

## Transcript

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### **Episode 76 – Beyond the hype: Blockchain technology**

*Aditya Shanker* - At its core, a blockchain is a distributed database. So essentially it's taking any store of record that previously was only stored at centralized repositories, like maybe a database owned by Google, or a bank. And taking that and creating multiple copies of it and distributing it to different participants around the world. That's one aspect. That's what bitcoin gave us.

*Lamont Black* - I think anybody on the planet, especially if you're in financial services, should be paying attention to this. There's the whole cryptocurrency discussion, which is really transitioning into a crypto-asset discussion. You know, the tokenization of underlying assets. That's going to change the way we think about financial securities and how people hold securities. And then there's all these sort of blockchain applications, just in the corporate sector. So thinking about two competitive firms in the same industry; one's adopting blockchain, one's not. Should that affect where we're investing in that industry. Then finally, could blockchain change wealth management itself?

*Emily Larsen* - Welcome to *Better conversations. Better outcomes.* presented by BMO Global Asset Management. I'm Emily Larson.

*Ben Jones* - And I'm Ben Jones, and on this show, we're going to explore the world of wealth advising from every angle, providing you with actionable ideas designed to improve outcomes for advisors and their clients.

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*Emily Larsen* - Blockchain. You've heard about it 1,000 times by now. It's one of the buzziest concepts of the last year or so. But what is it really? And how does it relate to wealth management?

*Ben Jones* - We're going to explore this with two experts. First, joining us from Chicago is Professor Lamont Black from the Department of Finance at DePaul University. You heard him at the top of the show explaining why advisors should care about this topic.

*Emily Larsen* - And second, in Toronto we sat down with Aditya Shanker, Vice President of Trading Products for BMO Capital Markets. These two guests have been

researching blockchain and its impacts on financial markets for many years. And today we're going to help shed some light on this intensely hyped technology.

*Ben Jones* - We're going to touch briefly on the history of blockchain and cryptocurrencies. Then we're going to dive into the benefits and pitfalls of blockchain technology. Finally, we'll discuss some of the use cases and ways that you can discuss blockchain with your clients. But first, let's define blockchain. Here's Lamont.

*Lamont Black* - I thought a lot over the last few years about how to try and explain this simply. This is a question I get asked by friends and family members. So, one way to think about it is just to break down the word itself, block and chain. So block, one way to think about that is a group of transactions that would be combined and then processed. Chain would be the linking those blocks together. And so one way to think of blockchain is it is a record or history of transactions. Another term that your listeners might have heard is distributed ledger technology. And so blockchain is also an innovation because it's a different way of thinking about a ledger system. So rather than having individual ledgers that then have to communicate with each other, you have a distributed ledger shared among the parties so that everyone can see it. Then it is maintained and updated by the community. And so it's very different than the way we do things today.

*Ben Jones* - And maybe if you could, just maybe share a little bit of a brief history or a back history of blockchain as a technology. Because, it's actually been around for quite a while, but you just recently, in the last several years, started hearing a lot about it.

*Lamont Black* - Sure, yeah. There's a lot of hype around blockchain, but it has been around for a long time. I would say the history is really in computer science. You know, in the field of cryptography. I like to think about the role of bitcoin in that history, and we'll talk more about that I'm sure. But it existed prior to bitcoin, and there's a great computer science paper that talks about the Byzantine Generals Problem. It's a system where you have multiple parties that are trying to reach agreements, and the question is if -- how many of those would have to be truthful versus malicious in order to end up with the right decision. Blockchain is a system for solving the Byzantine Generals Problem. So it has this kind of history in computer science.

*Ben Jones* - You mentioned bitcoin. And so some people mis-associate blockchain and bitcoin. I hear that all the time. But bitcoin is a cryptocurrency. Could you share a little bit about why people might mis-associate blockchain and bitcoin? And then how the technology is being used outside of cryptocurrencies.

