**RedZone Podcast Episode #66: Blockchain Revolution: How the Technology behind Bitcoin is Changing Money, Business, and the World – with Alex Tapscott**

Bill: Alex, I want to welcome you to the show today.

Alex: I'm glad to be here.

Bill:

[00:00:30] I'm very, very excited about our conversation about your book, Blockchain Revolution, and the subtitle, How Technology Behind Bitcoin Is Changing Money, Business, and the World. I have a question for you. It has been known ... You mentioned that the blockchain has been called the God Protocol or the trust protocol. I love that term. Could you explain what that is?

Alex:

[00:01:00] God Protocol is something that we briefly toyed with as the title for the book, but we thought it sounded a bit messianic. We decided to scale it back to Blockchain Revolution. The basic idea is that throughout history, and including in recent time, if you ever wanted to enter into a transaction, or do business with someone, or to communicate value of any kind, you had to rely on a trusted third party of some kind, a bank, a government, a big technology company, increasingly these days Facebook and Google. We've relied on them for a lot of things, to establish trust, to verify the identity of parties in the transaction, to perform all the business logic, and to keep records. By relying on them, we've given up a lot of control. It's created a few problems.

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[00:02:00] Intermediaries can be hacked or attacked or fail. They can take a long time and cost us a lot of money. They can capture our data. They can choose not to service big parts of the population. For example, in financial services, two-and-a-half billion don't have access to it. The idea behind a trust protocol is what if instead of relying on a third party, we had a technology where a trust was built-in, programmable trust, syndicated across a network where everyone could trust not in an intermediary or necessarily even in their counter-party in a transaction but in the technology to perform all of those same roles, to verify identity, create trust, and basically execute transactions.

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[00:03:00] The term God Protocol actually dates back to a guy named Nick Szabo, who developed the first iteration of cash for the internet way back in the early 1990s. In it, he basically said you would post a transaction to God, and God would handle it for you, and you would never have to worry about it because it was in God's hands. Obviously, it was a bit tongue-in-cheek. The idea remained allusive and something that computer scientists have been trying to figure out. It turns out when Mr. Szabo was trying to figure this out, the technology simply didn't exist to develop this sort of second layer of the internet. Really, it was one big problem, which is how do you know that when you send someone value or you enter into a transaction online that that person is actually sending you the original piece of value.

[00:03:30] Just think about it as a dollar. If I send you a dollar online, what's preventing me from sending that same dollar to everyone else I know, in the same sense that I could send an email to everyone else I know. It's called the double-spend problem or the double-payment problem. It hadn't really been figured out until Bitcoin came along. Is it the God Protocol? I think that's an overreach. Maybe you can say that as a joke, but I do believe that blockchain really is the trust protocol.

Bill:

[00:04:00] One of the ... This has been a big impactful book for myself because I know when I talk to enterprise leaders they don't really understand the full impact of blockchain. I know you come from the financial services area. There's quite a lot of depth and understanding within the impact for that, but the broad implication of blockchain, maybe we can talk to that. I know you mentioned in your Google talk recently that I was watching that The Economist Magazine last year ... I think you quoted them as saying that blockchain was not the most important invention of the past 20 years but the last ... I think you mentioned the past 200 years. Maybe you can just ... Why would a reputable magazine make a statement like that?

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Alex:

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The statement they made was that blockchain could be as impactful as double-entry bookkeeping and the joint-stock corporation. Those two inventions of the past 200 years basically led to the rise of the modern capitalist system and the global economy as we knowit. To make a comparison to that technology is quite telling. They believe, as we do, that this technology solves a bunch of really critical problems in business and especially in business online, which is why we describe blockchain as essentially the second generation of the internet. For 20 years we've had the internet of information, and it's been great for how we communicate and how we collaborate and how we share information, and it's revolutionized certain industries like the media industry, but it actually hasn't had a big impact on business or on commerce online.

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[00:06:00] The big reason is because we still have to rely on intermediaries to establish trust, and verify identity, and perform business logic, and do all that kind of stuff. As a result, the cost of moving information online has dropped to basically zero, but the cost of moving and organizing value and capability online, and offline for that matter, hasn't really changed all that much. The cost of sending money overseas is still 5 to 10%. We talk about cross-border payments all the time, but when was the last time you ever sent a cross-border email? It's just information and yet one type takes much longer and costs much more money because it's value and it's not just mere information. The key takeaway here is that this is not a technology that will make banking faster and cheaper, at least not exclusively. This is a general purpose technology that will be revolutionary in its impact on every industry first of all but also on many of our institutions like the corporation or like government.

Bill:  
[00:06:30] The entry ... I want to get into your design principles in a second because I think those are a good launching point for your seven major design principles. Just as a general comment then, it seems to me that for an enterprise, or a leader, or a security leader within an enterprise or an entrepreneur that's coming up, if you were doing business online then blockchain will impact you one way or the other.

