

DEFIANCE 012

WHY WE NEED BITCOIN

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DEF012 - ANDREAS M. ANTONOPOULOS INTERVIEW TRANSCRIPTION

WHY WE NEED BITCOIN

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Peter McCormack: 02:02

Andreas, how are you?

Andreas M. Antonopoulos: 02:02

I'm doing very well, Peter, how are you?

Peter McCormack: 02:02

I'm very well, thank you for joining me for this. So as I said to you, I'm putting together a series of interviews for new people who are discovering Bitcoin, to help them learn about it in a kind of very easy and efficient way. The first episode is why we need Bitcoins. So Andreas, take me away. Why do we need Bitcoin?

Andreas M. Antonopoulos: 02:21

Because we're heading into the 21st century now with a system of money built in the 16th century, and a system of banking and finance built in the early 20th century, and both of them are plagued by politics, and fighting, and restrictions, which are not suitable for the kinds of problems our planet is facing. So we've got these global markets, we've got this global community, we've got this global internet, and yet, our

money is fragmented and plagued by these petty considerations of nationalism, and putting the flag and faces of old dead people on bits of paper. And the money system is controlled by governments in such a way as to promote nationalistic ideals, rather than improve commerce, which is what money's supposed to do. And even while in the Western world, we kind of have the best forms of money and banking that money can buy, even those are horribly fragmented, slow, inefficient, and full of mistakes.

Andreas M. Antonopoulos: 03:34

But the truth is, that that's the best. It gets depressingly bad from there on. So if you go to South America, or Africa, or even Southern Europe, if you go into Asia, the money systems get progressively more political, more about surveillance, more about control, less about commerce, and even more inefficient, and these systems exclude a huge number of people, counting in the billions, from the world economy.

Andreas M. Antonopoulos: 04:04

So why Bitcoin? Because the 21st century needs a 21st century system of internet money that is open, borderless, neutral, censorship resistant, immutable, and permissionless, that serves the needs of commerce for every person in this planet, no matter where they are, no matter who they are, anytime, anywhere, and that's Bitcoin.

Peter McCormack: 04:30

So you get to travel the world, you get to speak to a lot of people, you get to understand what's going on in different parts of the world, different economies. As you said there, as you go to South America or Africa, as the economies are weaker, you see worse situations. Do you find it's easier to explain Bitcoin to people in these economies, than say in places like the UK, and Europe, and America?

Andreas M. Antonopoulos: 04:54

Absolutely. Yes. It's much easier to explain, because a lot of the problems we see with money have a lot to do with moving money across borders. So borders are a very big thing in traditional money, and also, the difficult politics of various repressive, dysfunctional, and corrupt governments, right? So if your government isn't oppressive, corrupt or dysfunctional, your money still is a giant surveillance system, but you don't notice the impact of that because it happens slowly. It erodes democracy, it erodes the institutions of popular will, it erodes a lot of those things, and it enables kind of a corrupt criminal activity at the highest levels within your society, but you don't notice those because they don't generally affect your day-to-day. In countries where those problems are much more in your face, the question why Bitcoin, doesn't come up. Instead, the question becomes, how do I do Bitcoin, and how quickly can I do it?

Peter McCormack: 06:00

So that's very interesting, because it's usually therefore a response to crisis, or a response to a situation you're already suffering with, probably one of the reasons why it's difficult maybe in considered more successful Western economies. It's difficult to get people to consider Bitcoin beyond a personal financial gain, but beyond speculation. So how do you think we encourage people to take it more seriously in Western countries, or do we have to accept that it might have to be at a time when there is, a financial crisis that hits us here?

Andreas M. Antonopoulos: 06:32

Well, I honestly don't think that we have to have people in Western countries take it more seriously. I think internet money is interesting to Western developed nations when it can do applications that can't be done with traditional systems. So when you talk about super fast, super secure, super private micropayments, then you can start doing things with cryptocurrency that you can't do with traditional systems of money. And then it's interesting, it's interesting for gaming, it's interesting for new applications, your autonomous vehicle that you want to have interact with an electricity charging station is not going to have a credit card of its own, and if it does, that would be a security nightmare, but it could have some Bitcoin of its own to do that kind of transaction.

Andreas M. Antonopoulos: 07:23

So you start seeing these 21st century applications that emerge that are not about crisis, they're about a new form of networked money. Until we really have kind of widespread adoption and the need for those applications, it really is, as you said, most of it either a speculative curiosity, or for some people who are in the tech sector, it's a cool, elegant technology thing that they can get involved in and develop a career around, which I think is also a great motivator in developed nations.

Peter McCormack: 07:57

Okay, so let's start breaking down these kind of dangerous global mega trends that support the reason for why we need Bitcoin. So let's start with cash and financial privacy. For me it feels like it's getting worse, and as money becomes more digital, and as we lose cash in its physical form, privacy is becoming worse, and also, it's becoming discriminatory as well, which is a separate point. You've talked a lot about financial privacy. Why is financial privacy important?