*Lamont Black* - Sure. So, you know the two are very much related, but they're not the same. I like to emphasize, actually, the relationship between the two, because I almost feel like the current trend is to separate them entirely. You know bitcoin bad, blockchain good. But, I would say the reason we're talking about blockchain today is largely because of bitcoin, which was introduced -- the Satoshi Nakamoto white paper came out in the fall of 2008, during the heart of the financial crisis. And bitcoin was an

innovation in currency, it's one way to think of it, as digital money. The title, it talks about peer-to-peer electronic cash. But the technology that makes bitcoin work is blockchain. And so bitcoin could not exist without blockchain, but there are many other applications outside the cryptocurrency space.

*Ben Jones* - And, you know, it's interesting because crypto, as you mentioned, is kind of the sexy side of the blockchain. But the technology itself is fairly broadly used. Can you give some examples of how it's used outside of currency?

*Lamont Black* - Sure. So I think the application that I hear a lot of talk about is supply chain management. I think that is a fairly straight forward application because, if you think of this definition I gave, blockchain as a record of transactions, that's really what's happening in a supply chain. You have some sort of raw good that is being passed through this chain of different value add components, or nodes, until it reaches the end user. And so tracking that product through those different steps in the supply chain is very similar to what you're doing with a blockchain, and so the technology works very well for that. Another example is how it's being applied in renewable energy. So, if you think about traditional energy, like we burn coal in a power plant and then that energy is distributed to a circle of users. If you think about renewable energy, you now have the users themselves producing the energy and buying the energy. And so it's more of a network. And blockchain can be very useful for recording transactions when you have that level of complexity, where you have individual nodes that are both producers and users.

*Emily Larsen* - There are many aspects and use cases for blockchain, and we'll explore more later in this episode. Where Lamont uses ledger to describe a blockchain, Aditya uses the word database in his definition. He also brought up Ethereum, an open-source blockchain based distribution computing platform. Listen as he explains.

*Aditya Shanker* - When you look at Ethereum, it gives you smart contracts. And what is smart contracts is basically computer programs, just like a distributed store of data. These are computer programs that run on like a distributed network of computers. So essentially, the big take-away there is that previously you would have one computer program running on one central server, and one company control that. So essentially, theoretically, that company had all the power to do rogue and do all sorts of things when things maybe didn't work out for them. With blockchain, once you deploy a program onto the network, that's it. Like, that program is going to run the way it has been programmed from the moment it's been deployed. So the big take-away there is that a lot of human interactions that required expensive intermediaries, like lawyers and accountants, a lot of those functions -- I wouldn't say you could replace them, but I think you can definitely, by putting them on the blockchain, you can streamline a lot of those functions a lot more efficiently. The way I look at it is, Ethereum gives you the distributed storage, and it gives you smart contracts. So that essentially allows you to, for any real world interaction that you're required to store transactional data, and also enact on that transactional data. So a simple example of that would be, let's say you and I want to take part in an e-commerce trade, right. And you need to ship me

something and I need to give you money. One way we could do that is I could wait for you to ship the goods to me, and then I could just wire you the money. Well there's kind of risk there because I could receive the product, and then I could just forget you. So one way you could achieve -- put this on Ethereum is the two of us could deploy a smart contract where you say that, well, you're going to lock up some Ethereum into the smart contract. And until you've done that, I won't ship you the goods, because that whole act of locking up collateral into that smart contract can be tracked by you. So once I've done that, you can actually go into the Ethereum system and see that, yes, my money is in there. You can ship me the good, and then you can withdraw the money. And smart contract can be programmed in a way that only you are allowed to withdraw it. So that's a very simple use case. I mean, of course there's a lot of assumptions around there, in terms of how I might not withdraw the money, or there might not be a bug or anything. There's a lot of assumptions around there. But this is -- essentially what Ethereum will allow you to do is where you would need something like an Amazon, right, like a huge behemoth like Amazon to guarantee such a level of efficiency, like you can enable that at a very like peer-to-peer way using a platform like Ethereum.

