



Episode 1,112: Not Just Bitcoin: What Else Blockchain Technology Can Do

Guest: Anthony Rozmajzl

WOODS: Tell me about this conference, because of course you did win first prize in the Thomas E. Woods Prizes. No hiding that. What exactly was this? I think it's a very important transmission belt for young people into our movement and into our wing of the Austrian school, let's say.

ROZMAJZL: Absolutely. So the Austrian Student Scholars Conference was held at Grove City about a month ago, and this was an opportunity for young Austrian scholars, undergraduate, graduate students as well, to come to Grove City and present some topics of research that they had been working on within the Austrian tradition and present them at Grove City College in front of the economics faculty, fellow economics majors, and just present their ideas.

WOODS: So you ended up winning first prize on a paper on the subject of...?

ROZMAJZL: Yeah, the subject of blockchain technology.

WOODS: Yeah, how about that, that that wins first prize? It is a testament both to the quality of the paper and to I think the growing interest in this general subject. So you really were in the right place at the right time with this. So I'm going to be able to link, it turns out, to your paper, because it looks to me like they have all the papers up at the conference website. So I'll be able to link to that at TomWoods.com/1112 for people who'd like to read it. So I would just like to get from you today what the gist of your paper is, and then I'll be able to refer people to it who want more details. But when you say "the blockchain," people think Bitcoin. And they're not wrong to think that, but maybe it's incomplete to think that.

ROZMAJZL: Right, and that was actually one of the big reasons I wrote my paper, is because when you hear "blockchain," right, you think cryptocurrency. But the whole point of my paper was its applications actually go well beyond cryptocurrency. And this is a topic that hasn't really been addressed, at least as far as I could tell, within Austrian literature. I mean, there's definitely a lot about Bitcoin and cryptocurrencies, but as far as the applications beyond that, I kind of wanted to do something unique within that respect, so blockchain was definitely a topic I wanted to pursue there.

WOODS: All right, I don't know if this is possible, but how would you explain the idea of the blockchain to your grandmother?

ROZMAJZL: Yeah, I've come across that problem quite literally actually and in general when you try to explain the blockchain to other people. But I've actually found it a little bit easier by describing the blockchain as just a database. So a database, as I'm sure we're all familiar, is just a collection of information that can be easily accessed over the Internet. And you can store any kind of information you want on a database, whether it be, for example, cryptocurrency transactions or music, videos, or documents – literally anything you want. But the blockchain differs from traditional databases in a number of ways, and I've kind of identified three key points that distinguish it from traditional databases. So as I'm going through these, please feel free to stop and ask questions to make sure I'm clarifying and being concise with what I'm saying.

So for starters, the blockchain is a database that is shared publicly. So think of like an Excel spreadsheet that contains important data and that is also being duplicated hundreds or even thousands of times across a network of computers. This way the spreadsheet isn't stored in any single location and the data within the spreadsheet can be easily accessed and easily verified by anybody with an Internet connection. So that's the first characteristic.

And the second major characteristic that distinguishes the blockchain from traditional databases is that it's completely decentralized. There's not a single computer in the entire network of computers that can act as a centralized authority over another one. All of the computers are working in concert together. So with this second characteristic, think of a game of backyard football. So here you don't have a referee, but the game still goes on and it runs smoothly because all of the participants generally understand the rules of the game. And if someone were to commit a penalty, the other players can quickly decide whether or not to follow through and penalize that player. So what that means in terms of the blockchain is that if any computer tried to "commit a penalty" by putting out faulty information, the other computers would recognize this and that faulty information wouldn't be accepted.

WOODS: All right, so I guess the first question is: so what? Why do I need this? Why is it better than current arrangements? I mean, we haven't given specific examples of what you can use it for yet, I suppose, so maybe we have to start doing that. But for example, you talk about banking, you talk about the legal profession, ways that this technology can be used. How does it represent an improvement over what we already have?

ROZMAJZL: Well, there is in one sense an ideological improvement that goes along with this technology, and honestly, I think that has the potential to be a bigger implication than the technical improvements we can achieve. So I was going to say the third characteristic, which flows from the fact that the blockchain is decentralized and publicly transparent, is that it's very durable and robust. So going back to that spreadsheet example, by duplicating that information in the spreadsheet across hundreds or thousands of computers, there's no single point of failure. So when every computer has a copy of the most recent information contained in the spreadsheet, this makes the blockchain very robust.

So what the blockchain does in the grand scheme of things is it starts to decentralize economic interactions. We start to move away from relying on trusted, centralized intermediaries and moving towards a much larger, peer-to-peer decentralized network.

WOODS: Okay, so let's talk about then applications. We have this interesting new development. What's something specific it can be used for?

