



## Title: Meet the CIO: Mike Kelly and NYDIG's Robert Gutmann talk Bitcoin – Part 2

### Introduction

Hi, and thanks to joining us for part two of the conversation between FS Chief Investment Officer Mike Kelly and NYDIG CEO Robby Gutmann. Mike and Robby dive into an overview of NYDIG and what they do, institutional adoption of Bitcoin and the environmental impact of Bitcoin. I hope you enjoy the conversation.

Mike (00:59:40):

Let's talk about NYDIG for a moment. How did NYDIG come about as a firm? And when did you all start it? And when you did, what sort of void in the market were you seeking to fill when you built NYDIG?

Robert Gutmann (01:00:00):

Sure. So NYDIG, as you mentioned, is a subsidiary of a holding company called Stone Ridge Holdings Group. And there are three operating companies within the Stone Ridge Holdings Group umbrella. The first and the largest of those companies is called Stone Ridge Asset Management. And we're an alternative asset manager based in Midtown Manhattan. And the genesis of NYDIG, or the ideas that ultimately became NYDIG, actually started way back in late 2015, early 2016, where the principles... It's a closely held and employee owned firm. We were studying this idea of an open source monetary system and got progressively more fascinated with it, and began accumulating Bitcoin on our balance sheet.

Robert Gutmann (01:00:48):

And, as you guys well know, as an institutional asset manager, managing money on behalf of institutional allocators, highly regulated entity, we went looking for institutional custodians effectively. So we, like you guys, custody, tens of billions of dollars of weird stuff that institutional custodians called one of them up and said, "Hi, I want to put some Bitcoin in my custody account." And the nice gentleman on the other side of the phone said, "Bit what?" And that was our first idea to like, "Oh, this isn't going to be quite so easy as we thought." And so that... Because we're, again, highly regulated, audited, everything we do by EY, we actually needed an institutional solution to do this. And so, that's really where the project started to develop our own solution. And there were really three parts of that at first.

Robert Gutmann (01:01:41):

So, the first was execution. How do you actually turn dollars into Bitcoin in a way that satisfies all stakeholders? Then, once you've done that, how do you store the Bitcoin safely and securely and crucially in a way that your big four auditor understands and can prove that you have control of the position? And finally, there was a lot of accounting work. It was deeply unsexy, but has actually turned into some of our most valuable IP today, as we manage billions of dollars of these assets on behalf of institutional investors. So, the genesis was, really, phase one, we built it for ourselves. And it still today stores actually close to a billion dollars of our individual and corporate holdings in the system. So, we take the operational sanctity and security of the system very seriously.

Robert Gutmann (01:02:28):

Then, we enhance the system to use it to manage co-mingled vehicles inside the Stone Ridge Asset Management business, again, an SEC-registered RIA. Then, we realized that that



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infrastructure had actually had broader applicability. And so, we actually created a separate operating company in the Stone Ridge umbrella called NYDIG. We put all the IP in NYDIG, and turned that into a separate company. And it turns out, in a lot of ways, that... Today, we saw one of the ultimate realizations of that vision. So, we announced today, I don't know if you saw the news, a partnership with FIS, which is the largest financial technology provider to banks in the US, a partnership where actually, through their bank core platform, they're going to use our technology and our regulatory stack to allow banks to offer Bitcoin to their customers.

Mike (01:03:27):

One of the things you're alluding to in there is this spectrum of... and integration, vertically integrated firm that you've built. Can you speak a little bit more to, what advantage does sort of being vertically integrated confer for your clients, those who use your services? Why is that so important? Because it seems very distinct from others in the marketplace.

Robert Gutmann (01:03:52):

We think so. Thank you. So, there are really two advantages that matter to institutional allocators, such as your clients. So, the first is the ease of diligence. So, you can actually diligence the whole process top to bottom. And that's because we've designed and implemented all the processes, all the policies, all the procedures, all the technology. All the regulatory engagement was designed from the ground up to work together to make it possible for a fiduciary to allocate their client's assets to... their client's portfolio to these assets. The second, once you have that out of the way, is cost.

Robert Gutmann (01:04:32):

Because we are vertically integrated, we are able to squeeze a huge amount of the cost out of these offerings. So today, we offer fully all in, cost to us as 30 basis points, to offer delta one exposure to this asset. And as the business scales, we actually expect to see continued economies of scale, and expect to continue to drive prices down from here. We want to eliminate all the obstacles to advisers to being able to allocate. And so, first was the operational complexity, and then second is cost.

Mike (01:05:12):

Right. It feels like every week, or even almost every day these days, we're reading about the increased level of institutional adoption. It seems to be increasing, but it also seems quite early. We've had Tesla and MicroStrategy and others incorporating Bitcoin into their treasury allocations, which could be an absolute game changer. Are you surprised by this development? And can you speak a little bit to where we are in the cycle of institutional adoption?

