

## Fidelity Connects

### The Future of Digital Currency: Fidelity Analyst Panel Series

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**Voiceover:** Hello and welcome to Fidelity Connects, the Fidelity Investments Canada podcast, connecting you to the world of investing and helping you stay ahead. Last year we had re-occurring episodes featuring Joe Overvest, portfolio manager and Director of Research, joined by members of his equity research analyst team. Today, Joe and host Pamela Ritchie are joined by research analysts Nic Bellemare and Max Adelson.

This expert panel will look at what is next for cryptocurrencies, expand on this asset class, and look at how blockchain has changed business models. Joe, Nic, and Max discuss if clients could benefit from this and how Fidelity has positioned itself in this new space. Max points out that Bitcoin has now been around for 13 years. Joe believes we're still in an early stage, and points out he feels fortunate to work at Fidelity, which he says is forward thinking. Also, Nic will expand on how many central banks are now looking at developing a central bank digital currency.

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**[01:50]**

**Pamela Ritchie:** Joe, I'll begin with you. Can you situate us within this, how early we are in the discussions, the process, the discussions around Bitcoin? Fidelity Digital Asset Services has been in the mix for some time. Give us a sense of timelines. Are we still early in the process?

**Joe Overvest:** Thanks, Pamela. We are early. Luckily we work at Fidelity, which has a great reputation of being forward thinking. As you mentioned at a corporate level we've been looking at Bitcoin and digital currencies for a while. At the equity investment level, even the fixed income asset allocation levels, we've been looking at it, and we'll talk about that because there's opportunities, but there's also risks as well with digital currency, so we're very, very early on, and it's time to almost think big because you just don't know what could be available. I'll remind everyone, Google was not even the first search engine, it was Ask Jeeves and others, so even the Bitcoin we talk about today, in a time period later we might not even talk about it because a second or third blockchain, fourth, fifth that we haven't even heard of will come and take its place.

[03:02]

**Pamela Ritchie:** It's really interesting. Max, I'm going to go to you first. Bring us into the loop a little bit on the discussion around Bitcoin miners, why we need to know some of this backdrop?

**Max Adelson:** This is a great discussion. Bitcoin, we've known since 2008, since its creation. During that period we've witnessed the increase of its adoption, but the protocols of Bitcoin, the original white paper that covered it, talked about the gradual increase in supply over time. The supply comes from this source of mining which is a cryptographic process of solving for an equation that completes the Bitcoin blockchain. It completes the entire system, and that process allows for more coins to come into circulation. The mining process becomes economic when the price of Bitcoin goes up and influences more people to invest into the ecosystem. That's why we see these parallels between mining and physical world and mining in the Bitcoin virtual world.

[04:09]

**Pamela Ritchie:** It's absolutely fascinating. Nic, I'll bring you in on this a little bit. At the moment there's not much regulated here. We sort of expect at some point that might come, but just from your perspective looking at things from a financial side of things, a regulated side of things, where are we? Again, very early stage I'm assuming.

**Nicolas Bellemare:** Yes, absolutely. We're still very early stage, and the way I look at the landscape, I would say in three buckets. You have the crypto native companies that have emerged in response to the Bitcoin. So you have the miners, Coinbase is a large exchange, so these ones are really revolutionizing, and they've emerged because of the emergence of Bitcoins and blockchains. Then you have the existing traditional financial players like PayPal or Square, for instance, that have traditional products, but are adding blockchain capabilities. For instance, on PayPal you can now buy Bitcoin. Actually the CEO of PayPal said yesterday that customers with crypto accounts tend to log in twice as much to their accounts. Finally, you have the traditional banks. A lot of banks actually are not embracing Bitcoin because of that regulatory uncertainty and the fact that it's a potential disruption because you have new rails to store, transfer and coordinate capital that are completely decentralized, don't rely on the traditional centralized systems as we've built.

So all of these buckets are trying to find their ways through the new regulatory pathways and it's really in flux at the moment.

[05:49]

**Pamela Ritchie:** Joe, I'll ask you to comment broadly on the potential for financial services to come in here. You just mentioned there are certain issues with how this is all going to work, but the idea that perhaps in a 60/40 there's a place for a Bitcoin account to act as savings to an extent, what's the early architecture that is going on and being discussed?

**Joe Overdevest:** Early on there was probably three things that are missing. As financial institutions they want to see, and their clients as well, is number one more regulation. Especially in the U.S. clear regulation of, is this a commodity, is it a currency, is it an investment vehicle, so regulation. Number two is less volatility. There's so much volatility. People may like stuff going up but actually, as an asset allocator or a financial service company, if they're going to put in 60/40, they don't want so much volatility because they also realize if it goes up that quickly, it can also go down. Especially when you're placing in that 40 bucket that generally has lower volatility, so

regulation, less volatility and lastly is education. A lot of the financial institutions, a lot of investors still don't know what blockchain is or what Bitcoin is and how it fits. That will take time. So almost all three of those buckets will take time before you see mass adoption. You always will see early investors, and we're definitely seeing that, and they're taking toe holds in certain blockchain technologies or digital currencies.