Andreas M. Antonopoulos: 08:27

Well, I just want to first comment on something you said about us losing cash. We're not losing cash, cash is deliberately being taken away from us as a means of transaction, and that is a very deliberate political strategy that started in the 1970s, and is gaining momentum, especially in countries like the United Kingdom. And it is a very, very dangerous trend, like many of the other control, surveillance, authoritarian trends we've seen, even in supposedly free and democratic countries.

Andreas M. Antonopoulos: 08:58

So why is privacy and financial affairs so important? The reason is that if you understand that money is the language by which society not only coordinates but also expresses value, and where cash is the last remaining mechanism before cryptocurrencies, that allows people to coordinate and express value to each other, without anyone else in the transaction without intermediaries, then it becomes obvious that if you lose the ability to have privacy on those issues, it undermines many of the other fundamental freedoms.

Andreas M. Antonopoulos: 09:35

So we have to think about freedoms in terms of two different categories. Let's call them prior restraints and consequences, right? So you're free to speak, right? So let's say

freedom of speech, you have freedom of speech, unless there is prior restraints, and prior restraints is where someone stops you from being able to speak at all, which is kind of the worst form of censorship, and strictly prohibited in most constitutional free countries, with a variety of exceptions of course. And then there is consequences, where you're allowed to speak, but if you say something that is not in accordance with norms, or mainstream political opinion or whatever, the consequences are severe, from social consequences, which of course are appropriate and part of a free society, to extrajudicial enforcement by governments, where your social status, your ability to get a job, your ability to move freely and other freedoms are taken away from you, because of something you said.

Andreas M. Antonopoulos: 10:45

So privacy is important, because it protects from both aspects of this. If you have on anonymity, you can speak and then you can also get away with the speech, and that applies to many other fundamental political freedoms like the freedom of association, the ability to associate with political causes or other causes you want to, and associate with other people. If you strip away financial privacy, then in many practical ways, your ability to exercise all of your other fundamental human rights is significantly eroded.

Andreas M. Antonopoulos: 11:23

So first of all, with modern credit cards and payment systems, you get surveilled in three different ways. You get surveilled in terms of your network, meaning the associations you form, you get surveilled in terms of the contents of your purchases, so people can see which books you're buying, which organisations you're subscribing to, not just create a graph of your associations, but look for specific types of content. And then the third one that most people don't think about, is the geographical aspect of it, which is every time you do a transaction, it reveals the location at the moment you did a transaction, and that means that if you string enough of these together in your daily life, you can basically be tracked as to your whereabouts through your bank account, without even having to activate the GPS on your phone.

Andreas M. Antonopoulos: 12:18

So all of these are critical aspects of freedom, because if you take them away, what happens is that all of the other human rights and freedoms gradually starts to crumble, and a government, on the other hand, that has power over financial information and the ability to do financial surveillance, censorship and control, gains enormous political power. They can monitor the activities of dissidents and political opponents, they can monitor their campaign spending directly related to things like that, but they can also apply consequences by, for example, penalising democratic expression. And I'm not talking here about North Korea. Let's come a lot closer, why don't we? How about Catalonia, right? How about the ability of a Spanish government to apply those kinds of extrajudicial controls over people who associate with the Catalan Independence Party, or rights in the UK with a Scottish devolution movement, or a Northern Irish and Irish devolution movements, and all of those things. So even in free societies, the power given to governments to control is enormous, and financial surveillance is one of the most powerful tools they have.

Peter McCormack: 13:42

Based on your work and your studies around the kind of erosion of financial privacy, what other examples have you seen, and where have you seen this really at play where people have lost financial privacy, and it's had a devastating impact upon the freedoms in that country?

Andreas M. Antonopoulos: 13:59

Well, I think one of the very useful, recent examples was the surveillance of Hong Kong protesters by monitoring their purchases of subway cards, Metro cards to go to specific locations in the city. So the first protests that started in Hong Kong were back in, I think 2015, and a lot of people were jailed as a result of their participation in those protests after the fact, by analysing their financial activity, and therefore being able to pin down their movements. So this time, they've wised up, and one of the scenes we saw was long, long lines in front of the cash machines to buy, not to use the tap to pay systems or the RFID MetroCards, but instead to use coins to buy paper tickets for the subway system, so as to subvert that surveillance mechanism.

Andreas M. Antonopoulos: 15:01

But in China in general, we're seeing this move to apply social consequences, more than a hundred million people have now been prevented from public transport, flying on an airline, getting on a train, getting jobs based on something they call a social credit score, and those kinds of attitudes are permeating in the West. The idea of pre-crime and thought crime, and scoring people according to their behaviour, and then changing the level of freedom they have.