ROZMAJZL: Right, this was one of the questions that I got asked during the Q&A session of the conference, and there is a company that I cited called Everledger, and what they do is they're a company that was created to minimize fraud when you're transferring high-value assets. So as I mentioned earlier, the blockchain is a database, so you can upload any kind of information you want. But what Everledger does that is unique is they track the entire lifespan of diamonds. So we all know that diamonds have certain characteristics, like their cut, their color, their table width, color grading, GIA reporting. And what Everledger does is they create a digital carbon copy of all these physical traits and track the life of a diamond from the moment it's mined up until the retail store. And they upload this lifelong process into the blockchain so that it's out there, it's distributed, every person has access to it. And using Everledger, you know that when you go to buy a diamond, you know beyond reasonable doubt that this diamond is going to be conflict-free, it's going to be the legit thing, and it's not going to be a fake. So with a company like Everledger, their whole mindset is adding a whole new level of accountability and transparency to businesses, and this is greatly going to increase the level of trust that consumers have in businesses.

WOODS: Can I make a dumb-guy analogy and then you can explain how it is or is not applicable?

ROZMAJZL: Mm hmm.

WOODS: I want to know then how would you compare this – I want to be able to perceive the area where this represents an improvement. How would you compare this to Carfax, which tells you all about a car that you might be considering buying? It'll tell you this car was actually driven into a lake or this car, there was a murder of a guy and there may still be bloodstains in it. And you go to Carfax and it gives you all the information you need. So how is this diamond information different from or better than that?

ROZMAJZL: Well, yeah, that is a good question because you also have the ethical concern with the car example you just raised. But using blockchain technology, this information, it's literally tracing the life of the manufacturing process. So even going beyond just knowing what happened to the car in recent years and previous ownership, we're talking about tracking the development of that car from its manufacturing process all the way through to its final sale. And that includes everybody who's owned it afterwards who's made changes, so there's a much, much larger auditable trail that people can look up and know exactly where their parts are coming from, how they're made, by whom they're made, and I think there's just a whole new level of trust that's implemented when you think about it that way.

WOODS: How does this apply potentially to the banking industry?

ROZMAJZL: Yeah, so with the banking industry, that was actually a part of my paper that I talked about, as you mentioned earlier. So for this I looked a company called Accenture. And they're a very well-known company. They operate across 40 industries, and they partner with over 75% of Fortune 500 companies, so they're very reputable in the research that they do. And they claim that blockchain technology is going to alleviate some of the costs associated with banking, particularly in the area of taking over a lot of the back-office functions that banks run. So they say that it's really useful when it comes to complex financial assets, where there's not really a clear central authority to monitor and regulate risk.

But one of the things they touched on specifically was the issue of smart contracts and how those might be a benefit to the banking industry. So I don't know if you want to move into smart contracts quite yet, but I have an example to show how smart contracts might work and help the banking industry.

WOODS: Yeah, let's talk about smart contracts.

ROZMAJZL: Yeah, so I'll start by offering a definition. So a smart contract, it's a piece of code that simultaneously defines and executes the terms of an agreement. So traditional paper-to-paper contracts with two parties, you have the agreements all there on paper, and what blockchain is doing, what smart contracts are doing is digitizing that and putting the code of the contract into the blockchain.

So an example that's commonly used with smart contracts is a vending machine. So the way a vending machine works is that it both defines and executes the rules for purchasing a snack or a drink. You put your money in the machine, you enter a code for the snack you want, and then the machine releases a snack. And once you enter the code for the snack you want and you put in your money, you set a process in motion that really can't be stopped, and the finished product is you get the snack or the drink that you want.

So some people think that this has specific applications to the banking industry and the financial services industry in the realm of futures markets. So when you're talking about futures markets, futures agreements, they speculate over conditions about the future state of the economy, what it's going to be. And if we consider smart contracts in these areas, the terms of the agreement of a futures contract could be easily enforceable through a blockchain. So say I had a smart contract and I code this and I program it and upload it to the blockchain, and I say if the S&P 500 drops by 5% in the next week, I agree to pay person X one bitcoin. So instead of going through traditional methods of paper contracts and uploading these into smart contracts digitally with code, you get real-time execution of the terms of an agreement as specific conditions are met.

So in the example I just mentioned, what you would need is actually a system of oracles to monitor these market conditions. So you would have third-party information systems, they'd be monitoring economic conditions, and if they would see that the S&P 500 has dropped by 5%, they would automatically trigger payment from party one to party two of that one bitcoin. So we're looking at minor efficiency gains in banking, but the potential is definitely there to speed up financial transactions.

WOODS: All right, there's a lot more on this, so we'll get back to it in just a minute after we thank our sponsor.

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All right, let's talk about the legal profession. You have a section in your paper on that. And again, evidently there's some way that blockchain technology can be brought to bear there. Now, obviously smart contracts, well, that makes it obvious that there's some legal aspect to this, but I think there's more to it than that.