[07:23]

**Pamela Ritchie:** I'll just pick up on that and Max, ask you to go through a little bit of ... the underpinning is obviously the blockchain technology and there are many other currencies, cryptocurrencies that use that. Can you go into sketching out for us what we need to know, what investors need to know about the blockchain technology that's there, how useful it is, its importance. Put it in context. We keep hearing Bitcoin, but really put blockchain in context for us.

**Max Adelson:** That's a great question. I think in technology people often think to analogies. The analogy here would be what is Bitcoin built on? It's built on this distributed database. It effectively is some type of database technology and instead of storing information in one central repository, it's stored in multiple locations around the world, which creates this embedded increase in trust. That's why Bitcoin, we feel, had such a great start in the financial system. As an application it replaced, or it's a substitute, an addition to the fiat currency system, which effectively is centralized. We have central banks that print the currency that are responsible for its circulation. Bitcoin has no central bank. It's governed by a set of rules which were set out in that white paper. So its existence sits in a different structure in that distributed structure. Its popularity has spawned new blockchains, and we've mentioned that a little bit on the webcast so far. I think the important thing to think about, and the way it's being contextualized, is Bitcoin might be this native currency of the internet, and all these other blockchains become the secondary currencies, and Bitcoin becomes almost like the U.S. dollar of the internet.

That's sort of the way it's being spoken about in terms of analogies. Obviously we are far from that going mainstream and there are a lot of hurdles. I think Nic spoke really well about the on-ramps, the things that connect the traditional system with the distributed system. But these are things that continue to develop, and they're compounding on themselves year after year.

[09:45]

**Pamela Ritchie:** Nic, you look at the financials, you look at the financial sector. What kind of disruption does Bitcoin and other cryptocurrencies represent to the financial sector, if at all?

**Nicolas Bellemare:** I think the best way to think about it is it has the potential to be disruptive because basically what is being built here are new rails for storing, moving money around even in the latest frontier, the decentralized finance world, coordinating capital whether you're talking about lending, borrowing, investing, exchanges, all in a decentralized fashion, all through code and the incentives that the tokens provide. So this is still very early days, but every time you have new rails to do something it's potentially a competitive threat. The trade-offs here are the cost of the decentralization is probably more costly because, as Max mentioned, you're having to replicate these database on multiple computers. So it's not as efficient as running an application on a central server. But this is the cost.

The benefit you get is the decentralization or the lack of the need to trust another party. I think as the cost of running operations on blockchains goes down, we will see more and more applications emerge. We'll see some traditional companies, again, embrace it. We talked about Fidelity being in the custody part, we talked about PayPal enabling customers to buy Bitcoin. CME is a major exchange, they have launched futures on Bitcoin and Ethereum, so some companies are embracing it, some are dismissing it as a potential threat, and we'll see where it goes. I think it will be very different 5 and 10 years down the road.

[11:42]

**Pamela Ritchie:** Joe, I'll ask you to step in on the custodial side of it. Sketch out for us what investors need to know. We might go to passcodes in a second and losing those, but just sort of the nature of what investors might expect in terms of some comfort, some sleep at night, that there is a custodial process that is trusted. What needs to be done on that front?

**Joe Overdevest:** It's a great question, Pamela. I think this is one of those interesting things that normally you never worry about, like I bought a stock or I have cash in a bank account, it's going to be there tomorrow. So one of the subtle things, as Max has mentioned, is that a digital currency, especially Bitcoin, what's great about it is also what's bad about it. So let me explain. It doesn't sit somewhere in your wallet, your physical wallet, so it's out there in the digital world, and you have a passcode essentially, a key, to unlock it. This is where we've heard in the news, some people lose their keys, and if you lose your key, that's the whole point is that no bank could touch it, no central banker could touch it but if you forget your key, you can't get it either.

If you're going to be involved with this, I think more than ever, and you want a custodial firm to look after it, I would look very closely who they are and how much trust you put in to them because they are owning your digital currencies and it's digital. It's a lot easier to steal digital currencies than physical gold bars. I think this is where we are early in the innings. I think you have to do a lot of analysis on things that people generally wouldn't worry about, but it's custodians and it's who is actually holding my currency, and do I trust them and more importantly, what are their safeguards? Could someone come in and actually steal my digital currency from them because they don't have the right passcodes or the right protection as well?

[13:39]

**Pamela Ritchie:** Max, I'm sure you never lose your password to anything. I'm sure you have a foolproof system, and that you've never had to ask for a new passcode from anything, but for those of us that do ... first of all, it's not called a password, tell us what it's called, it's your key, but generally just go into that for a minute. How big of a deal is this?

