the more good things happen. It's not perfect. And in every incidence is not going to, in the way, we'd all hope. But I really do believe that that kind of accessibility, that kind of openness, being able to do these kind of things is predominantly good. And I think technology can help with that a lot, as you say, if you're a cash-based economy, if you're a cash-

based system, you have to be there right there. There's no escaping. You have to take that brick and move it from one hand to the other, which is kind of the basic innovation in a lot of banking.

Albert Chou:

Yeah. Well, Randy, it was awesome having you on the show. One of the things I always think about before anyone joins us on IT Visionaries is I always think to myself how much innovation could there possibly be in the space. And so the way you describe the problem, the subset, excuse me, the underlying infrastructure of what you were tapping into. I hope our audience got a chance to fully understand or try to understand the complicated web that is payments and the role a company like Marqeta plays in it. It was awesome having you on the show, but before you go, it is time for the lightning round. The lightning round is brought to us by Salesforce platform, the number one cloud platform for digital transformation rare experience. Randy, this is where we ask you questions outside of the realm of work. So our audience can get to know you a little better. You ready?

Randy Kern:

Let's do it.

Albert Chou:

Okay. So if you're not watching us on YouTube right now, Randy's got some slick posters in the background. He mentioned Le Mans earlier in the pre-show, I'm assuming you're a big time car guy. Are you a big time car guy?

Randy Kern:

I especially love motor racing and Motorsports. It's kind of like building software. It's this amazing combination of how do you build a really great device and how do you get people, in this case, the drivers to work together really well.

Albert Chou:

Oh, yeah. And the coolest part is that everyone kind of has the same rules, right? So in a pro race, everyone's got the same rules. So you really are squeezing every last drop of performance out of what basically everyone else has access to, right?

Randy Kern:

Exactly. I've been a Formula 1 fan for a long time and that sort of race for the ultimate race car, the ultimate driver and making that all work together and innovating within the rules, so fun.

Albert Chou:

Have you ever or do you... In the past, have you worked on cars?

Randy Kern:

It's been a long time. I mean, a modern car, it requires so many special tools and so much knowledge that I don't have, but take me back to a carbureted pickup with a few wrenches, that's fun.

Albert Chou:

When you watch racing, who... You said, you're a Formula 1 fan, who do you cheer for?

Randy Kern:

Honestly, I cheer for a good race. Back in the Schumacher days, I was a big Michael Schumacher fan. These days, I just want to see a good race. I want some passing. I don't want anyone to get hurt. I want some good midfield competition and I want the front runners for the season championship to really be up in contention. So whoever's up there is great, just let me have some great racing.

Albert Chou:

Based on your comments throughout the show, I take it that you're a traveler. Would you consider yourself a big time traveler or no?

Randy Kern:

Pre-COVID, I was on the road for work all the time. And in my time off, in my personal time, I tend to travel as well quite a bit. These days, I feel I stay home quite a bit more. And as we talked about technology, making payments kind of evolve past cash where you don't have to be there. You and I are doing this on opposite coast and I feel that while I really do miss being together with folks. It's kind of nice to be able to be home too.

Albert Chou:

Yeah, it's ups and downs. Where's a place that you would like to visit again?

Randy Kern:

Oh, Prague. I don't think I could ever settle down and live in Prague, but it is the most just spectacular, beautiful city I've ever been to.

Albert Chou:

Well, Randy, it was awesome having you on this show, man. It was a lot of fun talking to you, man. Thanks for sharing your love for Formula 1. Thanks for sharing your love for Prague. And also thanks for sharing your love and wisdom when it comes to the world of payments. For anyone out there and you want to check out Marqeta, they got a unique spelling, of course, many tech companies do. You can check out the show notes. It is M-A-R-Q-E-T-A. That is Marqeta. Check them out, Randy. Thanks for joining us today on IT Visionaries.

Randy Kern:

Thanks, Albert.

Albert Chou:

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