Title: Meet the CIO: Mike Kelly and NYDIG's Robert Gutmann talk Bitcoin – Part 1

Introduction
Hi, and thanks to all of you listening, and I hope that you are enjoying the Fireside podcast. Today we are bringing you a new type of podcast, featuring a recent conversation between FS Chief Investment Officer Mike Kelly and NYDIG CEO Robert Gutmann. This "Meet the CIO" podcast does a deep dive on the investment opportunity today with Bitcoin, with a leading industry expert. In part 1, Mike and Robby discuss the relevance of Bitcoin today, the drivers of adoption and how to think about Bitcoin within an investment portfolio. I hope you enjoy the conversation.

Mike (00:54:09):
So, but with that really honored to have this evening to have a discussion and to speak with, with Robby Gutmann, Robby is a co-founder and CEO of NYDIG. He's also a co-founder of Stone Ridge where he is a member of the firm's management committee and investment committee prior to taking on his role as CEO of NYDIG. Robert served as the head of product development and execution at Stone Ridge overseeing the investment strategy formulation, and serving as a portfolio manager on all of Stone Ridge's funds. Robby received his BA in Mathematics and Music from Columbia University. So thanks Robby for joining us.

Robert Gutmann (00:55:05):
Thanks, Mike. It's a pleasure to be here. Pleasure to be speaking to you and the entire audience tonight.

Mike (00:55:11):
It's great. It's great. Well, I thought what we would do is just start with a real broad philosophical question, which is, "why in your mind is Bitcoin so important? And what does its existence represent to you in your mind?"

Robert Gutmann (00:55:32):
Sure. I'll answer both of those the same, which is in my mind, Bitcoin represents the first time in human history that we have a technology that provides an open source monetary system for every free individual on earth to engage with. And for those of us who were fortunate enough to live our lives denominated in the dollar, it may not be quite so visceral as to why that's so important. But if you live your life, for example, denominated in Argentinian pesos or Venezuelan bolivárs, the idea of an open source technology that you can store your wealth in, store your day's labor in, that's something that's never before existed in human history. And it's literally life-changing to have access to a money that your government can't confiscate or inflate away.

Mike (00:56:26):
Great. Now we probably have a real range of expertise and experience and understanding of Bitcoin generally. So maybe for those here that are not as familiar with Bitcoin and cryptocurrency, can you give us a quick summary of what is Bitcoin, how it works and who creates it?

Robert Gutmann (00:56:50):
Sure. Bitcoin is an open source network. It runs on the internet, just like the open source protocols that run your email or your web browser. Except instead of sending webpages over the network or emails over the network, you use it to send value over the network. That's the easiest way I can think of to explain it. In terms of who created it, it was created by an anonymous person. In late 2009, an anonymous person that called himself Satoshi Nakamoto published a white paper outlining this open source protocol. And the way it's created is through a process called mining. You may have heard that term. And what that is every 10 minutes, the

protocol itself creates new Bitcoin and entities called miners compete to win those new Bitcoin in a process that actually secures the network. So it's a beautifully designed game theory aspect, essentially where the people that secure the network, that make sure that you can trust that your Bitcoin aren't getting stolen by somebody else, they're actually self interested in making sure that the value stays high.

Mike (00:58:17):
Great. That's really helpful. And as we have advisors on here who are allocating on behalf of clients, and thinking about Bitcoin from an investment perspective, can you talk a bit about the major benefits of investing in Bitcoin, and why should clients consider potentially owning it as an investment in their portfolio?

Robert Gutmann (00:58:41):
Absolutely. So, when you allocate a client's portfolio to Bitcoin, really what you're doing is you're making a bet on adoption of this network as open source money. And we have a view both philosophically, but also a tremendous amount of evidence today that this is happening. And I'm sure we'll talk about some of it, that you are actually seeing adoption of this network globally in emerging markets, and actually more and more across corporations and institutional investors, this idea that there will be an open source money that will grow to complement some of the large scale existing fiat networks today.

Robert Gutmann (00:59:20):
So, we don't, for example, think that it will grow to replace the dollar, I still save to send my kids to college in dollars with a financial advisor, but that there will be this other network that will live alongside and compliment systems like the Euro or the dollar or the British pound.