Robert Gutmann (01:05:50):

Sure. So, I am not surprised by the development. And we are very, very, very, very, very early. But I expect, at some point, every corporation will have some amount of their treasury in, in Bitcoin. So, you mentioned a couple that we've done some work with, Tesla and MicroStrategy. We also do a lot of work with insurance company general accounts. And what we hear from them is really all a variant of the same thing. And it's really a variant of the question your clients could be asking themselves about their clients, which is... On the corporate side, it's "How do I protect the purchasing power of my fiat revenue?" So, when I, Elon Musk, am thinking about building a factory in Texas, or in Germany, or I, Michael Saylor, am thinking about investing in R&D to improve my business intelligence software, and I see the monetary and fiscal policy out in the world, and I want to make sure that I'm in a position invest for the long run, they see Bitcoin as a way to store the wealth that they're generating on behalf of their shareholders.



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Robert Gutmann (01:07:04):

And what we hear from especially life insurance companies, life and annuity companies, is a variant of the same thing. They have very long-dated dollar-denominated liabilities to their policy holders in the form of life insurance, annuities, other products. And they want to make sure they can make good in 30 years when it comes time to pay out to those policies. They take their obligations to their policy holders very seriously. And in a world where those allocators have generally owned IG corporate credit for most of their careers, looking out at the world, it's not at all obvious that owning IG corporate credit is going to get them there.

Robert Gutmann (01:07:45):

And so, they are... And I have to hand them to it. They're very thoughtful. They're very forward-thinking. They're very courageous. They do a lot of work. They're very thorough when it comes time to doing both their investment and operational diligence. But once they decide to do it, they go, and they allocate big. And so, I do continue to see many, many, many companies that look like that, both ones that we're in active conversations with today, the ones that are talking to other providers, as well as people that are not as far along in the journey. I think over the next five to 10 years, you'll see everybody allocating.

Mike (01:18:56):

Great. In addition to Bitcoin, you have Dogecoin and later XYZ coin, et cetera. So, cryptocurrency seems to have unlimited supply, right? It's a sort of a counter to the claim that Bitcoin has limited supply, but cryptocurrencies don't have unlimited supplies. So, how do you tie those two together? How do you think about that?

Robert Gutmann (01:19:24):

Yeah. I mean, I think the analogy... So, we think of Bitcoin differently than everything else, and happy to talk more about that. And I think an analogy would be, sure, there are US dollars and Bahamian dollars. If the Bahamian government makes more Bahamian dollars, does that change the value of the US dollar, just because they're both called dollars? I would argue, no.

Robert Gutmann (01:19:50):

I think those are two independent systems. And I think the exact same analogy holds here. So, the value of Dogecoin is purely... same as Bitcoin, purely reliant on what someone will ultimately give you for a Dogecoin. And my personal view is that that's much less likely to have any value in the long run relative to Bitcoin.

Mike (01:20:18):

And since we're talking about other coins, does NYDIG have a view on the rest of the crypto space, let's put Dogecoin aside for a moment, including ETH, the Ethereum blockchain, and the plethora of alt coins being developed? And does NYDIG plan on offering services and products for this over time? Or is the focus just on Bitcoin, and why?

Robert Gutmann (01:20:40):

Yeah. So, I mean, we view everything through the same lens. And you have to remember we've been looking at this for a long time. I told you our Stone Ridge journey really started in 2015, but a lot of us have been doing this personally for much longer than that. These are all open source software projects. And they're large scale distributed software systems. And I'll give you one analogy or tell you a story from my past. So, Mike, as I think you know, and maybe similar to



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you, I started my career at Morgan Stanley, in the securities division, working for a guy named Alan Thomas, at a time when electronic trading was really kind of clearly starting to displace high touch trading, in the cash world, especially, but in derivatives as well.

Robert Gutmann (01:21:27):

And I learned a lot from Alan Thomas, very grateful to him, and always, always will be. He's a good, good partner of ours. And a couple of the things I learned from him were, number one, we were better in the business. We won business because we were just better than our competitors at producing, and maintaining, and managing large scale distributed software systems. And there were two primary things about why that was. So, the first was, he was really, really, really, really, really careful about making changes to the production system. Clients wanted different things all the time, and that's great. You listen. You write them down. You really make very few changes to a large scale distributed software system running in production. The second is, the longer such a system runs in production, the more valuable it is, the more learning you have, the more value accrues in the system.