Andreas M. Antonopoulos: 15:32

You said earlier we're losing cash. Well, there's a deliberate attempt to eradicate cash transactions, so that everything can be inside the closed and surveilled financial system. So when a lot of people think about and hear about Bitcoin, they hear about digital currency, and they think that our future is a choice between analog currency that we have today, and the digital currency of the future. That's not true. We already have digital currency today. 92% or more of all of the currency in circulation in most countries is completely intangible, it's in spreadsheets, and databases, and banks. Only 8% is in physical cash, and that physical cash is shrinking, deliberately being eradicated from the economy, and there are more and more strict limits as to what you can do and how much you can use cash for.

Andreas M. Antonopoulos: 16:29

So what happens when that goes to zero? Well, now you have the future, and the future basically, is now a choice between two different forms of digital cash, one of which is government controlled, completely centralised, completely surveilled, end to end, and with the ability within one wrong election to elect an authoritarian government that can simply turn off their opposition's finances, imagine if you go to a protest and from that moment on, you cannot buy food at the grocery store, and that's the future we're marching into.

Andreas M. Antonopoulos: 17:04

And the other possible future is a digital currency of the people, by the people, for the

people, or in fact many, many digital currencies with different degrees of privacy, different degrees of flexibility that give us choice, that are completely transnational in operation, that do not pay dues to intermediaries like banks, but they also don't serve up our private data to governments, and most importantly, they cannot be turned off. You cannot be turned off as a person, and your rights cannot be turned off with these systems of cash. So it's a stark choice.

Peter McCormack: 17:46

Yeah, I mean what happened in Hong Kong was incredible. I did see that, and without physical form of cash, that wouldn't have been possible. They would not have been able to have bought those tickets. There is a, I find a general growing distrust of governments globally. Especially at the moment, we're seeing lots of different movements and lots of different demonstrations, from France, to Lebanon, to Chile, to Hong Kong, we've gradually seen an erosion of our personal freedoms. Are there any side benefits to Bitcoin whereby it helps protect freedoms outside of finance?

Andreas M. Antonopoulos: 18:19

Oh, well, absolutely. Yeah. So because financial activity is at the centre of human social activity, even though money is stigmatised, the truth is that it actually provides a basis for a lot of the underlying social activity that happens. You've got to think about one of the other aspects of this, is the difference between acting locally as part of a neighbourhood and community, where you have a significant amount of interaction and exchange of value in your local environment, so that versus acting through global intermediaries.

Andreas M. Antonopoulos: 19:02

So for example, when you go to your local grocery store, your local news agents, and you shop with cash, what you're doing is you're keeping that transaction entirely local, and that allows the local business to thrive and continue. As you can imagine, the more intermediaries you add and the more secondary costs you add, the more that erodes their ability to continue, and they get replaced by big chains. And essentially, that's not about just financial activity, that's basically breaking down the fabric of local communities and neighbourhoods, and breaking the ties that that keeps society together, until you're not talking to anyone you know, you're talking to a junior employee of a giant conglomerate who is only in the store for three months before they get moved to another job, and not only doesn't know you, but even if they did, can't really serve you as a person because they're not authorised to deviate from a checklist and a script, and that's basically taking away our humanity. That's destroying the basis of neighbourhoods and societies. So those are the secondary effects.

Andreas M. Antonopoulos: 20:18

The other big one of course is in politics, especially if you think about it in terms of global politics. If I as an individual want to hire someone in another country in order to do some web design work for me, now we are in the 21st century, people can export their labor directly. And that also means that I can invest and inject a vitality into an economy that is in crisis and help some people out, not as charity, but by giving them employment. Well, with traditional financial systems, that's almost impossible to do. And so the freedom to do commerce globally is really important.

Andreas M. Antonopoulos: 21:05

And then finally, there's the whole aspect of participating in the political activities. So democracy itself, it's bad enough that democracy has been flooded with more money and that's the predominant mechanism of speech, but it's even worse when that money is very, very tightly controlled by financial institutions that can therefore control and funnel or prevent the accumulation of money in certain political causes. Whether that's, for examples in the west, WikiLeaks or next year it might be Green Peace because they decided that's a terrorist organisation. Money will always flow to Lockheed Martin. It will never stop flowing to them. But it may stop flowing to your local animal activists, environmental activists or other political organisations. I think recently they tried to pass a bill in the UK to ban some environmental group or classify them as terrorists or something like that, so that-

Peter McCormack: 22:08

The extension of rebellion.

Andreas M. Antonopoulos: 22:10

Yes, exactly. Right. And here in the US, they even tried to do that with... I can't remember the name of it, with this cycling thing, which is a once a month gathering of cyclists in the streets, which has been going on for 25 years in New York. I think it started in New York.

Peter McCormack: 22:29

So the WikiLeaks thing is interesting because a lot of people won't actually know why Bitcoin was so important for WikiLeaks. They won't know the background to Visa and MasterCard and what actually happened. They will know who WikiLeaks are, they will have heard of Julian Assange and know what they did. But it might be worth here explaining actually what happened with WikiLeaks and Bitcoin and how it helped them.