Mike (01:08:23):
Great. For those of us who've been paying attention and investing in the space for some time, there's still some scars, if you will, from what we call the crypto winter of 2017. And maybe you can help us all understand. Why do you think things are different this time around, based on where we are? And what have been the catalysts since that time that have really driven Bitcoin adoption more recently?

Robert Gutmann (01:08:53):
Yeah. I mean, I think the primary catalyst is really the public health crisis that we've seen over the last year and the resulting monetary and fiscal response to that. I think it's hard. Again, the institutional allocators that we talk to in various contexts, it's just hard to ignore the fact that the money supply has gone up 50 to 100%, depending on how you look at it globally. And therefore, everyone is rethinking their portfolio allocation. And so, I think that's the primary catalyst and what's different.

Robert Gutmann (01:09:32):
So this, again, going back to the very beginning, what's going on here, it's really the long-term development of this open source monetary system. What's changed in our mind, in the conversations from say before March of last year, is the really visceral switch of, "Oh, I see now why a global open source monetary system is an important thing in the world." And so, I think that that switched thinking is really just binary different than what we saw, for example, in 2017.

Mike (01:10:06):
Right. You've talked about Bitcoin representing not just this digital asset of value, but also a very powerful open monetary network, using that term network. Can we talk a little bit more about the network effects when we're discussing Bitcoin, both the currency and the network? And why is Bitcoin strengthening as the network grows?

Robert Gutmann (01:10:34):
Sure. So, if you think, any kind of money in human history is just a network. It connects all of us and allows us to trade our time for something that stores the fruits of that time, of that labor. And throughout history, humans have used different things for money, cowrie shells, big stones, gold, funny little pieces of paper. And so, what

gives intrinsically this abstraction lets us move on from a pure barter system "I give you my wheat for your corn" is the idea that we all mutually agree on what the thing, what the common denominator, is that we'll all turn our efforts into.

Robert Gutmann (01:11:26):
And so, by definition, the more people that are on the network, the more people that agree that Bitcoin is money, the more people that agree Bitcoin is money. And therefore, the more Bitcoin is money. Again, not necessarily as a replacement for other forms of money, but as an additional form of money that is global, open source, effectively infinitely divisible, much easier to transport than gold, for example. So, it has this reinforcing effect. And I don't know if we'll talk about valuation metrics. One of the pieces of research that we've done is this idea of using Metcalfe's law as a valuation framework for Bitcoin, similar to things you see in early stage technology companies like Facebook, or Google, or Amazon that also represent the cumulative power of the network effect.

Mike (01:12:24):
Yeah, that's great. When I speak to those who have not yet embraced Bitcoin and incorporated it into their portfolios, I often hear that... words like "I missed the opportunity", or "I wish I had invested in Bitcoin, but I feel like it's too late." And I always interpret that. Part of that seems to be an allocator's question around, what is a reasonable price target for Bitcoin, right? And is it really too late?

Mike (01:12:55):
I know we talked about the adoption cycle still being early. How do you answer the question around, what is a reasonable price target for Bitcoin? Talk a little bit about Metcalfe's law, and maybe some other types of frameworks you can think about that just take some educational models or guesses to give a guiding path as to answering the question of what a price target in the future could look like.

Robert Gutmann (01:13:19):
Sure. So, I'll give you three answers. And you can pick which one you like best. And answer number one is just as a simple observation on this idea of different forms of money. So today, Bitcoin has about a $1 trillion market cap, call it, give or take. Gold has about a $10 trillion market cap, mined above ground gold plus proven reserves. And all the fiat money in the world, give or take, is about a hundred trillion. So, Bitcoin 1 trillion, gold 10 trillion, all the fiat money, a hundred trillion. So, one way to think about a price target is, could Bitcoin become the same size as gold? I think yes. What other people seem to think yes? You have to form your own view on that. So, you could see about a 10x from here. So, if we're at about $55,000, that would give you about $550,000.