*Ben Jones* - We're going to peel back the onion a little bit deeper into the technology that makes systems like bitcoin work. We're also going to explore the benefits and downsides of using blockchain technology. Lamont mentioned the Satoshi Nakamoto paper earlier, and we're going to pick up that conversation now. The paper was written by an unknown blockchain pioneer who used this as a pen-name. Mr. Nakamoto's paper is linked in our show notes page at [bmogam.com](http://bmogam.com), and you can go there if you'd like to access it.

*Lamont Black* - So my favorite way to try and explain this is actually from the Satoshi Nakamoto paper. I assign that paper to my students, and even if you're not interested in the cryptocurrency side of it, I think the paper's only about eight pages long. What the paper explains very well is, I kind of think of it as two key components to what makes up a blockchain. First is the -- any transaction is made public. It is announced to the network. And so, first of all, what makes this a paradigm shift from our current way of doing things is that our current system, transactions are private, and they are managed by trusted third parties; either like a bank or some other type of custodian or trustee. Whereas, in a blockchain, any given transaction is made public, that's the sense in which it is a distributed ledger. And then, the key question, or the problem that needs to be solved, is who decides which of those transactions are legitimate, and which are not. And so, you know, in our current system, we tend to delegate that to different entities that do settlements, clearing, to make sure that the books balance. So, if you think about it like an accountant with a green eye shade making sure that the left side and the right side line up. Well blockchain, that process in which transactions are verified is it's done by the community itself. And so, if you think about bitcoin, you might have heard about the process of mining. That is the process in which the miners are verifying the bitcoin transactions. And so, in any blockchain system, whether it's crypto or not, you need a form of consensus. And so it is the -- the network itself, which is maintaining the distributed ledger. And so it's a form of accounting, a form of data, which is much more shared than our current way of doing things.

*Ben Jones* - In your example, where you say everything's made public, it doesn't actually say Ben Jones owns this asset, right? It's actually some sort of just identifier that serial number 725 owns this transaction, this transaction, this transaction. Is that accurate?

*Lamont Black* - That is accurate. So, the key thing to understand is there is both a public key and a private key. And so the public key is that identifier that everyone can see. And so, in the example of crypto, like a digital wallet and you can see value moving into and out of that wallet on the public blockchain. But the private key is what the owner of the wallet uses to access that. Therefore, only the true identity of the user is only known to the private key.

*Ben Jones* - And, if you lose that private key, you're sunk, right?

*Lamont Black* - Yeah, there's a lot of funny stories about people who have like inherited or it was a gift that's very valuable now, but they can't find it, so they're trying to use hypnosis and other techniques to try and recover those keys.

*Ben Jones* - When you think about blockchain, and you've described now how it works, what are the benefits of blockchain, and who do the benefits go to?

*Lamont Black* - One way to think about the benefit of blockchain is dis-intermediation. So, blockchain is like a peer-to-peer form of accounting, or data management. And so, by not requiring that additional step of external validation, or data management, then you're basically removing that middle man, and so it's more efficient. And so, there's a lot of excitement about blockchain applications. Many of them come back to we can just sort of -- it's doing bookkeeping at a lower cost, and so it's just a cheaper way of doing it.

*Ben Jones* - So it takes all the frictional costs of the transaction out.

*Lamont Black* - Right.

*Ben Jones* - And in theory, that should benefit both sides of the transaction.

*Lamont Black* - Correct. So, like one application, DePaul is hosting an event tomorrow, focused on supply chain, and one of our panelists was telling me that they're trying to apply this specifically to accounts receivable. So they're a firm that sells natural gas and other products to this distribution network, their customers, and one of their frictions is there's delivery and then the user -- there's any sort of disagreement about the account receivable, then that can create a lot of friction. And so, blockchain is a way of sort of reaching agreement more quickly and more efficiently. So then, ideally, that would lower the cost of doing business, and could potentially lower the cost of selling that product.