Robert Gutmann (01:22:23):

So, when we look at all of these different projects, it's always through that lens. Number one, how does the community that maintains the system approach making changes to the system? And number two, how long has the system been running in production? So, the answer... So, Bitcoin has been running in production for about 12 years now, by far the longest of any of these systems. And we're actually at this point because, as a company, we're pretty focused on Bitcoin, a couple of exceptions I'll share with you. We're actually highly engaged in the software community, in the open source community, that that manages the development process. And one of the things we really like, why all our personal wealth is in Bitcoin and not some of these others, is the way the community approaches making changes to the system is just like Alan Thomas, very slow, very thoughtful, very deliberate, very methodical, very incremental.

Robert Gutmann (01:23:21):

There aren't large scale wholesale changes to the system to try and add more features. And that's a deliberate approach that really, in my view, makes the chances of that long-term a hundred trillion dollar, hundred X outcome possible, even likely. And we today don't see that same approach either in length of tenure, or approach of the community, in any of the other projects. Now again, it just takes time. So, it could be that, in seven years, when Ethereum has been running in production for 12 years, that may change, and when the community is not adding features so fast, could have a different view. But at least today, that's how we view the ecosystem. And so, as a result, our approach is where we are an asset manager, that is where clients pay us for our investment advisory services as a fiduciary, we only invest client assets in Bitcoin.

Robert Gutmann (01:24:19):

If you ask me for my investment advice, my advice is buy Bitcoin. Because again, we are vertically integrated, we have all the pieces of software, and all of the relevant regulatory licenses, and all of the relevant operational processes that we've developed ourselves at scale, we do have more of a prime brokerage type business where high net worth individuals and hedge funds can trade directly with us. In that business, they're much less interested in my opinions about what they should trade, but they do value the robustness of our system, the highly engaged regulatory approach. And so, in that context, we do see about 2% of our business is in Ethereum, where about 98% of the businesses in Bitcoin.



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Mike (01:39:49):

Why NYDIG versus having a client purchase Bitcoin on their own? And maybe you can use a little bit of the answer on this, however, you'd answer it with a little bit more on the security. And because we've all heard the horror stories of lost passwords, and hacks and things of that nature. And so, how does NYDIG address security measures? And maybe you can talk a little bit about cold storage and what that approach confers.

Robert Gutmann (01:40:20):

So the answer I usually give is if you have a client where both of the following conditions are true, they want to buy less than \$25,000 worth, and they don't want you to manage it for them. By far, the best thing to do is use either PayPal or Square Cash App to just buy it on their phone. They shouldn't, that's not really what our product is made for, and it's far easier to just whip your phone out and buy it. That's what I tell people that ask me, "How do I buy Bitcoin?" I say, "Is it less than \$25,000? And do you have a financial advisor that you want to have visibility into it?" "Both of those things are no." "Great, use PayPal."

Robert Gutmann (01:41:08):

If either of those two conditions are met, your client wants to do more than \$25,000, or they want it visible to the financial advisor. None of the direct offerings really, except for ours, are really set up to do that effectively. So it's really hard for you as the financial advisor, even from a mechanical perspective, let alone from a compliance perspective, to manage a PayPal Bitcoin account and report on it in a consolidated way, do gains and loss management, do coherent tax planning, make it part of their estate. None of those things really work if they just buy it on PayPal. So in terms of, okay, once you've said, "I have a client they want to do more than \$25,000 and or they want me to have visibility into it. So now I want to use a provider like NYDIG or use NYDIG specifically."

Robert Gutmann (01:42:07):

We have a range of solutions. We have the funds that are available in partnership with FS. We do have some direct solutions as well. They all use the same integrated technology that Mike has talked about and our approach to security is our system is 100% cold storage, and that's a term of industry jargon. What it means is that the systems that store the passwords, because it's really all in the end, just a password for the Bitcoin. Those systems are never connected to any network, especially not the internet. So they're completely air gapped. We actually use specialized hardware to do this. It's a system called an HSM, a hardware security module. We actually use the same systems the Department of Defense uses to encrypt and decrypt top secret communication. The devices are manufactured here in the United States. We have complete supply chain management from the moment they leave, where they're produced to the moment they arrive at our facility.

Robert Gutmann (01:43:10):

We actually keep those pieces of hardware in extremely high security facility, is actually the highest security facility that are available by law to private citizens, or private companies in the United States. Our neighbors in those facilities are mostly three letter government agencies and our primary facility, it's the department of Homeland Security, that's that's next door to us. It is very, very, very hard to get inside those facilities if you're not invited, three level biometric checks, no foreign nationals allowed inside, 15 year federal level background checks before you can go inside, no one who is not invited gets inside. And then, once you get past all of that, the primary facility is a mile underground and in a limestone mine, you get past the sharks with laser beams on their heads. We actually manage the security of our dedicated cage.