Andreas M. Antonopoulos: 22:49

Yeah. So the thing here is that back in, I think it was 2012, an embargo was started against WikiLeaks and this was, I believe it was right after WikiLeaks published the first of Chelsea Manning's diplomatic cables that revealed war crimes in Iraq, especially the assassination of the Reuters journalists from a helicopter, and various other war crimes that were happening and had been covered up. And at that time, an embargo was initiated.

Andreas M. Antonopoulos: 23:26

Now keep in mind, this is a situation where you have an organisation that is publishing and therefore is committing acts of journalism. They had every right to have that information because they were under no obligation to keep it secret, nor were they bound by any confidentiality or secrecy agreements. Now Assange is being prosecuted under the espionage act, which is preposterous and unconstitutional, but it may actually succeed. Anyway, WikiLeaks was not prosecuted. WikiLeaks was not charged. No grand jury was a panel, no opportunity to get witnesses or examine charges against them, no.

Andreas M. Antonopoulos: 24:05

Instead what happens is the Department of Justice sent a letter to Visa, MasterCard, PayPal, and American express and said, "If you do business with these people, we are going to start auditing you and putting pressure and cut you off from our systems." And through that extra judicial coercion, they all immediately cut WikiLeaks out of the financial system. And of course, WikiLeaks then had no ability to appeal. Appeal what? No judicial action had actually been taken. And this is the classic behaviour of a regime. If it wasn't the US, we would have called that a regime. When when Putin does that shit, in Russia, we call it a regime.

Andreas M. Antonopoulos: 24:51

And so at that moment, people who were involved in the Bitcoin space decided to persuade WikiLeaks to start accepting Bitcoin to bypass the embargo. And things like that have happened many, many times since.

Andreas M. Antonopoulos: 25:05

Now, you may think that, politically speaking, WikiLeaks is an extreme example because WikiLeaks is engaging in nation states' geopolitics and maybe they're not so innocent and maybe they have relationships with various nations, none of which really matters because the rule of law is not about who you are. It's about applying things equally to everyone. Once you start taking shortcuts there because the means are justified by the ends, then you don't have rule of law anymore. You just have raw power.

Andreas M. Antonopoulos: 25:39

If you don't like WikiLeaks and you think, "Oh well, serves them right. They shouldn't have poked the bear." Then we can look at several other examples where this has happened, two far, far simpler causes. In the US, this kind of activity in an operation called Operation Choke Point, which is a collaboration between the Department of Justice and various state agencies to cutoff a whole list of industries that operates in the US that are actually legal, both legal federally in many cases and other cases, not legal federally, but legal in some states like cannabis where it had been legalised. Medical cannabis included. Other ones that included licensed and legal gun dealers, escort services, gentleman's clubs, basically strippers, sex workers of various types, pornography and things that at least in the US are perfectly legal. And through this operation Choke Point, they basically shut down their access to the banking system entirely.

Andreas M. Antonopoulos: 26:45

And of course, the side effect this has is, one, you end up with these businesses becoming largely cash operated businesses, which massively increases their risk of getting robbed at gunpoint. In the case, of course, of sex workers, that means a massive increase in violence and risk for people, who until then were able to engage in this profession through online payments and with online appointments. This got much worse with FOSTA, SESTA, whatever they're called, those laws that were passed in the US, pushed a lot of people back out onto the streets. And the murder rates among sex workers has quadrupled just a year later, directly as a reflection of these policies.

Andreas M. Antonopoulos: 27:39

Again, all of these people are dirty perverts who are doing things that we don't like as a society so you may decide they don't deserve the protections of law. And let's keep going down the list because first they came for WikiLeaks and I wasn't a spy so I didn't say anything, then they came for a sex workers and I wasn't a sex worker, so I didn't say anything. Then they came for pot smokers and I wasn't a pot smoker, so I didn't say anything. Well, next they're coming for immigrants, and I don't know about you, but I'm an immigrant. I'm an immigrant in this country and I've been an immigrant in most of the countries I've lived in. Next they come for immigrants, then they come for refugees, then they come for protesters of the Keystone pipeline in North Dakota, then they come for protesters for democracy in Hong Kong, and the list goes on and on. This is a slippery slope. There is no category that they will not apply control and power on unless that category is rich friends of the dictators themselves or rich friends of the current regime, elected or not.

Andreas M. Antonopoulos: 28:42

And so if you take comfort in the fact that they haven't come for your demographic yet, trust that whenever we've seen history start demonising whole groups of people and throwing them outside of the scope of the rule of law, the circle of people affected gets wider and wider. And the circle of people who can get away with it gets smaller and smaller. And before long, you're going to find yourself on the wrong end of something. And this isn't a partisan issue. This isn't a left versus right. They do it equally to people on the right who are protesting for the things they believe in and they do it equally on the left to people who are politically active for the things they believe in. This is a bipartisan issue of power of the very few over the very many.