*Ben Jones* - There are a lot of firms that take in goods and get account payable out of that good, where the other firm has the account receivable. And they make a good amount of float, waiting to pay that for 90 days, because that's the term of their contract. In blockchain, does that happen instantly? Or does that strategy just go away?

*Lamont Black* - Yeah, that's a good question. What are the implications of blockchain for trade finance? This would be an example where blockchain could be applied to the actual physical product, or blockchain could be applied to the payment for that product. They wouldn't necessarily have to be overlapping and synchronous. So you could have a blockchain that would just record when delivery actually took place, but you could have payment that would be occurring later.

*Ben Jones* - You've talked a little bit about the benefits; it takes a lot of the friction out of the transaction, it's more efficient. But, there has to be some downsides. So, what are some of the downsides or pitfalls of blockchain?

*Lamont Black* - What a lot of people have focused on, as it relates to cryptocurrency, and bitcoin in particular, is like the cost of mining. So there's a lot of concerns about the rise of mining in certain developing countries, like China, and even the energy that's being burned in order to do this. And, what some people don't understand is that bitcoin was sort of that process of mining was designed to be inefficient, because it's a way to prevent a malicious node from overpowering the system. Because it's so costly, no individual node could expend so much energy to overwhelm the entire network. And so it's partly inefficient by design. But, many of the newer cryptocurrencies have entirely different forms of consensus that don't require as much energy, or as much computing power. So even that is evolving. And I would say the other concern about blockchain is, like is it somehow dark or less transparent, which is why many of the enterprise applications that people are considering on the corporate side are typically private blockchains. And so I think there's still this concern that using a public blockchain, whether that be bitcoin or Ethereum or some other public chain that you might be exposing your information to parties that you don't want to be doing that with. So many of the enterprise applications are still sort of -- are called permissioned blockchain, where you get to decide who's inside the network.

*Emily Larsen* - So how are financial services starting to utilize blockchain technology?

*Lamont Black* - Yeah, so, I think a lot of the banks are thinking about this often first in terms of cross-border transactions. And so, if you think about trade finance, or some sort of foreign exchange component, then transactions that involve two entirely different banking systems can be very inefficient. So then you're not just trying to move money from bank A to bank B, but you're from one country to another country. And so blockchain is a way to sort of create an outside alternative for keeping record of these transactions. So I think it can be very efficient in terms of international global payments. And then, another interesting aspect of blockchain is how you think about individuals and how do you keep track of a customer. Right now, we tend to think about some sort of an internal identifier, or maybe some sort of government identifier, like a Social

Security number. But there's a lot of talk around blockchain around digital identity, which could really facilitate things like a credit registry, or thinking about tracking multi products across the same individual. Within banking, I think there's a lot of discussion about this, and then within financial markets for sure. Many of the stock exchanges are exploring blockchain, Australian Stock Exchange is saying they're going to go all-in on settlement and clearing, using blockchain. A lot of discussion in Toronto, NASDAQ, and so I think it's really going to change many of the back office functions in the financial markets as well.

*Ben Jones* - Talk to me like a little bit more about that, because an exchange traditionally has played the role of the trusted third party, or the middle man. And so, when you say they're exploring going all in on blockchain, they're not exploring not becoming the trusted middle man, so how would something like that really work. Because if I think of blockchain, I think about well you no longer need the middle man exchange, but what you're saying is the exchange is trying to become the provider of the blockchain.

*Lamont Black* - Yeah, well so I think of maybe as a difference between like a dealer and a broker. So if you think about a dealer as being an actual part of the transaction, buying from one party, selling to another party. Whereas, a broker is really about trying to bring two parties together, I think the exchange ideally, and this is sometimes how we talk about it in the classroom, it's like supply equals demand. Ideally, it's just bringing together the sellers and the buyers and providing a marketplace or forum for them to meet. And so, I don't necessarily think of exchanges as financial intermediaries, they are financial institutions which facilitate trading between buyers and sellers, and so I think these types of exchanges are sort of thinking about how do we create a system where buyers and sellers, when they transact there is immediate agreement. There's some discussion about T equals zero clearing and settlement.