**Max Adelson:** It's a huge deal. I think a lot of research suggests that somewhere upwards of 15% of Bitcoins are effectively lost. They're in wallets that you can see on the blockchain, but no one can access because they don't have the key. So what Joe was referring to is that each wallet holds Bitcoins on the blockchain has two addresses. It has a public key, which it's referred to as, and then it has a private key that allows you to unlock that wallet. These are both cryptographic caches, they're long strings of variables, and they are incredibly difficult, if not impossible, to guess. That means that if you lose that private key or you lose access to it, as Joe mentioned, your coins are gone which effectively has also contributed to volatility in Bitcoin itself. We saw a very high profile failure of an exchange whose private keys got hacked, called Mt. Gox. We saw one in here in Canada called Quadriga several years ago, and keeping those keys safe is of utmost importance.

I think in a broader context it's also reinforced why cybersecurity is another big application on top of blockchain. It's something that's being focused on right now as we use more remote computing, but it's also something that's going to come into much greater focus around storing crypto assets.

[15:31]

**Pamela Ritchie:** Nic, I'll ask you to wade into this a little bit. We know that most countries are working on cryptocurrencies. China for sure is trying it out already. The Bank of England has been one of the more forthcoming, although no one's totally forthcoming, on the fact that they're working on it. Most countries are. Do the countries' new versions of cryptocurrencies and maybe the connection with the banking system in each country, where does that all fit? Is there a disruption there? Do the national cryptocurrencies meet with Bitcoin? Can we go back to those different layers of how a country is built?

**Nicolas Bellemare:** That will be a really interesting space to follow in the next couple of years. Many central banks around the world, including the Bank of Canada, have stated that they want to develop a central bank digital currency. Maybe to level set where that fits relative to the current system, today there's two forms of money. You have central bank money, but it's not in digital form. It's basically the coins and bills in your pocket. Then what we think of digital money are actually bank deposits. Yes, it's digital but it's an IOU of the bank, so there is a level of credit risk there. You're also constrained by the constraints of the bank, whether their technology, the fact that it can take two days for money to move in someone else's account as well as all the fee structure they may impose on your account and for transactions.

What this new paradigm of [indecipherable] central bank digital currency would be, would be the central banks directly issuing a digital currency to the citizens. There are a couple impacts. First of all I think what you can see there is potentially, depending on the design of the CBDC, it could be somewhat disruptive to the way that the banks fund themselves. Now if I can own my money digitally directly with the central bank, I mean, I may not be interested in paying fees to a bank to safeguard my money. That's one aspect.

The other aspect will be it will be very interesting to see how this will play out in terms of fiscal and monetary policy. Today, the central bank plays with interest rate, it's very hard sometimes to see the impact between the interest rates and the direct impact it has on the economy. Maybe they overstimulate housing relative to other parts of the economy. What if they could put a digital currency directly in your wallet and not only money but programmable money where they could say, here's your \$1,000 stimulus, but I don't want you to use it to invest and speculate in the stock market as many people have done, what we want to achieve is maybe you have to spend it within a month to a local business, otherwise it will disappear. So this is a few years out, but I think the emergence of central bank digital currencies could have profound impact on how monetary and fiscal policy is being deployed.

[18:22]

**Pamela Ritchie:** Joe, I want to go to you to ask a little bit about the gold versus Bitcoin question which seems to fly around a lot. I know that you take a very good look at a lot of the miners in this country. It's an area to store value. Are the gold companies worried about Bitcoin and the like?

**Joe Overdevest:** On the gold companies themselves, and probably just the gold industry, they're generally not too worried right now about Bitcoin because it's so early on, but it's something they're doing a lot of work on and watching. Essentially, to your point, we said a number of ways why someone would generally invest in gold for a number of reasons — negative real rates, they're negative on the U.S. dollar, generally it's alternative currency. More importantly, for some people they like it because they'll put it in a vault, and they'll hide it and so when you talk about digital currencies, if digital currencies do what they're supposed to do, which is be an alternative currency and more importantly be away from the view of banks, and central banks and governments, it could do the same thing in a very easier manner because it's very easy to move it and maybe potentially easier to move on the rails since, say, gold. Gold generally isn't used too much for actual purchases these days, it's more just being held in someone's vault or held in a ETF.

I think it's very early on, but it's something I know even our gold team is looking very closely at, making sure Fidelity, we're ahead of this.

[19:56]

**Pamela Ritchie:** There's so many questions. We've hit most of them, how it fits with the banks. I'm going to go to this one, Max, for you. It's a discussion around the idea of how many Bitcoins will be produced. There is a scarcity element to it, and there's this exponential theory that goes along with it that has it valued into the future going exponential when more people in rural communities and all the corners of the earth are online and therefore can access it. At the moment they can't. Where does this go potentially?