Robert Gutmann (01:14:21):
And then, you start to say, "Okay. Well, could Bitcoin go beyond gold in terms of its total market cap?" There, I personally think there are reasons to believe yes, because it's better than gold in a lot of ways, it has the fundamental... It's better than gold in the fundamental thing that makes gold gold, which is it has a fixed supply and a known schedule for how that supply increases, how it comes out of the ground effectively, But it's better than gold in terms of being more divisible, more transportable, and more easily usable by an individual. So, you could see it ending up somewhere between $10 and $100 trillion on this adoption cycle, which again, I think is very, very early. The second answer I would give you, we touched on this already a little bit, is this idea of Metcalfe's law, which is again named after the guy that invented Ethernet, Bob Metcalfe, which says essentially the value of a network is roughly proportional to the square of the number of nodes of the network.

Robert Gutmann (01:15:31):
And again, you see this used in venture capital sometimes as people think about valuing early stage businesses. And it turns out you can actually back fit this model to number of addresses, users effectively, on the Bitcoin network, and the dollar publicly traded price of Bitcoin, with about a 92% r-squared, so very tight fit. And if you look at that and you say, "Okay. Over the next five years, if we see, for example, 25% average annual growth in the number of addresses on the network," which I personally think is relatively conservative

based on what we see in the adoption pipeline, that would actually get you, on this model, about a $300,000 US dollar price target.

Robert Gutmann (01:16:19):
So, answer number one is just abstractly, how much money is there in the world? How much of it will Bitcoin be? Answer number two is this kind of bottoms up participation on the network? And then, answer number three is a much more short term just based on what we see coming down the pipe, in terms of institutions in their adoption cycle onto their balance sheet. Again, this is a very long-term trade for us, a long-term investment. And we didn't recommend it as anything other than a long-term investment. That said, I think you could easily see $150,000 to $200,000 within the next year.

Mike (01:31:13):
Right. Let's turn to risks. So we all know that investors don't get rewarded without taking risks. So when advisors were thinking about allocating the Bitcoin, what are the primary risks that you see an allocator taking for their clients? And why do you think that's a proper risk reward [inaudible 01:31:35] right now?

Robert Gutmann (01:31:37):
Yeah. So I'll give you two answers. So I think there's an obvious answer that in dollar terms you take volatility risk. And so, depending on the emotional management of your client through that volatility risk, that's something that has to be considered as well as where your client is on drawing down against their portfolio. That has to be considered as well. But regarding to your point, you don't get a return without experiencing that in dollar terms. I think at this point, going back to my point about Bitcoin just being an open source software project. In the end, the kind of fundamental risk at this point, why might Bitcoin not go from $1 trillion to $10 trillion or $100 trillion? In my mind, the single biggest risk actually is that software development life cycle and management process. Does the core development community stay disciplined in adding features in testing?

Robert Gutmann (01:32:44):
And again, that's why as we think about protecting our investment and the investments we make on behalf of clients, we are actually progressively more engaged with community helping them think about that, contributing money and time and developers actually to the community to make sure that it continues to be done in a thoughtful first-class way. Because the risk is some bug gets in the system, shuts down the network and going back to our earlier conversation, it's just a network. You have to have a network effect. You have to trust the network. If something happens that impacts trust in the network, that's going to impact value of the network.

Mike (01:29:04):
So there's an increasing view, right? That central banks will soon develop and offer their own digital currencies. So CBDC, central bank digital currencies, what will happen when US government goes digital, re: the dollar? We're seeing it in China, Canada, other places, do you view this as an inevitability and what opportunities and threats is that pose for Bitcoin specifically?

Robert Gutmann (01:29:36):
So I personally do view it as an inevitability. I think it has to happen. And as an American, I certainly think the dollar system could be more easy to access and use. And so, some centralized system that improves the dollar settlement experience, I do personally think that's an inevitability. Exactly what it looks like and exactly how it gets rolled out and when we can actually touch it, my guess is that's a 30 year arc from today. I think if you just think about how deep down in the guts of the world the dollar settlement system is, I think it takes 10 years to design the replacement. I think it takes 10 years to orchestrate, plan, roll out and then 10 years to actually roll it out before you and I are walking around with accounts directly on a ledger at the central bank.