*Ben Jones* - Today, it's T plus two.

*Lamont Black* - That's right. And so blockchain could potentially facilitate that.

*Ben Jones* - When I started in this business it was T plus three, so gradual progression.

*Lamont Black* - Just to come back to the big idea of blockchain, it's like how do you have multiple parties reaching agreement more efficiently. If you think about an exchange, where you're buying and selling these securities, how do we make sure we're all in agreement on a higher frequency and more efficiently?

*Ben Jones* - These financial institutions, using and exploring blockchain, are an important thing to keep your eye on in terms of your practice, but your clients will be wondering how does this impact me directly? Or, maybe others will be wondering, how can I get in on the action, or should I? How would someone invest in blockchain, the technology, versus buying something that might be more speculative?

*Lamont Black* - Yeah, I think that's a great question, because if you believe in blockchain, but maybe you're still a little unsure about crypto, the question is how do you invest on that belief? What's challenging at this point is that most of the blockchain innovators are still privately held startups. And so if you're not an angel investor it can be hard to get involved, but there are now examples of some ETFs that are attempting to sort of invest in blockchain oriented firms. Now typically, that's not the actually blockchain innovators. It's corporations that are exploring blockchain, so it's a way to get some exposure, but my hope is that over time as some of this goes mainstream, like if a blockchain startup does an IPO, then that can really give investors an opportunity to directly invest in the application.

*Ben Jones* - How do you think that advisors jobs would change or evolve as a result of these?

*Lamont Black* - I think that's an interesting question, because I'm not sure I've heard anyone talk about the immediate impact on financial advisors. There's a lot of discussion now about robo-advising as the dis-intermediation of financial advice, and so automation and sort of algorithmic thinking, artificial intelligence, is closely linked to this. And so there is a potential that blockchain would somehow empower robo-advising to be even more efficient, but when I think about blockchain and this idea of peer to peer, one thing that I was thinking about is could it actually change the way people own financial assets? It might change the nature of custodial relationships. If you think about like one of the big issues in crypto currency right now is how do you store your private key. Many people are now saying if that key is held by a centralized exchange, then it's hackable, and so that's how crypto currency exchanges can be hacked. But if it's a decentralized exchange, and the users are holding their individual private keys, then there's no way for that information or that value to be stolen. Thinking about financial advice, with the potential tokenization of financial assets, with the use of blockchain to record the transfer of value, could we see individuals having more control and more transparency around their financial portfolio?

*Ben Jones* - How do you see the client experience itself changing with respect to blockchain? One thing you already alluded to was potentially getting to T plus zero one day, but what else from a client experience standpoint happens?

*Lamont Black* - I'm not sure I see blockchain as changing wealth management client experience tomorrow. This is I think is going to be a longer horizon, but to the extent that it could, think about the innovations in supply chain. Many of them are trying to figure out how do we interact with our clients in the supply chain without changing their experience, and so having the same user interface, the same portal for uploading information, potentially that could be applied to financial advice, where it's more interactive between the advisor and the client, potentially a blockchain could be a way of recording the actions of the advisor and the interest or the preferences of the client, so that it would improve some sort of interaction between the two. Again, I don't necessarily see that changing tomorrow, but if we think about blockchain empowering

the individual, then it might give them more control, and people might actually get more proactive in wealth management. I think some advisors could view that as a good thing.

*Emily Larsen* - Speaking of financial service applications for blockchain, BMO has been making headlines lately, as it has begun to test use cases for this technology. Aditya takes us through how BMO thinks about using blockchain, and some real world examples.

