



Do you know we're going to talk about today? It's called blockchain with blockchain. That's a really good question. It's actually a way that we can trade. Well, sometimes that definitely happens for sure. So Ian, do you know what blockchain is? No have you ever traded or sold anything? Actually, I'm selling my computer on eBay right now. What made you decide to trade on eBay? Well, I, I mean I've heard of it and I trust it a lot because there's they have like all their guarantees. So I I know that I'm going to get money and the person is going to get what they want. Need an eBay or a brand in between? That's cool and there's a lot of those kinds of middle men in our society today, right? We have a lot of banks. We have a lot of companies that sort of help us make sure that our trades happen, but if we could guarantee the same trade using technology as sort of like a technological trust, then we wouldn't really need all those middle men in between.



So it's sort of constantly updating itself. Like how do you make sure that it's secure so it uses cryptography and that helps it. Basically, encode all of the transactions, so you can't really see exactly what happened, but you know it happened because it's like a marker, so you could kind of like I don't know, say, trade. You trade apples, but you would just see like random letters for it, so you wouldn't be able to like track it exactly. That's cool, so it's kind of this like really big Ledger or accounting system for all sorts of things that get traded.



But as the distance in our trade grew, we ended up inventing institutions, right? If you use Uber or you use Airbnbs or you use Amazon. Even these are just digital marketplaces and platforms that help us facilitate an exchange of value. But today we actually have a technology. That allows us to trade one to one, but at scale, and it's called blockchain technology. There is some kind of interface

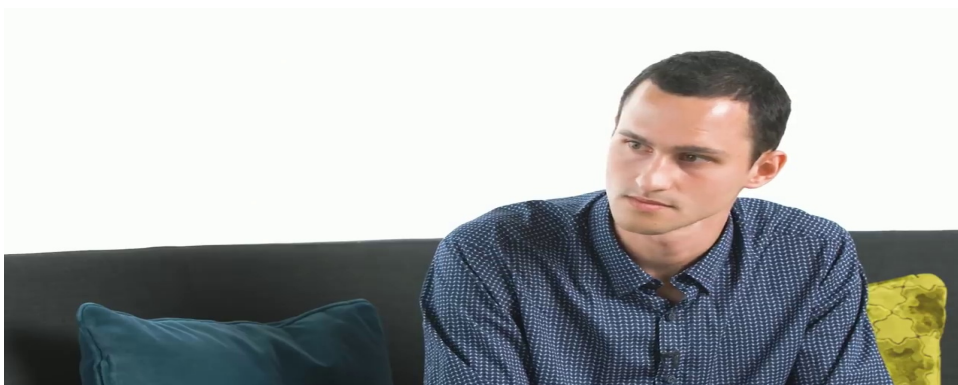
for it. You could have an app, or you could use your computer to do it, but instead of there being a company in the middle or what's helping you make that transaction is a bunch of software code and so it's being run by all of these different computers that have like a node so they're all running the same software and. Guaranteeing your transactions as they happen. I mean, I would assume this technology is taking away business or activity from these middle men in some cases.



So your government could sign that you have a US passport or a university could sign that you are a currently enrolled student, and you could then dole out that information and control it yourself and be able to show people those certifications.