Peter McCormack: 29:36

And we shouldn't think that just because I'm in the UK, I'm near London, and anyone who's in another country such as the US or Germany or even Australia that are kind of seeing this, I mean especially Australia recently, but countries that we believe that are fair, open, and free democracies. We shouldn't feel like that we aren't a risk here. I think especially with what's happened recently-

Andreas M. Antonopoulos: 29:59

Quite the opposite.

Peter McCormack: 30:01

Yeah, especially what's happening in Australia recently.

Andreas M. Antonopoulos: 30:04

Yeah, and the UK. I would bundle the UK in that, the UK has had two decades of reactionary authoritarian laws starting with RIPA, which I was there when that was being discussed in the early nineties, and then they just keep piling on these authoritarian laws and keep eroding personal freedoms. And Australia has simply done it on an accelerated schedule. It's a smaller population, they can run those experiments much more easily. And the reason a lot of that is happening there is because if it works and they get away with it in Australia, they export that shit immediately to the UK.

Andreas M. Antonopoulos: 30:45

And of course, the other thing you got to realise is while in many of these countries there are laws from preventing the whole scale surveillance, and intrusion of privacy, and authoritarian measures against their own citizens, they are allowed to do it against citizens of other countries. So they have these beautiful bilateral agreements where the Brits spy on the Americans, the Americans spy on the Australians, the Australians spy on the Brits, and they just pass the information backwards and forwards. So the fact that your government isn't allowed to spy on you is small comfort if you understand that they just outsource that to the other four parties in those agreements to do it for them, and they still get the same information and they share those databases. So it's just a thin veneer of legality thrown over what is a vast conspiracy but not a conspiracy theory, an actual conspiracy that has been profiled in great detail.

Peter McCormack: 31:44

Another really important area for why we need Bitcoin is with regards to how central banks manage the economy and manage monetary policy. Do you want talk about that and how Bitcoin changes things with regard to that?

Andreas M. Antonopoulos: 31:57

Yeah. Well, there's two really broad perspectives to this. One of them you hear a lot in Bitcoin, which is a sort of Austrian economics based perspective that is mostly focused around free markets, and capitalism, and libertarian ideology as well as the soundness of money, the gold standard, et cetera, et cetera, which is I think a great intellectual framework. But at the same time it's also one that can be alienating to some people who are on a different part of the political spectrum, unnecessarily. So I'm going to go with a different tack. I mean, you can read a lot about that and hear a lot about that, and I think that's a useful framework, but it's not everything.

Andreas M. Antonopoulos: 32:43

I'm going to take a different framework, and that framework is this, our current financial system is fragile. The traditional financial system is fragile. And the reason it's fragile is because when you have a system that is very, very complex and dynamic like the international financial system, when you have imbalances in the system, those imbalances can be fixed by people making private relatively selfish decisions to profit from those imbalances. And also by small cycles of corrections where if things are not efficient, a more efficient competitor will step in. Or if a business is malperforming, it will go bankrupt, it will get its assets essentially recycled back into the economy. So a more vibrant startup can pick up some of those assets really cheaply, finance its ability to compete. And these are all healthy things, but what's happened over the last 25 or 30 years is with a huge amount of intervention, especially through the financial services industry. The governments have sabotaged, and in some cases completely stopped, many of the normal functions of open markets. So they prevent the dynamic self-correcting mechanisms from taking place and try to control things.

Andreas M. Antonopoulos: 34:16

I used the metaphor before, which is this idea that if you have a forest and you aggressively put out all fires that occur in that forest, you disrupt its natural cycle. And so undergrowth, that would be cleared out every now and then with a small fire,

accumulates and then you have a massive conflagration, which doesn't just clear out the undergrowth, but it turns the ground to glass, sterilises the top soil, and destroys the ecosystem to a degree that it doesn't recover for a decade. So stop a lot of small fires, you get a big one that's actually destructive rather than the small ones. People in California learned that lesson over decades because in order to protect property, they destroyed the ecosystem of the forests.

Andreas M. Antonopoulos: 35:05

But the same thing happens on a bigger scale in economies, which is if you don't let the Lehman brothers, and the Goldman Sachs, and the Deutsche banks that are actually zombie banks that are functionally insolvent, if you don't let them take the losses, get broken apart right off the loans, take the hit, burn the investors who took those risks, and do it on a small scale. And instead they get bailed out, they get a new method of accounting where they can hide these losses, they get zero interest money where they can basically accelerate and increase their leverage, they simply double down and make it worse and build bigger nonperforming loan portfolios with cheaper money. And if you repeat that enough, and we've now been doing it since the early eighties again and again and again and again and again, you build up the undergrowth, the dead wood in the forest layer, if you like, of the economy. And you have all of these zombie malperforming companies that are not going out of business, that are keeping all of the capital in the workers and the equipment tied up because they can get yet another junk bonds loan from a non-performing bank that itself is insolvent but is not being allowed to go under, et cetera, et cetera. That system is fragile. In 2008, we saw it almost blow up in our face. And once again, the solution was to not let it basically clear out the dead wood, but instead fuel an even bigger set of bubbles that's going to blow up even harder next time. If we keep doing this we're basically going to see very, very bad crises erupt.