Alex:  
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[00:08:00] If you're a business leader, let's say that you're a CIO or a CEO, this technology is going to impact every single business unit within your organization, but it's also going to affect the underlying architecture or your organization. If you think about the role of a CIO, for example, a CIO's job, among other things, is to make decisions on behalf of the entire enterprise. An enterprise is much more than a collection of different business units. It is a complex organism that requires a system-based thinking. You need to think about re-architecting your whole firm based on the blockchain. One good example of that would be on security. There's never been a computer system that's proven itself un-hackable. That's true of Yahoo! And LinkedIn, but it's also true of things like the NSA. If the NSA can't secure its computer systems, what hope does the average corporate CIO have? This technology has the potential to change how you not only move value but also how you store information that is of value.

Bill:

[00:08:30] I think that's huge. I think that's a huge point because they wouldn't be a target. These islands of information wouldn't be targets if they weren't incredibly valuable. I made this ... On your book on page 40 it says, "We don't need to worry about weak firewalls, thieving employees, or insurance hackers if we're both using Bitcoin. If we store and exchange Bitcoin securely then we can store and exchange highly confidential information and digital assets securely on blockchain. I think that's where some people get lost in understanding digital assets and confidential information." What do you mean there?

Alex:

[00:09:00] Sure. Just consider ... Let's say you had some sensitive information, financial information in a database that you kept on a computer system. You protected it with all the usual firewalls and redundancies and things like that, except the thing is, if someone manages to break that firewall, they're able to run amok within your organization. Now, compare that to how Bitcoin, for example, is organized and architected, which is that if you wanted to hack the Bitcoin network to, say, send the same Bitcoin twice or, in the case of another public blockchain, to sell the same security twice or to steal information. It wouldn't be as simple as jumping through a firewall and hacking that information.

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[00:10:00] You'd actually have to simultaneously hack millions of computers spread all around the world, running with the most advanced form of cryptography, and marshaling a computing resource that some estimate is [10 to 00:09:37] 100 times as big as Google, and do it in a very short period of time in broad daylight of a network of thousands if not millions of participants. That in practice, it's a complete shift from centralized silos to distributed networks. It's one that thus far has proven itself basically un-hackable. Now, I won't say that Bitcoin is un-hackable forever because if I say it's un-hackable it'll get hacked tomorrow. Compared to every other system that we've had thusfar to store, and move, and manage value and information that is of value, it's proven to be a far better option. That kind of architecture, that kind of thinking of distributed systems can be applied to every single organization and how they operate.

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[00:11:00] It's very possible, I think a foregone conclusion actually, that within a few years basically anything of value, whether or not it's money in the treasury of a firm, or it's short-term money market instruments, or it's financial assets like stocks and bonds, will all be digital assets that trade on blockchains. It might not be the Bitcoin blockchain, but it will be a blockchain of some kind. That will improve the responsiveness and the efficiency of organizations, and it will also improve the security of organizations because you'll have a system for moving that value that's much better than what we have today.

Bill:

[00:11:30] I definitely want to get into those principles, but let me just establish a baseline for everybody listening just so everybody's on the same sheet of music. Blockchain, maybe we can talk about what is Ethereum? What is a public blockchain? What is a private blockchain, and what does the word blockchain mean as it relates to Bitcoin? Just we have those general 101 levels set for people.

Alex:

[00:12:00] A blockchain broadly defined is a vast network built on a distributed ledger, which is like a global database that doesn't run on one computer but runs on many computers, where not just information like emails, and PDFs, and websites, but things that actually have value and require scarcity, like money, or financial assets, or titles and deeds, can be moved and stored and managed securely, privately, and [frictionlessly 00:12:09] without the need of a centralized authority or intermediary, like a bank, or a stock exchange, or a visa, or a government, and where trust is not established by that third party but is rather established through consensus of the network, cryptography, and clever code essentially.

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[00:13:00] Now, that's a broad definition. You mentioned that there are different kinds of blockchains. Your listeners might be familiar with Bitcoin, for example. Bitcoin is the first example of a blockchain. Really it's the pioneering technology that showed that this technology could work. It is a fully public and fully decentralized system, meaning that anybody can read and write to the blockchain, meaning anybody can buy and sell Bitcoin. Anybody can act as a validator on the network, which means that in exchange for committing computing resources they can be rewarded for supporting the network. Anybody can take the code base and change it in any way that they want through a soft and hard [fork 00:13:16], which basically just means a change to the code.

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[00:14:00] That is how Bitcoin works. That's also largely speaking how something like Ethereum, which is another big public blockchain with a native cryptocurrency called ether, works, or like Zcash, which is another one that is similar. It's a fork of the Bitcoin core protocol, but it's different from what a lot of big companies are working with. Right now there are big organizations that love the idea of not having to rely on a central authority to establish trust. They love the idea of being able to move and store value without any cost or very little cost and in very little periods of time. Consider the stock market, for example, where people love to settle T+0 rather than T+3, or in the trade finance market where right now it can take 30 days for letters of credit to get processed to establish that a transaction has occurred. These are very slow, laborious paper-based processes.