Robert Gutmann (01:30:29):
I personally view that as totally orthogonal, totally unrelated to the investment case for Bitcoin, even a digital dollar is still just a dollar. So that is the supply of them can be arbitrarily expanded and contracted by the central bank. I'm sure, always with the most blessed of intentions, they do what they have to do, but that is a

very centralized controlled system. Whether the way I use it is via credit card or a funny piece of paper or some technology that hasn't been invented yet. The idea still have an open source alternative to that system is very powerful, whether or not there's a digital dollar.

Mike (01:35:45):
Clearly, when we talk about risk, one of the risks we are all assessing is regulatory based. And how do you at NYDIG view where the regulators are with regards to Bitcoin? And how do you see that evolving over the next few years as the regulators are trying to get their arms around this whole space?

Robert Gutmann (01:36:22):
Yeah. So at least in the US where we do most of our regulatory engagement, that we are progressively talking more and more with probably about 30 regulators in countries around the world. So we actually have an entire regulatory engagement practice run by a guy named Ben Lawsky, who before he joined us, was actually superintendent of the New York State Department of Financial Services, where he oversaw the creation of the BitLicense, which is a state regulatory framework in New York State for how regulated financial institutions can deal in cryptocurrency. And it is still today, arguably the most robust and forward-thinking regulatory framework in the world, actually, for digital assets. So we actually have a fair amount of expertise on the topic. So in a lot of ways, the best analogy to how crypto is regulated in the United States today is money transmission, which is to say it's... Or maybe a better analogy might even be insurance markets because in money transmission, you actually do have the opportunity for federal preemption.

Robert Gutmann (01:37:34):
You can just be a bank and do money transmission, that is actually not possible today in crypto. So it actually looks a lot more like the insurance markets, where you actually have to go state by state and talk to every state regulator about offering insurance products in their state. Same thing with cryptocurrency, to really do it right, to accept dollars for crypto on behalf of clients in a fully regulated way, you have to talk to the regulators in all 50 states. And so, that's what we do in our business. Again, we did it backwards for most people because New York is the hardest one by far. We started in New York and then proliferated out to the rest of the country. The tax stuff is more, I mean, that's not something we worry about because we don't facilitate our clients evading taxes in the way that some might. So what's really going on there, it is technically possible in the exact same way it is with cash with US dollars to evade taxes.

Robert Gutmann (01:38:42):
So you take some dollars, you buy some Bitcoin, the Bitcoin appreciates a lot. If you go then buy a Tesla with the Bitcoin under the current US tax regime, even though you've done a transaction with it, you have effectively sold your Bitcoin at the prevailing price at the time from a tax perspective. So you owe US federal and state income tax, capital gains, actually, on the difference between where you bought that Bitcoin and the prevailing price that you used it in a transaction. And for people that use it transactionally and don't report it, that is under reporting their capital gains. And so, the IRS has the right to come after them to understand. Now, of course, in our business, in the fund, you just get a K-1. And in our direct business, we issue 1099s for every transaction, that's part of what we've developed over the last six years or so. So we don't have this concern, our clients don't have this concern, but I can see why other providers that were less sophisticated might have that concern.

Mike (01:17:02):
We’ve all read the news about various firms applying for a Bitcoin ETF here in the US. Where is the SEC on the path to ETF approval? What do you see as the expected timing? And what do you think the repercussions of an approval eventually will be?

Robert Gutmann (01:17:27):
Sure. And one thing I have to say... So, we actually do have an ETF application in. We have submitted it in an S-1. So, I have to be generally pretty careful about what we say here, so some of this may be unsatisfying. I personally don't see it as imminent. I think we will eventually see one. I think it still could easily be one to two

years away, if not more. The SEC has many, many questions about... mostly about market structure at this point. At least based on our experience, it seems like the questions about custody are... They're satisfied, at least in our conversation with them.