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Robert Gutmann (01:44:05):

It's called essentially a secure facility inside the secure facility where we build out and manage. And so, we manage two completely redundant facilities like this, one is on the east coast of the United States, not in the tri-state area. One is in the Midwest of the United States, completely separate weather patterns, completely separate power grids, completely separate seismic zones. And because of the nature of who is in these facilities, by law, they actually maintain 21 days of backup food, water, and fuel. And by law, local municipal police and fire departments can't get inside. They have their own police and fire departments at these facilities. Local fire department shows up, they're not on the list, can't get inside. And then, within these two redundant facilities, we actually maintain two completely redundant copies of the infrastructure inside. So there's basically four places that are alive, active, hot, accessible at all times that we can actually use to run our business. Happy to go into more detail on that for anyone that's interested, we have a whole eight hour diligence session that we do on that.

Mike (01:48:12):

Do you mine Bitcoin? Do you mine yourselves?

Robert Gutmann (01:48:17):

We do not mine ourselves. We have some equity investments from the NYDIG balance sheet in some of the most sophisticated industrial-scale miners on earth, but they're the operators, we're merely equity investors. And we sit on the board, and help with governance matters. And we actually have a pretty significant miner finance and miner derivatives business as part of all this. So we lend dollars against mining equipment as part of this business. And then the miners use our custody and execution to do liquidation the same systems that we use to manage the funds that your clients would invest in. And we do derivatives, like you might see in any commodities business forward flow, off take agreements, things like that.

Mike (01:49:12):

Right. Thank you. A last one before we wrap up here, there's been a fair amount of media criticism aimed at Bitcoin. I'll put my editorial aside on that. But one of the criticisms has been around the amount of energy usage used to produce these consensus blocks at current prices. And many of us are clearly concerned about the environment and the impact of investment decisions around ESG policies. How do you at NYDIG view this challenge for Bitcoin, given the expectation of even higher prices and therefore much higher energy requirements in the future? And do you believe the criticism is actually fair?

Robert Gutmann (01:49:57):

Yeah. So I certainly believe that the community generally has not done a good job of providing a counter narrative. That is something I think you're starting to see change. Square actually does a lot of really good work about that. And we actually have a lot of work going on in the background and are going to announce some pretty exciting initiatives in this regard as soon as this July. So in that sense, I do think the criticisms are fair in that they're one-sided. I don't think they're correct. And I think they're born of a fair amount of misinformation and lack of understanding about how the system works. One of the things that makes Bitcoin a fundamental shift in how humans think about money is it's the world's first location agnostic consumption of energy. And I think over the next 10 years, what you're going to see is that that is going to make Bitcoin actually one of the first things to transition to 100% or nearly 100% renewable energy as the cost of renewable energy comes down.



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Robert Gutmann (01:51:10):

Because without getting into tons of details about the mechanics of the energy market, when you think about the cost of energy, there's actually two parts to that. There's the cost to produce the energy, and then there's the cost to transmit the energy. And if you think about human development over, even in the United States over the last 300 years or so, where cities develop around places where you can generate energy, but not have to transmit it very far. And so, especially again, take the United States, for example, there is enough geothermal energy in the United States to power the entirety of the United States. But usage rounds to zero because it's physically located in places that are very hard to access. So actually, producing the geothermal energy in the middle of nowhere is easy and cheap, but if you have to transmit it a thousand miles to get it to Buffalo, New York or whatever, it doesn't do you any good because it becomes so much more expensive than for example, burning fossil fuels.

Robert Gutmann (01:52:15):

So what we expect to see, and you asked, "Do we do any mining?" I said, "No, we have these equity investments." And that's really what this is driven by. Is Bitcoin mining in places that are physically inaccessible to human habitation, but not to Bitcoin mining? And whether that's hydro in big waterfalls in Canada or geothermal in the United States, it is going to take a long time to develop. Again, I think 10 years is a good bogey, but all you need is a satellite connection to move the Bitcoin over the internet. And that's I think the thing that we're most excited about from an ESG perspective, and I think we'll look back in 10 years and actually view the Bitcoin industry as a pioneer in this transition to renewable energy in the world.

Mike (01:53:08):

Great. Thanks for that, Robby and really, we're going to wrap this up, just really appreciate your insight and your time. It's been a fascinating conversation-

Robert Gutmann (01:53:23):

Thank you guys so much for having me. It's a pleasure to be here. A pleasure to work with you.

Mike (01:53:28):

Thanks again, Robby.

Conclusion:

This concludes part 2 of the conversation between FS CIO Mike Kelly and NYDIG CEO Robby Gutmann. Please subscribe to the Fireside podcast, and thanks for joining us.