Andreas M. Antonopoulos: 36:56

Our current traditional financial system, because it's constrained by borders, because the money itself is being used to play geopolitics, because the banks have become deputised in law enforcement to fight various stupid war on X type battles of social politics and meddling in society because the same financial organisations, and their super organisations, the central banks and the wire transfer systems like Swift, have not only been deputised into law enforcement, but have been drafted into the military and have become part of militarised currency that is used to fight trade wars, and currency wars, and sanctions, and embargoes to promote various geopolitical goals. They have, at the same time, become incredibly fragile as mechanisms of commerce. And in a world that's increasingly globalised, you have all of these islands of separated fragility that can't balance out, and that's the real danger.

Andreas M. Antonopoulos: 38:04

It's not just about sound money and capitalism, etc. It's about saying that the people of Sudan don't deserve to have access to the world economy so let's condemn them to poverty because that's going to fix terrorism. No, it's going to make it worse. And we keep doing this to dozens of countries and we keep condemning billions of people to poverty while we build these house of cards, financial systems in developed nations that are a mirage of money changing hands as fast as possible and debt getting

shuffled around in this giant musical chairs game where at first there were fewer chairs than people dancing. Now we just took the chairs away entirely and we're just pretending it's all cool because no one remembers the last time the music stopped. 90% of the traders in the markets today have never seen bond interest rates above two or 3%. 90% of the traders in the markets today have never seen a bond crash. 90% of the traders in the market today, got into their profession after 2008, have never seen massive stock losses. They're in for a surprise.

Peter McCormack: 39:22

Yeah. How big is the bubble? Have projected how bad a crisis we could have if it pops and it truly pops? What's your position on Bitcoin being an insurance against this and being a safe asset? Do you think it could be? Do you think it's an unknown?

Andreas M. Antonopoulos: 39:38

I don't know how big the bubble is. I know it's bigger than 2008. Significantly bigger. And you can see that in stock market valuations. And it's no longer just one bubble. What happened in 2008 was primarily concentrated in real estate and now it's spread to every financial asset out there. In many ways, it's also spread to crypto. One of the reason we've had these massive rallies in crypto, is because once you've invested in real estates, bonds, equities, junk bonds, commercial bonds, municipal bonds, student loans, automobile loans, commodities, et cetera, and all of those are hyperinflated. At some point you go, "Well, what else is left that's still delivering yields", and you see this little crypto market on the side, and like, "Ah, let's throw some billions into that. See what happens." Cheap money sloshing around isn't good for any industry, and some of it is sloshing into our industry, and creating these extreme situations.

Andreas M. Antonopoulos: 40:41

I don't think that we should wish for a crisis, so that we can see how good the lifeboat is. That's like the manufacturer of a lifeboat trying to demonstrate their new lifeboats on a giant cruise ship, but they've only got enough space for 12 passengers, and those 12,000 passengers on the ship. You don't start drilling a hole in the hull to test your new lifeboats at that point. We're not big enough, and so if there is a massive crisis, first of all, what most people don't realise, I think, is that in the beginning, at least, crypto will crash hard, and the reason it will crash hard is because a lot of the ventured capital, corporates investments, and privates investment from individuals that is based on cheap money, and disposable income, and excess cash, and portfolios, et cetera, like in every other part of the economy will dry up, right?

Andreas M. Antonopoulos: 41:40

When people get scared, when there is a recession like that, or they pull back their investments, and they're going to pull back from crypto, too. Crypto needs, what is it? \$100 million a day in order for the price to just stay where it is. I think some number like that, I don't remember exactly, but based on the new supply that's created.

Peter McCormack: 42:01

1800 coins.

Andreas M. Antonopoulos: 42:03

That's just Bitcoin, but you know across the entire industry, if you only take Bitcoin, yeah, 1800 coins. What is that? \$18 million. People need to buy \$18 million dollars of Bitcoin just for the price not to go down, right? Just to stay exactly where it is every day, right? On top of what they already own. So, that's a fair bit of investment, and times 365 you're looking at a good chunk of change every here just to maintain parity.

Andreas M. Antonopoulos: 42:36

So, from that perspective, I think the first order effect that happens if we have a massive recession is crypto crashes, because all of the liquidity dries up, which is the classic effect, and for a symptom of a recession. Then there is a number of possibilities. One of which is that it emerges as one of the safe haven assets, and people try to exit the things that are crashing faster for the things that are crashing slower, and you see the classic pattern where gold, and Bitcoin, yen, and Swiss Francs, a couple of other metals, and commodities either stabilise, or either start growing in price, or in value. But, again, this is a difficult technology to get into. The number of markets that exist are relatively limited. The on-ramps, and liquidity to get onboard is limited. People don't know how to use the technology. It's going to lead a lot of people into custodial situations where somebody else holds their keys, which is going to cause hackers to take away that crypto.