Robert Gutmann (01:18:11):
Really, their questions are about market structure at this point. And how can they ensure that individual retail investors are protected? I personally think there are good answers to those questions, but the answers have to be given to the staff. And in terms of implications, I think, by the time the ETF comes, if it comes, we'll be by definition a lot higher than we are today in the dollar price. So, with total transparency about self-interest here, my suggestion would be get off zero before the ETF comes, if there's a product in the market, which we happen to think there is, that that works for your clients.

Mike (01:33:23):
Great. You talked about the volatility, which, obviously, we've seen on both sides, on upside, and on downside. So thinking about it from a portfolio allocators standpoint, how Bitcoin fits into an overall portfolio, how do you you think about sizing Bitcoin and a portfolio? And how do you categorize it as a portfolio allocation? What are you advising institutional clients in that regard?

Robert Gutmann (01:33:59):
Yeah. I mean, I would say, no different from any of your other products, I'm sure the allocators we talk to they view sizing as their job. And so, I would say I wouldn't dream of doing the audience's job for them. I'll tell you sort of what we see ends up depending on the context being between 50 basis points and 5% in the context of an overall diversified portfolio. Obviously, I'm personally allocated much more than that, and we do have clients that are allocated much more than that. But those tend to be special cases or where the risk is kind of exactly the risk they want to take with most of their portfolio. In terms of categorization, at least in the institutional context, we see it show up in a couple places in the portfolio.

Robert Gutmann (01:34:49):
So the first would be the venture portfolio. There are a lot of analogies there, challenge there sometimes is the volatility people aren't used to marking their venture portfolio to market minute by minute, or second-by-second. I think that they'd have a heart attack if they had to, but they don't. So from an underwriting perspective and investment thesis perspective, there's a lot to be said there. The other place we see it show up in big institutions is in the real asset portfolio with the timber and the real estate and the gold. More and more, we are hearing about people or institutions having a kind of dedicated inflation sleeve or bucket in their portfolio that wasn't as true sort of before, about six to nine months ago. And so, we are seeing it show up more and more and more there as well.

Mike (01:45:16):
Thank you. Regarding Bitcoin, aside from appreciation driven by adoption, is there a revenue opportunity afforded Bitcoin holders for either commercial interest or individual holders, i.e capturing transaction fees or lending it out?

Robert Gutmann (01:45:36):
So the answer to the question is yes, though, we have a couple of different strategies that we run that you did not mention. So one is we actually do a lot of call overwriting on behalf of our clients that it looks just like call overwriting you would have seen in any other asset class where depending on how much yield do you want to earn, you write options closer to the money, further out of the money, further out in term, closer in term because the asset is so volatile. There is a lot of yield available in those call overwriting programs. The second strategy that we do today in much smaller scale, but I think this is going to ramp up a lot over the next 24 months is we do a lot of early work today on what's called Layer 2 solutions.

Robert Gutmann (01:46:27):
So these are protocols that ride on top of the Bitcoin network that generally allow much faster transaction times than the base layer, which really isn't designed for that. And those protocols have an inherent yield opportunity to them. That basically, because of the way they work, you can basically commit your Bitcoin to liquidity on the system, which makes the system run harder and faster. And so, the system is called Lightning Pool. Actually, you put your assets in a pool of liquidity, and there's a market clearing price for the price of liquidity on the network. Again, the network is relatively small scale, but it's growing exponentially, you can totally see it. It's a classic exponential growth curve. So we do expect within 12 to 24 months to actually have US Dollar yield products based on engaging with the lightning network.

Robert Gutmann (01:47:27):
One of the things I would say is you have to be really, really, really careful about lending Bitcoin. So we, except in very limited circumstances, do not do that for clients and do not do that with assets in the funds by any means. And the reason for that is the market trades uncollateralized, which anyone that's been in a securities finance business does not compute. You post 102% collateral to borrow US treasuries, which last time I checked were not as volatile as Bitcoin. And there are a whole bunch of weird market dynamic reasons for why that's the case, at least the way we run our business today, don't feel comfortable taking that risk on behalf of our clients.

Conclusion:
This concludes part 1 of the conversation between FS CIO Mike Kelly and NYDIG CEO Robby Gutmann. Please subscribe to the Fireside podcast, and look out for part 2 of this conversation.