*Aditya Shanker* - For us, it's very important to objectively define what are the characteristics that make up a use case where blockchain would be applicable. I mean blockchain is not meant to be used for everything, and you should definitely not use blockchains where a centralized cloud application could do the job better, because blockchains are honestly speaking, the overhead of setting it up, and that whole overhead of getting everyone on their platform, that's quite a bit. If you can achieve so we literally start, the first question we ask is what are we trying to do here? Or, can we do that just by building a cloud application? So if we can, and it sounds like a perfect solution, we don't look at blockchain from that point on. The specific use cases that we're more looking at is we're actually looking at what are the rarest activities that take place in capital markets that have intermediaries. Because the big one that bitcoin and all of these other blockchain products have usually the promise that they make is you don't need intermediaries anymore. Like we can use smart contracts to automate the load, so asset issuance is one big area that we are -- that's the pilot that we ran, which was issuing a floating rate note on our blockchain platform. Of course, it was not a blockchain only issuance. Our blockchain was shadowing the primary issuance, which is -- so the bond was still settled in the traditional way, but we did mimic that issuance on our platform. That's one -- I mean so as an investment bank, yes, like you would think if you're connecting, the issuers and the investors directly you are kind of cutting ourselves out of the picture. That's really time will tell how that's going to play out, and what the role of an investment bank will be, and how it's going to involve going forward. There's still a role there for investment banks. Everyone's trying to figure out what their role is going to be in this, but specifically when it comes to looking at use cases, that those are the things we're really looking at is for our clients and -- both our buy side and sell side clients -- if we can use technology to bring down, drastically bring down costs of their transactions, I'm sure there is value in it for them.

*Ben Jones* - And so, I want to talk specifically about the one that you were involved with. Which is the dead offering that you guys did for I believe it was Ontario Teachers. You mirrored it, as you mentioned earlier, but you mirrored this on the blockchain. So maybe just we could break this down where our listeners understand how this is being used, but first of all, what was the thesis or problem that you were solving for?

*Aditya Shanker* - For us, it was really like the whole purpose of this exercise was more about blockchain adoption than really going after a fully use case and solving a problem, because regulation and compliance we knew early on that we could not do a blockchain only issuance. We can, it's just that it would take a lot longer for us to get the green signal from the regulators and our legal team. What we really wanted to do was

test out a very basic use case, and so our problem statement what we said is that, alright so let's get a blockchain environment in place, so let's get a network going. Let's represent a bond on the blockchain, and let's see using capabilities of a distributed ledger, what are the things that are apparent to us that -- so it wasn't, it was more of a journey of discovery than outright stating a thesis, and so once we did it and the way we implemented it, we ended up actually storing a lot of details of the term sheet on the blockchain as well. One big take away from that was that documents that today have to sit on both counter parties or in counter parties. Once you put that on the distributed ledgers, just like that one document, the copy of that document is shared among all of us. If that document is amended by anyone, so you no longer have to have e-mails going back and forth between the back offices. That was one takeaway for us. The second, obviously, being issuing the asset on it. On our blockchain we deployed a smart contract that was tracking who the issuer of the asset was, who the investor was, the term sheet details, the coupon reset, so it was a floating rate now. It paid interest once every month for the 12 months. Nothing on the blockchain that's stored as of today is like non-public information, so there's no element of cash flows or those kind of things. Everything that's stored is you can look up those information on Bloomberg since we publicly announced who the investor was. There was no confidentiality there either. These are the details that we're storing, and so all of these details are on a distributed ledger. Essentially, now this blockchain platform tracks who the owner is and who the issuer is. Which, traditionally would be done by a central institution so there's the take away there that does blockchain enable you to carry out the functions that these intermediaries were carrying out. And if so, if it does, what are the benefits? Are we getting rid of fees that might have been paid to these intermediaries? These are questions that will only get answered once we have a full scale implementation, but at a very high level the benefits and the efficiencies we saw with just being on a distributed ledger allowed us to have more of the details associated with that trade, the back office elements, a lot of that being on the distributed ledger allowed us to essentially share information with each other in a very real time and without needing a lot of back and forth communication.