**Max Adelson:** That's a great question. The rules around it are that there will only ever be 21 million Bitcoin minted and that mining reward which increases the supply will get lower, and lower and lower over time. So the supply looks like this asymptote to 21 million. What does that mean for the future? Bitcoin is priced in U.S. dollars, that's how we quote it. So asking what's the future of Bitcoin is the same as inverting the question, saying what will happen to the U.S. dollar. Will the U.S. dollar remain the world's reserve currency? Will it maintain its supremacy? That becomes a big geopolitical question in addition to a policy and monetary issue question. We'll see how that plays out. I think the supply of U.S. dollars is up somewhere around 35, 40% year over year, so a lot of things priced in U.S. dollars have gone up including Bitcoin, but we don't know how that policy will unfold over the coming years. That's something that we're watching closely.

[21:38]

**Pamela Ritchie:** Nic, I'll ask you to weigh in on the international trade discussion around it. Do deals one day not get priced in the Russian ruble if China's buying, or do they actually get priced in Bitcoin and again, what does that mean for banks who are doing these deals?

**Nicolas Bellemare:** Some Bitcoiners would love to see Bitcoin be the world's reserve currency. I think we have a long way to go if we ever go there. I think as of now I don't think any central bank is embracing Bitcoin as a reserve asset. This may change or it may go the other way where governments, they like to have the monopoly on money, and they decide to go completely other direction where they want to impair the use of Bitcoin. It's very hard to shut down Bitcoin because it's decentralized, it lives on the internet, so you would have to shut down the internet to shut down Bitcoin. But you can impair the use of it.

I think we're very far from a world where Bitcoin would be the global unit of account. I think there's probably more potential in terms of what we discussed, where there are national, digital currencies where perhaps ... China is certainly ahead of it in terms of rolling out their national digital currency, and could that help them gain a bigger role in terms of pricing international trade? We know the U.S. dollar is really oversized in terms of its size in international trade relative to the size of the United States. So there is a bit of a race there in terms of who can come up with the best potentially digital currency, and that could have an impact on how deals are priced globally. I think it's too early to make a prediction on that.

[23:29]

**Pamela Ritchie:** Joe, I'm going to come to you in a minute to help us think about this as we walk away and take all these pieces of information, but Max, there's a question coming in, I want you to take a crack at this. It's a huge question, you have 30 seconds. Can you leverage on the digital currency? Can it have a house call if it falls? This goes into Bitcoin essentially being used as leverage. How do you see that playing out if at all?

**Max Adelson:** Yes, there is a market to borrow Bitcoin effectively. CME futures, if you sell futures you can be effectively leveraged. We've seen really interesting way of financing in the crypto ecosystem using fiat money. I'll just touch upon that briefly. We've seen some exchanges offer interest rates on the U.S. dollar deposits upwards of 5, 6, 7%, which sounds very appealing, and that money is effectively used to build out their operations which enable people to purchase more cryptocurrencies. So those high interest rates on U.S. dollar deposits are effectively a type of high-risk, or high-cost debt that exists in the crypto ecosystem and that's effectively leveraged. This system, I think part of the beauty of it for the Bitcoin purists is that much of it isn't levered. It's the exact inverse of our fiat financial system that has lots of debt, but there is some debt that underpins the value of Bitcoin today.

[25:11]

**Pamela Ritchie:** Thank you, that's fascinating. Joe, tie this up in a bow for us. This is a lot of information. What do you want investors to go away and know that Fidelity is doing on this front? How should we think about this?

**Joe Overvest:** Investors should take away that Fidelity is on top of this. Much like many things we look at, we want to be doing a lot of analysis, what could hurt, what could help. We have with us Max who takes care of technology, we have Nic who takes care of the banks and financials. We have Lulu who's not with us, but she takes care of gold. All of them just in Canada are definitely watching this space and what could be positives or negatives. Of course, even corporately we're looking at it, and globally we're looking at it, and I think I just want to be very clear that sometimes it's not even the exact Bitcoin or blockchain, there could be companies that would enable this technology — it could even be a bank who uses it in a positive way and differentiates themselves versus their peers, or a technology company that helps people buy this currency and hold it in a very protective way. So there's a number of companies that could be offshoots or different angles that we're looking at very closely. It is early, but that's the Fidelity way. We want to be ahead of the game.

[26:24]

**Pamela Ritchie:** Joe Overvest, Max Adelson and Nic Bellemare, I want to thank all of you very much for this fulsome discussion. I have a feeling there could be a part two in the making. It's a huge topic and a huge area of interest. Thanks again and we'll see you all soon.

Thanks for joining us here. I'm Pamela Ritchie.

*Ending: 26:41*

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