[00:14:30] Lots of companies in many industries, from finance to supply chain to healthcare, love this idea, however, they don't like the idea of opening up their businesses to some open, decentralized network where many of the participants are unknown to them. There are practical reasons for that. If you're in financial services for example, you have certain regulatory restrictions, such as KYC, know your customer. Know your customer rules, meaning you have to have all this information about who your customers are so that you can, A, service them well, and B, know that they're not money laundering or financing terrorism, except those rules also apply to your vendor.

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[00:15:30] If you're got a technology provider that's doing your databasing or your processing, you need to know at least as much about them as you do your customers. If you're relying on a public network like Bitcoin to do your validating, and the regulator says, "Who's your vendor," and you say, "Actually I don't know because I'm relying on this open distributed, anonymous network," then that's a problem. As a result, new solutions have been developed by companies and by collaborations within industries to try and address this problem while also providing all the benefits of blockchain technology. A good example of that would be, the Linux Foundation has launched something called Hyperledger, which is a open-source collaboration of dozens of large corporations, volunteers, developers, et cetera, who are trying to develop blockchain technology that's basically enterprise-friendly.

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[00:16:30] You've got companies like NewCo, like Digital Asset Holdings, or Chain that are doing the same thing, basically taking all the parts of what made Bitcoin so exceptional and tweaking it so that it's more palatable to the average CIO or CEO. The differences between ... This is a long-winded answer, but very briefly, the difference between, say, the Bitcoin network and one of these networks is that on these networks all of the participants can be known or cannot be known. It's up to you. You can decide. If it's 40 banks that are all using a system to settle transactions in a specific asset class, they don't need to be anonymous. They know who they all are, and that's fine. They can limit read and write access to participants who really matter.

[00:17:00] In the case of the financial markets, it could be all the banks, all the asset managers, the regulators, and maybe some other key stakeholders like technology vendors, but no one else can see what's actually going on inside of that blockchain. It means that they can more easily reach consensus because there are fewer of them on whether or not they want to change the rules of the parameters of the system. It's more adaptable to change. It's a thing where literally there are use cases for private blockchains and there are use cases for public blockchains, and each will thrive in its own way over the next little while.

Bill:

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[00:18:00] I think the impact on humanity is a big piece of it. I love that we're getting into some of your principles, but the piece that struck me pretty hard was the privacy piece. I think privacy ... The reason I like the way you talk about this in the book is you covered it from the individual privacy level all the way to the corporate side, because there's essentially large troves of data about us throughout the internet that we have never given anybody the permission to buy and sell in the backend, yet we've given up large chunks of our identity for. You have a very specific belief about reclaiming identity and how that's going to happen. It's the first time I've heard this since 2005 when I used to go to the Burton Group conferences on identity and hear Kim Cameron and others talk about their vision for the future. Finally your book seems to put it together, which is great. Maybe you could talk about privacy a little bit.

Alex:

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[00:19:00] Yeah. I'm glad you brought that up because it's a central core feature of this technology. You just have to look back on what happened during the first generation of the internet, which is that from 1990, call it [two 00:18:30] '93 onwards, we've had this proliferation and creation of this whole new asset class called data. Data is as important to this economy, the digital economy, as the industrial plant and equipment was in the industrial age, or land was in the agrarian age. As you rightly pointed out, we create it, me, and you, and your listeners, and everyone out there in the world, but we don't own it. We don't control it. It's owned and controlled by intermediaries, like your bank, like your government, like big social media companies or digital conglomerates like Google. That's problematic.

[00:19:30] It's problematic because, A, you can't necessarily use all that information to manage your affairs and organize your life, but the bigger issue of course is that it could undermine your privacy, and it could be corrosive long-term to your individual freedom and liberty. That is a huge issue. It turns out that there's a virtual you out there, and there's a virtual me out there. The virtual you knows you better than you know you. You don't know exactly where you went, and what you bought, and who you spoke to online, and how much money you spent, and how many loyalty points you received exactly one year ago today, but the virtual you does. What if we could apply this technology to take back our identities, where there would still be a virtual you but you would own and control it.

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[00:20:30] In that, virtual you would be different versions of you. There would be you, the employee of a company. There would be you, the citizen of a state. There would be you, the user of social media. There'd be you, the customer of the bank. You'd only provide the data and the information that was absolutely critical for you to receive a specific service. For example, if you want to buy something online, today we give up so much more information than we need to just to buy something online. Whoever's selling something to you actually doesn't need to know who you are. They only need to know that you have enough money to buy that thing. If you go to the hot dog stand on a corner and give the guy five bucks for a hot dog and a soda, he doesn't ask you for your driver's license or your credit score. He's only interested in the cash.

[00:21:00] Now we've got a way to enable people to make digital payments peer-to-peer without relying on giving up all this data. However, there are other situations where giving up more information is really useful to you. If you're applying for a loan for a mortgage for your house and the bank says, "Tell me a little bit about yourself," and you say, "No, thanks. Actually that's all private," you're probably not going to have that much luck getting a loan. Except today the way it works is that the bank basically scrapes data about you from third-party providers like, for example, getting your credit score, and they use that information, which you don't own or control, to make a decision about whether or not you'll be a good customer.