*Ben Jones* - As you can see, we're just at the beginning of understanding the aspects in which blockchain will be used in our industry. Because it's early, it's unclear if this will be used as a disruptive technology by new entrance into financial services, or a technology that's harnessed by incumbents in financial services. Maybe both. For this reason, it's an important technology to keep up with, as the applications evolve, and the standards and practices will normalize over time. I asked Lamont what areas we should watch out for, and where to go to get information on these topics.

*Lamont Black* - Yeah, so this is a very rapidly changing area, and so I'm, to be honest, a big fan of social media, either LinkedIn, or Twitter, as a way to keep up to date with this. If you think about just like something as simple as #blockchain and keeping an eye on what's coming up. But there are now people writing books on this, and so there's a book called *The Blockchain Revolution*. Don Tapscott is a figure who's sort of emerged in Canada as a leader in the blockchain space, and then the people also in the developer community, so many of the people working in the Ethereum space are coming up with

new applications all of the time. And so, I would encourage the listeners to keep an eye out for these new innovations, because it's constantly changing.

*Ben Jones* - If you were to summarize our entire conversation today, what would you say?

*Lamont Black* - I would say blockchain has the power to function as a public infrastructure for unique ecosystems. And so, if your business has some ecosystem of constituents or clients that could potentially benefit by having some interaction on a blockchain that would not require this sort of third party model, then I think you should explore this. And, I think even for those who are not thinking about it directly in their own business, thinking about how this could potentially transform the way we think about accounting, the way we think about data management, the way we think about financial transactions. Blockchain is a very basic technology that can be applied to many different problems, and as it starts to solve those different problems more efficiently than the way we have seen, there's people who are comparing this to the information revolution. Now, I don't know if it's to that degree, but I'm very excited to be living during this period, so I think we're going to see interesting things.

*Ben Jones* - Very nice. And if you were going to write your own warning label on the discussion today, what would your warning label say?

*Lamont Black* - I think my warning label would be to not be swayed too far to either the upside or the downside. What I find is that there are some people who are really taking very strong positive positions, blockchain is amazing, it's the best. Some people taking very negative positions, this is fraud or foolishness. But, I think it's going to be somewhere in the middle, and so I would encourage the listeners to do their homework, to continue trying to learn just they are through the podcast, so that they can make their own informed choices, and ideally so they can figure out where they can plug in and participate.

*Emily Larsen* - Thanks to Lamont and Aditya for making time to share their insights. We'll have all of the links they mentioned, as well as ways to follow their work, on our show notes page at [bmogam.com/betterconversations](http://bmogam.com/betterconversations).

*Ben Jones* - Thank you for listening to *Better Conversations. Better Outcomes*. This podcast is presented by BMO Global Asset Management. To access the resources discussed in today's show, please visit us at [www.bmogam.com/betterconversations](http://www.bmogam.com/betterconversations).

*Emily Larsen* - We love feedback, and would love to hear what you thought about today's episode. You can send an e-mail to [betterconversations@bmo.com](mailto:betterconversations@bmo.com).

*Ben Jones* - And we really respond.

*Emily Larsen* - We do.

*Ben Jones* - If you thought of someone during today's episode, we would be flattered if you'd take a moment and share this podcast with them. You can listen and subscribe to our show on Apple Podcasts, or whatever your favorite podcast provider is. And, of course, we would very greatly appreciate if you'd take a moment to rate or review us on that app. This show and resources are supported by a very talented team of dedicated professionals at BMO, including Pat Bordak, Gayle Gipson, Matt Perry, Derek Devereaux. The show is edited and produced by Jonah Geil-Neufeld and Annie Fassler of Puddle Creative. And these are the real people that make this show happen, so thank you. Until next time, I'm Ben Jones.

*Emily Larsen* - And I'm Emily Larson. From all of us at BMO Global Asset Management hoping you have a productive and wonderful week.

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