ROZMAJZL: Right, so within the legal profession and specifically in terms of smart contracts, in my paper I give a brief section about how demand for traditional methods may fall away, but at the same time, I've heard talks about code lawyers and software lawyers are going to be the ones that are going to be able to code these contracts and implement them for people. So smart contracts, while they're definitely not going to completely eliminate traditional contract methods – there will always be a demand for that – but it's also going to open up a whole new market for people who are familiar with the coding technology necessary to make smart contracts. But as I kind of hinted at earlier, some of the real gains to be made with blockchain technology, particularly within the realm of smart contracts, is developing these oracles that can monitor economic information.

So as I mentioned before, smart contracts, when certain conditions are met, that's when they execute payment or that's when they execute a transfer of an asset. So what's really going to need to be developed and what's really interesting, what's going to be interesting to look at in the future is how companies are developing oracles to facilitate the information that these smart contracts need. Because right now, there's a limit – I mean, there's always going to be a limit as to the level of nuance of the type of information that an oracle can collect. So in that sense, the initial application for smart contracts is going to be very niche.

So with something like futures markets, that's kind of an easy application because futures conditions can be easily monitored by an oracle, but I think as this trend catches on and hopefully it does, I think we're really going to see a spike in the development of these information-collecting oracles. And should smart contracts become more widely adopted and more widely accepted, who knows how much research and development is going to be put into these oracles and expand the scope of the type of information that they can collect, which in turn would open up a whole new avenue of contracts that can be implemented.

WOODS: You note that one of the biggest concerns is whether the government will recognize smart contracts as legally binding. What would be the reason that they wouldn't?

ROZMAJZL: Exactly, that's one of the biggest areas that I mentioned in my paper at the end. And the difficult thing with that is all smart contract – at least as of right now, the focus of smart contracts deals with the Ethereum blockchain. They're pieces of code that are written on top of Ethereum. So when you talk about even recognizing smart contracts as legitimate, there's also the concern of cryptocurrency regulation. And that was one of the big areas as well, because if the government's regulation in the future is going to devalue Ethereum, I mean, you're kind of losing your whole basis for the smart contract world to begin with. So yeah, even without the topic of the government recognizing smart contracts, there is that problem as well.

WOODS: Try and give me a two-minute, for-the-general-public overview of this whole question. Somebody walks in, I don't know what the heck you're talking about. How is my life improved or how is society improved because of this technology? And what problems that I didn't even know we had are being overcome by it? Can you do that for the man on the street?

ROZMAJZL: Yeah, so the biggest gains from this technology are going to be the decentralization of information. And in the conclusion of my paper, that's what I talk about. I cite F.A. Hayek and how he was a big proponent of decentralizing information and that when information is put into the most locally accessible form possible, that's when it is most advantageously used for an economy. So I think overall, that's by and large the biggest

advantage we're going to get with this technology. And as far as the biggest gains we can get from it in a practical sense – and I didn't even talk about this in my paper. These are just thoughts developing as I'm thinking about the subject – is digital asset registry. So as I mentioned before with Everledger, just tracking the life of a product from start to finish and being able to keep track of every person who had a part in developing that product is going to bring a whole new level of accountability towards the way we view exchanges and economic activity.

WOODS: Now, by the way, Anthony, you are an economics major at Grove City College, where the chairman of the department is Jeff Herbener, who's no stranger to this show. And Shawn Ritenour, who's another professor there, has also been a guest on the show, recently named a senior fellow at the Mises Institute. I would have given my right arm to study under those guys as an undergraduate. That's unbelievable to me that you'd have that opportunity. Any thoughts you can share with us about what it's like to be studying economics at Grove City College? This is where Hans Sennholz used to teach –

ROZMAJZL: Right.

WOODS: – and if you don't know Hans Sennholz, you should because he was one of the very big names in our movement.

ROZMAJZL: Right. I'm going to be upfront. That economics department is the sole reason that I came to Grove City College. I did not get interested in Austrian economics until about my junior year in high school, and that was thanks to my dad. And he told me about Grove City College, that their whole department teaches economics from an Austrian perspective. And it's also really cool because Austrian economics as of right now is a minority viewpoint. Not a lot of people subscribe to it. It's not something you're going to see in the mainstream media either. So in that sense, it's really cool to feel like you're part of a club, a very elite club, and to be able to study under elite scholars like you mentioned, it's absolutely amazing. I mean, we get an Austrian perspective on just about every class you take here.

WOODS: Yeah, that's really something. And of course, you walk away also knowing what the other side thinks by contrast, which is what you would sort of think a college education would be like. Whereas you have absolutely no idea that we even exist in most campuses, so that is a great opportunity you have. Grove City of course is also the host of the Austrian Student Scholars Conference, so if you didn't get a chance to go this year, chances are they'll be doing it again next year. I believe this is the tenth year they've done it. AustrianStudentConference.com is the website for that. They haven't put anything up for next year because it's much too early, but that's the hub for the whole thing. And it's a great idea, and I'm glad you were able to participate and that you had enough success that you were able to walk away with a very nice cash prize. So congratulations on that and thanks for being here today.

ROZMAJZL: Thank you so much, Tom. It's been an absolute pleasure.