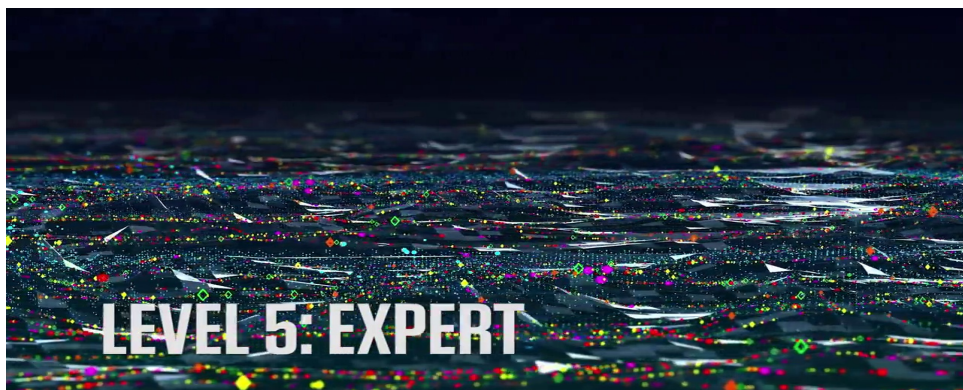
And as needed basis. So today we're going to talk about blockchain technology you ever heard of blockchain? I have whenever we have a transaction. And let's say I buy something from you. This information gets logged and it gets verified by third person or third party and then if like all this information verified and it all matches right, the transaction goes through without any intermediary basically right and it gets stored. So there is obviously a need to to work on on the trust and feeling that it's it's a safe technology. Yeah, one of the problems that Bitcoin is faced is bitcoins getting stolen or lost. But a lot of that actually comes from people trying to re centralise Bitcoin in different ways, making themselves actually a pretty easy target. Absolutely so education will be a big part before we actually can use the technology in a wide sense.



Yeah, to actually transition into the mainstream.



I mean no one really knows, right? Well we have a lot of public blockchains like we have Bitcoin. We have the Ethereum network and XT but a lot of companies and consortiums are getting together to build private blockchains, so ones that are. More closed off at first and then may evolve into a public network when people feel comfortable using it and some are also proof of concepts out in the real world. Projects in energy and in pharmaceuticals and in retail and lots of different fields are starting experiments and we'll see you in the next few years how all of those interact and what we learn about the best use cases for blockchain and what it means for trade. So tell me your version of a technical definition of blockchain.



Network so it randomizes. Yes, yeah it randomizes the process and in theory ensures that no one can force the blockchain to accept a particular entry onto the Ledger that others disagree with, one that relies on the mechanism for a peer to peer network. That can maintain updates to the Ledger and then verify those updates in such a way that it is impossible to defraud and impossible to alter after the fact. Do you see it as defining a new discipline of kinds, or where? Where are we going to see blockchain emerge in the real world first? I mean just so like as an example, one thing that I think about a lot in terms of possible blockchain applications is electricity, right? The next generation of distributed smart grid technology effectively? If you have a mechanism that is able to automatically and autonomously be distributing power based on batteries that are scattered throughout the grid that are being used for other purposes. Their owners don't even necessarily need to be aware you begin to have something that looks like a much more viable society that still has a lot of electricity needs, but is able to base that much more on renewables is able to make up

the difference during peak load periods or during differences in weather that is able to have power much closer to where it's needed, rather than having to be distributed over great distances like that's something that would be an enormously hard problem to solve. And it's not that the blockchain makes it easy, but it makes it possible. A lot of people are seeing blockchain in the news and be seeing a lot of sort of initial coin offerings. I'm glad you mentioned initial coin offerings, because for me, those really exemplify the sort of the problem that we're having at this exact moment. They are an idea with enormous potential significance down the road. However, the promise of the initial coin offering has been kind of hijacked into this string of like.



Basically pump and dump scams or sort of desperate gold rush schemes. The faster that we can we can shift from this fantasy that it is going to make you rich in a sort of 1920s Tulip bubble kind of way.



It barrier being sort of a rigidity in yes. Structures that maybe don't accommodate real life scenarios very well. As you and I have been talking, one of the things that keeps coming up is that we tend to hold novel technologies to an unrealistically high standard in terms of what they are supposed to deliver, rather than comparing them to actually existing systems where we can begin to see the possibility that even like a slight incremental improvement would still be an enormous. Gain the system we have today is also broken, right? And then yeah, it's hard to compare it to some perfect future, just like we compare.





Autonomous vehicles to this very high standard? Yeah, because machines are doing it should be perfect, right? There should be 0 card debt and when you say well, there's hundreds of thousands.