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[00:22:00] In the future, I think what will happen is people will have all this information about themselves. They'll have access to rich troves of personal data, everything from their past credit history to their eBay score, to their social media clout, to their experiences with other industries and other businesses. They'll be able to apply that information in a way that is private with the bank to gain access to a more favorable interest rate on a loan, or a bigger line of credit, or something like that, or access to new investment products. The point, the key differentiator, though, is that it's the decision of the individual, not of the intermediary, to determine how much information is relinquished and for what purposes and to what end. That is a huge paradigm shift in how we think about personal information.

[00:22:30] Some people have said that throughout the first generation of the internet, "Privacy is dead. Get over it," and, "Big data is good for people because it means that you can be offered other services." I think that is a deeply dangerous and very naïve way of thinking about the world. Privacy is the foundation of a free society, and without it, our individual rights can be infringed upon. I view this technology, and this goes back to what I said earlier ... This isn't just about making transactions fast and frictionless. This is about changing how we think about really important issues, including how we think about individual privacy.

Bill:  
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[00:23:30] No, this is amazing because it gets me so fired up and pissed off in a lot of ways because I'm firmly in the IT security world with my organization. This vision that started in the mid-2000s about me going to Amazon to buy something. I should be able to just give a portion of my identity wallet to Amazon in order to fulfill that transaction, but as your point is, if I go to buy a house, I can give other portions of my digital wallet. Essentially what you're talking about is a distributed digital identity wallet that can be shared. In the past, it [was 00:23:30] always been approached by centralized brokers of identity, and who wanted to take on that liability. What you're saying is this blockchain technology will allow innovation within that to be able to fulfill this vision people have had about identity and privacy.

Alex:

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[00:24:30] Yeah, that's right. There are big advantages, too, if you're a business leader. The first one is that a lot of companies ... I speak to a lot of CIOs. I ask them, "What keeps you up at night? What's your biggest concern?" They basically say, "My goal, I've done a good job if my company doesn't land on the front page of the Wall Street Journal for a massive breech of hundreds of millions of user information accounts. So long as I'm not a Target, or I'm not Yahoo!, or I'm not LinkedIn, I'm happy in the sense that so long as I don't lose all this information." If people, if individuals take more control of their information, and if it's protected through cryptography and distributed consensus, then it will mean that the individual liability for corporations to maintain and secure these troves of sensitive information will decline. That means that there's not as much risk of one of these cataclysmic failures or breeches.

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[00:25:30] The other big issue, and this is a ... I'm sorry. The other big opportunity for business leaders is that this is not the end of the era of big data. This is the beginning of the era of bigger, better, smaller data, which is that instead of just scraping the internet for meta data about big groups and data about individuals and hoping to create, generate analytics and insights from that, you can actually create a peer-to-peer relationship with your customer, who are there because they know that they're in control and because they trust you because they understand that you're no longer out there scraping information from the internet, that they'll give you more information than you would've gotten otherwise, and better, and more useful, and more granular information. That will allow you to do much more.

[00:26:00] This can apply ... It's not just for banks. It's for insurance companies who want to know more actuarial information when they're making calculations. It's for consumer brands who want greater insights into how users are using their products. It applies to healthcare providers who should allow individuals to control their information and gain access to better healthcare services in and outside of the system. This is a historic opportunity actually for companies to completely change how they look at big data and think about it more as something that they co-create with their customers and something that they get from big data aggregators like Google, Facebook, and others.

Bill:  
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[00:27:00] Absolutely. I love this point. You're saying privacy is not dead, which is probably the first time I've heard that in recent memory, which is great. There is hope here. Re-contextualizing big data, is what you're saying, into small data and to be able to have context, which is almost like privacy by design around your data, which is great. Maybe we could talk a little bit about your ... You have another, I would consider, earth-shattering concept about the media wants to build ... Talk about a sharing economy. It's such a kumbaya word. It's supposed to be ... It's so egalitarian, but you have a different perspective on the sharing economy and the impact with blockchain, and I'd love for you to share with our listeners.

Alex:

[00:27:30] This word "sharing economy" has come out of nowhere. It captured the zeitgeist in a lot of people's minds. It's a nice notion that we all get together and kumbaya and share this value that we all create together. It's a bit of a misnomer. It's actually deceptive, deceitful even, because companies like Uber, and Airbnb, and Lyft, and TaskRabbit are not sharing economy companies. In fact, they're successful because they don't share. They aggregate, and there's a difference between the two. They aggregate excess capacity. In Uber's case, it's drivers and cars. In Airbnb's case, it's rooms in people's homes. In TaskRabbit's case, it's handyman skills.

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[00:28:30] They aggregate this excess capacity through centralized intermediary, a corporation, and then they resell it to a willing market. In the process, they capture basically all of the value. Of course they take 20%. You could argue, "That's not all the value," but the actual $65 billion that Uber has created, the value that it's created through leveraging this massive resource called excess capacity, or the 26 billion that Airbnb has done in its own right, is not shared by those who create it. It's aggregated by a small collection of individuals and institutions. I think that we should stop calling the sharing economy the sharing economy. We should start calling it the aggregating economy. Now, what does ...