Andreas M. Antonopoulos: 43:49

So, all of those things are really a symptom of the fact that we have a small lifeboat, and a very, very large number of people who need saving. So, I'm hoping we don't end up in a crisis anytime soon cause we're not ready. And it's going out into your front yard, and going, "I'm rich, bitches", when all of your neighbours are unemployed, and starving is a scenario for the apocalyptic fantasies of preppers in the US. It's not a scenario for a good society. So, I think that's a dangerous scenario.

Peter McCormack: 44:27

You've explained a good number of reasons why we need Bitcoin. You know, I understand these myself, and we do have various people to talk about hyperbitcoinisation. But do you see a scenario where Bitcoin becomes the primary currency, or do you see a scenario of dual currencies where it sits alongside traditional fiat. How do you see this playing out?

Andreas M. Antonopoulos: 44:48

So, I get roundly criticised for this because there's two aspects to this, and there's two aspects to my perspective. First of all, there's a difference between what I want to see, and what I think will happen. That's important to mention. What I think will happen is not necessarily what I want to happen, or I think is the best scenario of the rational scenario, or the outcome of sound, rational economics, I don't think most people are particularly rational. I would like to see a form of sound money with a single efficient protocol that allows everybody to trade cleanly, and efficiently with a common unit of accounts. Oh, beautiful. What a great world, and also everybody should speak English to make it easier for me, because that's the language I learned, and also everyone should follow the same political, and religious opinions.

Andreas M. Antonopoulos: 45:40

None of this is going to happen because people are fickle, weird, and unique. So instead what I see happening is there will emerge a few economic standards that will dominate the economic value of money, and some of these may be Fiat, some of these may be gold backed, or some other asset backed mechanism of money. But I do think in the longterm, the majority of these, if not all, will end up being crypto. Within those I expect we'll see a classic power law distribution where one, two, or three, systems will dominate more than 50% of the value. Maybe not a lot more than 50, and the leader may only have about 40% but the tail is so long, the next three combined don't even have 20. So, again, that's kind of the very dilute, minimally maximalist perspective, because it's still a power law.

Andreas M. Antonopoulos: 46:47

You still have a very strong dominance of one economic system. But I do think that what we're also going to see is the emergence of thousands, and thousands, of different tokens, which will have varying degrees of economic utility. Some of them will only be for social affinity, and association, meaning sports teams, pop stars, maybe even nation states, as sports teams, if you know what I mean. People who basically subscribed to USA coin, because they liked chanting, "USA! USA!" And it's a sports metaphor for nationalism. You may see, of course, many currencies that have lesser economic value, but have other forms of utility, perhaps more flexibility for transactions, or smart contracts, or other things like that. I think we've gone from a world where there were very few choices, to a world where there will be an overwhelming number of choice. To me, the real tipping point is when most of those choices are no longer made by you, but by intelligent software that resides in your digital wallets that decides which token currency, or system is the best for the transaction needed at the moment, and which token currency, or system is the best for longterm store of value, and shuffles between the two of them.

Andreas M. Antonopoulos: 48:19

So, a bit like a protocol negotiation, and you open your browser, and you go to HTTPS, google.com your browser talks to the Google web server, and says, "I support the following 14 encryption standards, and hashing standards. How about you?" And the Google service says, "Well, I've got these 12, but I really like these three. How about we do the first one?" And your browser goes, "Yeah, I can do the first one, but I actually prefer the second one." And then they eventually negotiate, and start a connection. This happens in sub second time in your browser.

Andreas M. Antonopoulos: 48:53

I don't see why can't have a similar environment emerge where you walk up to a coffee shop point of sales system, you know your phone arrives in proximity, and says, "Hello, I support the following three currencies, two of which I have liquidity in right now. One of which I can swap over, in half a second. What do you want?" And the point of sale system says, "We accept the following 4,635 currencies." And you find the intersection of those two sets, and your wallet takes care of it. You don't even know what currencies you have, or what currencies you're paying in. That's a protocol level choice.

Peter McCormack: 49:34

Wow. Okay. So, I want to finish on two final questions for you. The first one is there'll be a number of people listening to this who haven't bought Bitcoin before. I've heard about it. Maybe they don't fully understand it. Maybe they're dismissive of it. They've heard everything you've said, but right now the world is okay for them. They go to work, they're getting paid, and they've got their debit card to pay for everything. What do you say to them, and why they should care about Bitcoin now?