Bill: Are you still there, Alex?

Alex: I'm sorry about that. My phone just cut out for a moment.

[00:29:00]  
Bill:  
No problem. I can hear you fine. You can keep going.

Alex:

[00:29:30] Great. What if we could actually rebuild the sharing economy so that the creators, the people who actually create the value get to share in some of the wealth? Consider for a moment Uber and what Uber does. I think you could basically take most of Uber and move it onto the blockchain, where it wasn't a centralized a company but a distributed, autonomous organization that could be organized in any number of ways. It could be organized as a collective, where a bunch of drivers each commit some money to get it up and running. It could be something that isn't even organized like a corporation. It could be something where vehicles are actually owned by themselves and not owned by any individual. The key thing here is that most of what Uber does, I think, can be radically simplified using blockchain technology.

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[00:30:30] I think Uber, for example, can be broken down into doing five basic critical roles. They're incredibly ... It's a great company in what they've been able to do, and it's a brilliant idea, but I actually think that it's not as disruptive as people think. The four things that Uber does, the first thing it does is identity. You log on to Uber, and you see what the driver's name is, where he is, what kind of car he's got. The driver sees the same information about you. The second thing Uber does is reputation. It has a centralized database of scores that people have given to drivers and the drivers have given to individuals, which tells you how reliable the driver or the individual might be. You know you've got a four out of five, or a four-and-a-half out of five, or a five out of five star rating. Their algorithm determines based on that information whether or not you get connected.

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[00:31:30] The third thing it does is contracting. Contracting happens in a way that the individual doesn't see. If you think about it, if you get picked up by Uber and taken to where you want to go, you'll pay for that ride, and Uber will execute that transaction. If the driver decides to cancel the trip, even though you both agreed that he'll pick you up, you don't pay because the contract hasn't been fulfilled. Uber is acting as a centralized intermediary there brokering contracts between drivers and fares. The fourth thing is does is payments. Integrated into the back end are all of these payment systems, so Visa, Apple Pay, Mastercard, debit, direct debit, all these things that make the payment function basically frictionless. You're relying on Uber as a central third party to do all of the payment processing on behalf of the financial intermediaries.

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[00:32:30] The final thing that Uber does is sort of the everything bucket, so the self-driving cars, or Uber pool. I think that of those five, the first four, identity, reputation, contracting, and payments can all be radically simplified using blockchain. Identity, if information about ... Let's say that in the future there's not Uber but there's Suber, Super Uber, where individual cars and drivers and individual passengers, if they have the app are themselves nodes on the network. Every time they enter into a transaction, their identity ... They have an identity wall, which plugs in, which only provides the information that's totally necessary. The reputation is aggregated over time in a distributed database, which everyone can trust is fully accurate because it's immutable and it can't be hacked.

[00:33:00] Contracting can be done via smart contracts, which are basically software that mimic the logic of contracts, so guaranteed to execution, enforcement, and payments, where you don't have to rely on an intermediary like a corporation, or a bank, or a government to fulfill the terms of the contract. The payment component, while blockchains like Ethereum and Bitcoin have a native payment token built in and that can be programmed either to represent a regular fiat currency or people could pay in cryptocurrency. All of a sudden, these four components of what Uber does as this big centralized intermediary can be, A, simplified, B, reduced in cost, and, three, decentralized across a network. What does this all mean is basically the cost of Uber, of the service of ride-sharing, will decline.

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[00:34:00] The drivers and those who actually create value can actually share in the value that's created rather than it being aggregated. Individuals will still be able to maintain and protect their identity, even though they're getting access to this rich set of services. To me, there are many implementation challenges to putting something like this in place. Quite honestly, if you've got any entrepreneurs on your call here that are listening to this, I challenge you to develop this because it's going to be a multi-billion-dollar business. You may not capture 20 points from every ride, but you'll be able to undermine a model which in only four or five years has already disrupted a whole bunch of big industries. How cool would that be?

[00:34:30] You'd be able to do it in a way that would empower individuals, that would allow them to share more equally in the prosperity that's created from these models. To me, I just think that's such an exciting opportunity. It points to the heart of what blockchain means, which is that, again, it's not just about making transactions faster. It's not just about disrupting legacy industries like financial services. We're talking about the disruptors being disrupted here. There are so many examples of companies that themselves are only a few years old who could be fundamentally and radically transformed by this technology. If that doesn't excite you, I don't know what does.

Bill:

[00:35:00] Yeah. The human element is massive in that you shared a story about the woman ... I forget what her occupation was. She was the maid. Basically she ... You have a word for her, but she transfers money each pay period to the Philippines. You explained and shared that story but then talked about how blockchain was really radically changing the impacts for her. Maybe you can talk about that for a moment as another point of showing people the impact of blockchain.

Alex:  
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[00:36:00] Sure. I mentioned earlier that one of the big issues with intermediaries is that they can slow things down, and they can add cost to the system. There is no use case that more clearly makes this point than cross-border payments, specifically the remittance market. The largest flow of funds into the developing world from the developed world, $600 billion a year, is not foreign aid. It's not foreign investment. It's actually remittances, which is money that is repatriated home by diasporas that are living abroad. I'm in Toronto, Ontario, and Toronto actually holds the title for the highest remittances per capita of any city in the world. There are hundreds of thousands of Torontonians who send money home to places like India, and Pakistan, and the Philippines, and China, and elsewhere.

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[00:37:00] According to the World Bank, the average fees for sending remittances are 10%. The average time it takes is around three to five days. They also estimate that almost 100% of remittance payments that are sent home are used for critical things like education, medicine, food, water, transportation, and housing. You're talking about $60 billion a year that's being taken off the top from the people who actually need it the most, which makes it not just an economic problem and a business-case problem. It actually makes it a social crisis. I wanted to learn firsthand how the remittances system works. I know a Filipino housekeeper in Toronto, Canada named Annalee Domingo, who has been sending money home to her mother in Manila for 25 years, every month diligently, without fail.

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[00:38:00] Every month she takes $200 off of her paycheck and sends it home to her mum. She got her paid, so I asked her if I could join her. She gets her paycheck from her boss. She takes that paycheck to her local bank and deposits it, and then withdraws $200 in cash from the bank, then gets on the bus and goes five miles in the opposite direction of where she lives to a convenience store in a housing project in Toronto's worst neighborhood, which also doubles as a so-called financial intermediary. It's basically a Western Union counter next to the lottery tickets. It's payday, so there are another 50 people who have the same idea. We end up waiting in line here for like an hour. She gets to the front of the line. She fills out a paper form, the same form, the same questions that she's filled out every single time for every single month for the past 25 years, because this technology hasn't changed at all, and hands over the cash, the wad of bills to the clerk working at the convenience store.

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[00:39:00] Now, the money doesn't arrive magically that moment to her mother in the Philippines. It actually takes five to seven days. Her mum never really knows when it's going to arrive, and that's a source of stress for her because she's 75 years old. When it does arrive, Western Union and the other financial intermediaries in the mix have taken over 10%. I think in Annalee's case, it was around 10%. That's a problem. We began working with a bunch of companies that are in the remittance space during the research for the book. We came across one which was very interesting. It was called Abra. We basically got Annalee set up on Abra instead of have her using Western Union. Now her employer can make a direct deposit into her bank account, and that bank account is tied to her Abra account. She's able to see the money in her Abra account, in this case $200 Canadian.

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[00:40:00] Instead of having to go somewhere, she literally presses send, a button on her smart phone, and the money immediately converts from Canadian dollars into Bitcoin, travels across the Bitcoin network and arrives on her mom's Abra account on her phone 10 minutes later. Her mom doesn't see Bitcoin, and Annalee doesn't see Bitcoin. Annalee sees Canadian dollars. Her mum sees Filipino pesos. In this case, the $200 is converted to 6,000 Filipino pesos. The entire fee for processing that transaction is not 10%. It's one quarter of 1%. Now, what Abra's done, and the reason why I think it's going to be successful in scaling this business, is that it's added on top of that a sort of shared economy model. Annalee's mum's in the Philippines, and she's got virtual pesos on her phone, but she pays for everything in cash. She goes to the market in cash. She takes the bus in cash. I think she even pays her mortgage in cash. She needs cash.

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[00:41:00] Abra's enabled anybody to basically plug into their system as a teller where they can, for a fee that they set, exchange Abra dollars, basically virtual pesos for physical pesos. Usually that settles out to around 1 or 2%. There are so many of these in Manila, I think there are 50,000 in the Philippines alone, that it's very easy to find one and to do this transaction. The point is, this whole process takes about 30 minutes, costs about 1 to 2%, and saves everybody a whole lot of grief, compared to the system today where it takes 10%, takes three to five days, and is an incredibly painful and antiquated process. There is an expression in the VC land where if you can do a 10X solution, if you can make something 10 times better, than you're probably going to disrupt a market. It's better than incremental change. It's about a radical change. This is an example of how the technology is being applied to radically change an industry, and also the upshot, completely address a major social and economic crisis. To me, that is the best of both worlds.

Bill:  
[00:41:30] Yeah, absolutely, when you can do a massive social good while leveraging exponential technology like blockchain. Basically the Abra developers added a value added overlay on the underlying blockchain technology framework, then they're allowing ... They really don't really care about the Bitcoin confusion that may arise. It's doing the value add conversion on the back end for a small fee to convert to Canadian dollars and Filipino pesos.

Alex: Yeah, that's right.

Bill: Interesting.