Andreas M. Antonopoulos: 50:00

So, what I say to them is that the first thing to realise is that this is a fairly important new technology. It is the internet of money, and the monetisation of the intranet itself, as a protocol. And just like learning how to make HTML webpages in the mid nineties, or learning how to make mobile apps in the mid two thousands, you can build a career, or profession, or a specialty in your current career, and profession, that differentiates you from everybody else. I think one of the biggest benefits you can get from this space is being one of the people who learned the skills, understood the terminology, and words, and were able to apply it within their own career early. So, knowledge is power, and also knowledge is an investment, and it's an investment that doesn't have volatility. You can't bankrupt your knowledge, and even if you learn something that's not immediately applicable in one area, it usually crosses into others.

Andreas M. Antonopoulos: 51:05

The other nice thing was with education is you don't have to pick the right technology. So, maybe you start studying the wrong blockchain. Well, it doesn't really matter, because the things you learn apply to many other places. Unlike if you invest in the wrong blockchain chain, in which case that can be painful. You also don't have to get the timing just right. Timing is really important in investments. Not so important in education. The space is moving fast, but it's also moving a lot slower than society itself. So, there's plenty of time to apply this knowledge, and whether you acquire it today, and apply it five years from now, or eight years from now, doesn't really matter. So, education first. The second thing is almost everybody I hear who comes this space asks me the question, "How do I buy Bitcoin?" And my answer is don't earn it. Shift your perspective to one of acquiring an investible unit, or commodity, to one of participating in this new economy itself. By swapping the thing you always swap for value, which is your labor, your services, your products, your crafts business, or whatever it is that you would do four units of currency. You don't buy sterling, you don't buy dollars, you earn them, your boss pays you in them, and yes, maybe you can persuade your boss to pay you in it. If you're self employed, it's a lot easier, but most people have a little second gig, or a hobby, or something where they can start doing it. Start playing with this stuff, and experiencing it. Maybe at first nobody tries to pay you in crypto, but one day they will. Then finally, if you do decide to invest, there are a couple of important principles that we have in this space.

Andreas M. Antonopoulos: 53:01

Probably the most fundamental, and one of the slogans I coined is "Not your keys, not your coin." Meaning that this is a system where we remove intermediaries, we remove third parties, we don't give other people control. That's one of the benefits of this system of money. So, in order to really acquire Bitcoin, not just acquire a promise of

Bitcoin from someone else but acquire actual Bitcoin, you first have to learn how to control digital keys. That's quite a learning steep curve, but it's worth learning, because it's a fundamental new skill of the 21st century.

Andreas M. Antonopoulos: 53:43

So, learn how to control your keys, and once you've learned how to control them, then maybe invest in a small amount of digital currency, and only as much as you feel comfortable controlling was the level of knowledge you have about how to control your own keys. Then build from there. There's a lot of great, local communities where you can meet people. Some of them will try to persuade you to get involved in multilevel marketing pyramid Ponzi scheme. So, don't believe promises of easy riches. Instead, try to find the people who want to teach you how to use the tools, who seem to be in it for principled reasons, not moneymaking, and then take it at your own pace.

Peter McCormack: 54:26

So, you actually answered my second question in there. Where I was going to say to you next was how does somebody then get involved? So, you've answered that. So listen, to close out, Andreas, it'd be great to let people know how to follow you. I've learned so much from you, I've learned so much from your videos, and what you've done, and you've been a great help to me, but not everyone who listens this will know you. If they want to find out more, they want to read more, or watch more of what you've done, where are the places they can find you?

Andreas M. Antonopoulos: 54:51

So, the easiest way is to use my online handle, or nickname if you like, which is aantop, it's the first initial of my first name, and then the first seven letters of my last name, A-A-N-T-O-N-O-P. I am aantop on Twitter, aantop on YouTube, pretty much everywhere with a few exceptions. If you see someone saying they're me, and they want you to invest in their scheme, they're not me. I do almost all of my work as free open source licensed education that is available for anyone, for no money. Available online, freely shared, mashed up, and reused by everyone. I've produced hundreds of videos, and audio shows, and four books, I'm currently writing my fifth, which will be published this year.

Andreas M. Antonopoulos: 55:43

You can get all of that for free, and in return, many of the people who have benefited from my work then support me directly with a subscription on Patreon, which allows me to be neutral, to not have sponsors, to not charge for community events, and things like that, but instead to be responsive, and accountable to the people I educate, and to the people who appreciate my work on a voluntary basis. So, you can also find me on [Patreon.com/AAntonop](https://www.patreon.com/AAntonop), which is really important for me because it helps me pay for my staff that'll help me get the educational material to more people around the world, and more languages than ever before, and to continue doing this work.

Peter McCormack: 56:29

Fantastic. Well, I will share out every link in the show notes. I will encourage people to follow you on YouTube, on Twitter, to buy your books, and just keep doing what you're

doing, and I appreciate you coming on my show again, and good luck with everything you're doing.

Andreas M. Antonopoulos: 56:43

It's been a real pleasure, and I hope we'll talk again.

Peter McCormack: 56:46

I'm sure we will. Thank you.