[00:42:00]  
Alex:

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Just to be clear, too, many of your listeners might be thinking, "I thought this technology was all about disintermediating. Isn't Abra just becoming another intermediary in the mix?" The answer to that is actually yes, they are. That's where there are business opportunities in this technology. If you sit in the middle of transactions and you just capture a fee for doing something that you've always done but you're not really adding much value, you're in deep trouble. This technology will put you out of business. That's where you'll see a lot of disintermediation of financial services. However, if you're able to leverage this technology to create a service, a suite of services that is just materially better than what we have today, then you will stand to benefit enormously. There are many opportunities for reintermediation, maybe not as many as there are risks for disintermediation, but it's the companies that realize this technology can enable them to do things that they couldn't have done in the past that will ultimately survive and thrive in this next generation of the internet.

Bill:

[00:43:30] Yeah, it's very deceptive. If the CIOs don't wake up ... It's so deceptive right now, but if we don't understand ... If we poo-poo it, it could hit you in the face pretty hard with disruption. Man, I love this practical examples you're giving. Where are we ... The practical internet that real human beings could use probably was with Windows 95. [inaudible 00:43:22] everything before that, you had to be super, super technical and super ... It wasn't really for the masses. '95, really the real internet launches. Where do you see blockchain now? Is it still '90s, '91, '92, '93, or is it really '95, '96?

Alex: Yeah, it's probably '93.

Bill: Excellent.

Alex:  
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[00:44:30] Tim Berners-Lee and the World Wide Web was developed at CERN in 1989, 1990. The Mosiac browser, I think the first launch by Marc Andreessen was '93. At that point in time, the internet, there were very few websites. Most of them were academic websites connecting universities through the ARPANET and other networks. There wasn't this mass consumer internet. That was limited largely because there were, I think, only 25 million personal computers in the whole world. If you recall, getting online in '93 was a real pain in the butt. You needed a modem. You needed to take over your house's phone line. Your wife, or your kids, or whomever would be yelling at you for using up the phone. It was an old-school process. I think that ... But then between '93 and '95, all of a sudden there was this massive inflection point where the consumer internet took off.

[00:45:00] I think right now we are on the cusp of a massive inflection point. I think that the next generation will probably happen faster than the first generation because all of the preconditions are there for it to scale. In '93, most people didn't have a telephone, let alone a modem with an internet connection. Now you've got half the world's population with a super computer in their hands in the form of cheap smart phones. You've got internet connectivity, which is tipping over 50%, and it's nearly ubiquitous in most parts of the world, like North America and Europe. This is going to happen really quickly.

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[00:46:00] The difference between the internet and blockchain in adoption is that people will use blockchain technology without ever really knowing they're using it. People used to log on to the internet, and the internet was actually a proper noun, capitalized Internet. It was a thing that you would go to, and it had a culture, and it had an identity, and it was a place. It was a different thing. Blockchain technology, like many technologies that have come since the first generation of the internet, will disappear. It'll become so ubiquitous that it will cease to be a thing that you see and feel. I think that'll happen largely of most digital technology, which is that it'll be like the air we breathe. People might find that their life has transformed in really profound ways. Sending money will become cheaper. Their data and their identity will be protected. They'll have access to greater services because companies will leverage this technology to do more.

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[00:47:00] Creators of content will get paid fairly because they'll have a way to track their digital rights as their music is being consumed. People will be able to consume content in parts of the world where it's forbidden because it will be encrypted, and their identity will be protected. Individuals living in the developing world will have a way to ensure that the value they create in, say, their homes is protected because the registry of land ownership is on a distributed blockchain and can't be altered by a corrupt dictator or a local official. All of a sudden you're talking about profound seismic shifts in the economy and society, and not just for those lucky few like us who live in the states of Canada or wherever, but for the people who actually have missed the boat on the first generation of the internet. This gives us another kick at the can to give them a shot at prosperity. How cool is that?

Bill:

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[00:48:00] No, that's fantastic. Just a quick story. I was at the Inter-American Development Bank talking with their leaders about exponential technology, security, and the like, and I said, "What are your top three drivers for the next year?" At the top of the list was blockchain. I scratched by head, and I listened. They explained how so much value is ... Inter-American Development Bank spends most of their resources in Central and South America, primarily some of the poorest countries there, and really helping them build their infrastructure and technology-readiness. They said the issues with property ownership are so profound that they're having a very difficult time entering the western economies or participating in economic growth because of the issues with ownership of and the contracts around land.

Alex:

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[00:49:00] Yeah. Land is the most important asset in most economies. Property rights are a pre-condition for prosperity, and they always have been. The reason that the UK, and Canada, and the US, and the commonwealth countries are so economically prosperous today is because they've had consistent, evenly applied property rights for hundreds of years. In the developing world today, that's still not the case. According to Hernando de Soto, who's a world-renowned economist, 70% of people in the developing world who think that they own land actually don't have an enforceable title to it. Either there's a duplicate copy, or there's a missing record, or there's a way that a corrupt dictator or a corrupt official can just unilaterally alter a number or an ownership title on a spreadsheet because they've been bribed or paid off. That undermines the ability of anyone to actually thrive in the real economy.

[00:49:30] It basically traps capital, in this case trillions of dollars, in the dark economy where it's dealt and handed under the table outside of the system. If you're outside of the system, then you can't get a savings account. You can't invest money. You can't borrow against your home to start a business or pay for an education. You'll never be economically upwardly mobile unless you've got clearly defined property rights. If we can use this technology to solve even this one problem in the developing world and put everyone globally on the same page. It could be a massive boon.

Bill:

[00:50:00] You also mentioned the point about value creators like musicians, and I guess you made the link between Napster and the current artist, Imogen Heap. I didn't realize how little money they make, the current artists make. If they sell a platinum record, they're able to sell 1,000 records or 1,000 copies of their song, how little they make, and how that's driving innovation with Imogen Heap. Could you share that story about what you're seeing there with value creators?

Alex:

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[00:51:00] Sure. This will have to be the last story I share with you, unfortunately. I've got to get going here. Basically artists have never gotten a good deal. This is not a modern phenomena. This dates back to the days of [Medici 00:50:30], where they always had to serve at some patron's pleasure. The modern record label industry is no different. It was developed in earnest in the '50s and '60s in the United States and the UK, where as an artist you would sign a deal to be represented by a label, and in exchange for that privilege, you would receive a royalty based on the negotiation. Usually those royalties ranged from paltry, a couple of percent, to if you were Frank Sinatra, 15 or 20%. It wasn't the best economic model, but it was one that actually allowed artists to make a living from the content that they created.

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[00:52:00] The internet came along. The internet was supposed to actually solve some of these problems by removing the need for this intermediary who actually had to produce this music on a physical medium. Now you could sell your music peer-to-peer online, and you could connect directly with your fans. Except the problem with the internet is it took something that was an asset, a physical good, like a record or CD, and it turned it into a free commodity that could be put through the internet's printing press and published millions of times over, and basically as a result lost all of its value. A whole new set of intermediaries have since stepped in to try and solve this problem. Now you have Apple Music and Spotify, who have developed a model based on music streams, except the problem is artists today get paid even less than they did during the record label era.

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[00:53:00] If you sold a million records in the '80s, a million singles, and you were the songwriter, you could expect to make probably about 40, 50,000 bucks. 4 to 5% would be your royalty credit on that piece of content, which isn't a fortunate but at the time was more than enough to live a normal middle-class lifestyle. Today that same song gets a million streams on Spotify, you don't make $45,000. You make $36, which isn't even enough to buy yourself dinner for two. It's disgraceful what's happened. Artists are fed up about this, and I quite frankly think it's unsustainable. How could blockchain fix this problem? Songs are already digital in the sense that you download a song, it's got the music, it's got the lyrics, it's got the artwork, it's got all this cool stuff. Why not imbue it with some intelligence as well?

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[00:54:00] Every song should come with a smart contract that delineates how artists who have rights to that song ought to get paid, depending on how it's consumed. If it streams over Spotify, it's, I don't know, half a cent. If it plays on the radio, it's whatever, a 10th of a cent. If you want to buy the song, it's 75 cents. If you want to sample the song for a new piece of music you're creating, it's a different royalty arrangement. If you want to play it in a commercial or in a film, again, it's a different arrangement. What happens every time a song is consumed and paid for is it executes a smart contract which creates a digital payment that lands immediately in the wallet of the artist who created it. That would mean two things. Number one, artists would get paid fairly, and money wouldn't go missing, which is what happens today with alarming regularity. Artists are terrible business people, and they don't know who's using their music, or stealing their music, or cheating them out of it. They end up suffering as a result.

[00:54:30] Another big thing is that they would get paid first and they'd get paid fairly. Right now artists have to wait for money to go through nine different intermediaries on average before they get paid, and it usually takes 12 to 18 months for a royalty check to land. What if instead it took one second for them to get paid and then they decided who of these third parties, labels, and promoters, and managers, and agents, and performing rights organizations, and everyone actually deserves to get a cut of that value for what they created for that artist. That again is a complete inversion of how the model works. It's one that would directly benefit creators of content in really important ways. You know what? Without music, life sucks, so we need to support artists. Otherwise, we'll be living in a darker, more miserable world.

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Bill:  
I appreciate for your time, Alex. I have personally bought 10 of these books to give out to my people that I know as I meet them. I highly recommend that the leaders listening to this podcast, listening to this show, purchase the book. How else can people reach out to you and learn about your material, Alex? Is there a preferred online place you'd like people to go visit and learn more about you and et cetera?

[00:55:30]  
Alex:  
Bill, let me just say thank you very much. This was a great conversation, wonderful questions. If your listeners want to learn more about the work that we're doing, they can follow me on Twitter @AlexTapscott. I would just encourage them to get engage. Immerse yourself in what's happening in this industry. Of course, I think the best way to do that is to buy my book in massive volume, but there are other ways, too.

Bill: Absolutely.

Alex:  
[00:56:00] I just think that the more you learn about this the more you'll become convinced that this is going to have a big impact, whether you're an executive, or an entrepreneur, or just a regular citizen who wants to know about the future. Thanks a lot. Really appreciate it. Best of luck.

Bill: Thank you, Alex. Bye bye.

Alex: Okay, bye.