EPISODE 541

[INTRODUCTION]

[0:00:00.3] JM: Cryptocurrency speculation has pulled in a large population of people who do not know what they are investing in. If you hear about an investment of a $1,000 turning into 1 million dollars, it's tempting to get sucked in yourself. For most of these everyday people that are getting involved in cryptocurrencies, the game is completely rigged.

A large percentage of market activity is driven by pump and the dumps. A pump and dump is a conspiracy to trick investors into buying a currency. An insider group commits the pump and dump. This is accomplished by purchasing the currency ahead of time. For example, a currency like let's say Tron, which is clearly been earmarked as a fraudulent counterfeited whitepaper cryptocurrency.

These insiders could purchase the currency ahead of time and then promote it on Twitter and telegram and Reddit. Then the outsiders, the people who are not the insiders, the people who did purchase the currency ahead of time fall victim to the promotion of the cryptocurrency and they buy it after the fast run-up in value.

The currency then crashes and the outsiders are left holding the bag. Pump and dumps are not a new phenomenon. They have happened with worthless penny stocks for a long time. That's what the Wolf of Wall Street was about.

One thing that is new is the ease with which new cryptocurrencies are being created. Launching an ICO is easy, marketing it is cheap. Pumping and dumping has never been more accessible. Buying these currencies is quite easy as well. This had led to the perfect storm of naïve investment capital.

Bruno Skvorc is the CEO and owner of Bitfalls, a site with blog posts, news and information about cryptocurrencies. He wrote a blog post called The Anatomy of Pump and Dump Group, which details how cryptocurrency pump and dumps have been used to swindle investors at a millions of dollars.

This was one of the more interesting pieces on cryptocurrencies that I have read in the last couple months, and I was really excited to have him on. I look forward to having him on again in the future.

If you are looking for an internship, you can apply the Software Engineering Daily internship at softwaredaily.com/jobs. If you're looking to recruit engineers, you can also post jobs for your company there. It's completely free to post jobs and to apply for jobs. We're hoping to find interns to contribute to the software daily open source project, which is our mobile apps, as well as our web app, which you could find at softwaredaily.com.

You can download the apps in the iOS and the Android app store. They have all of our episodes indexed and they're categorized. We've got a recommendation engine, we've got related links and discussions and some community features on the way. They will be in a very soon poll request that is in the works this week.

Meetups for Software Engineering Daily are being planned. You can go to softwareengineeringdaily.com/meetup if you want to register for an upcoming meetup. In March, I will be visiting Datadog in New York and HubSpot in Boston. In April, I will be at TeleSign in LA. Again, you can go to softwareengineeringdaily.com/meetup to join our meetup group.

With that, let's get on with this episode.

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[0:03:35.5] JM: Software Engineering Daily is brought to you by ConsenSys. Do you think blockchain technology is only used for cryptocurrency? Think again. ConsenSys develops tools and infrastructure to enable a decentralized future built on Ethereum, the most advanced blockchain development platform.

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[INTERVIEW]

[0:04:51.5] JM: Bruno Skvorc is a blogger for Bitfalls and is a journalist around the cryptocurrency space. Bruno, welcome to Software Engineering Daily.

[0:05:00.8] BS: Thank you very much. Thank you for having me.

[0:05:02.4] JM: Yeah, it's great to have you, because you have been writing about pump and dumps a little bit and you're writing about some other topics of somewhat disreputable activity in the cryptocurrency space. I want to get into some of the specifics of the wrongdoing that you're reporting on. Let's start a little bit higher level. When did you start writing about cryptocurrencies? Why did you get involved in this space?

[0:05:32.1] BS: Well, I got involved when I first invested in Ethereum, and I got involved in it purely informational way, because that's when I started investing. As I looked into it deeper I realized that there is more and more scams out there. It's not like writing or investigating scams is my primary part of what I'm doing, but it is taking up more and more of my time as I find it increasingly more interesting and challenging to find these – especially those elaborate, more carefully planned scams.

Yeah, basically what I try to do is just provide technical education to people who might not be technically literate or able to recognize the wheat from the chaff, so to speak. Bitfalls is there to just give people a shot at understanding this technology that only enthusiasts understand for now.

To be honest, most enthusiasts don't even understand. They just gamble right now. My aim is to make this technology and everything that comes with it both good and bad more familiar to civilians.

[0:06:41.6] JM: Do you have a sense for how much volume in the market is due to scamming and people who have a good understanding of market manipulation? Is that even something that you can get a sense for?

[0:06:57.2] BS: Yeah. I would say the vast majority is manipulated in some way or another. Now it's not all scams. I would say maybe 10% of the entire market cap is actually usage and usefulness driven. The rest is a mismatch of maybe some scams, some frauds, some pump and dumps, some pure good old hype and take painting. Really standard old stock market tricks from the 80s and before it was all regulated.

All those Wolves of Wall Street now have a new battlefield on which to mow down civilians and just practice their craft. Everything they've learned but wouldn't allow to practice, now they can again. I firmly believe that the vast majority of volume is – well either fraudulent or based on people falling into bare old traps.

[0:07:59.0] JM: This is the same stuff that people did with penny stocks in what was it? The 80s or the 70s?

[0:08:06.4] BS: Yeah. Well, the pump and dump parts of it are the penny stock stuff, yeah. People just buy off a little coin that has little value, maybe even make their own because it's really trivial to make your own token these days and put it on coin market cap or similar sites. Then just do what you want with it.

There is an instance where one coin shot up I think into the top 10 on coin market cap for 10 minutes or so, just because someone put an order on one of the exchanges for I think it was like $60 and the coin was priced at $1. Since the coin market cap aggregates this information from all the exchanges, it saw this price hike on one of them and the entire average shot up so much that it simulated a gain of several billion dollars of value. Yeah, the whole market is very easy to manipulate when you know what you're doing.

[0:08:59.7] JM: The people who are starting these ICOs, who are spinning up these coins are they mostly people who are aware that they are basically taking part in a scam, or are these people morally confused? Are they technologically confused? Are they actually trying to start companies? What are the compositions of the people who are starting these ICOs, then there is of course – there is the other things that have been pump and dumped, like arguably Ripple has been taken over.

Ripple looks like it was taken over by the pump and dump world and hawked, although maybe I shouldn't be speaking like that, because I don't know for sure if that's the case. Are any of these ICOs – or like, how many of them are legitimate? Or people who are really thinking like, "Oh, I am going to be working on this project in five or 10 years."

[0:09:52.2] BS: Yeah, there are. I'd say it on 50% of them do have good intentions. Maybe 90% of those 50% are delusional. Most of them think like I'm bringing something, something to this market that no one ever has and so on. The reality is not every project would benefit from a blockchain. In fact, most would be actively harmed by a blockchain in terms of technology.

People are just shoving the word blockchain into everything in an attempt to just hype it up. Plus, there is the appeal of just getting a lot of money quickly without any KYC, or any accredit and investor checking and SCC crackdown and the global reach. It's all very appealing.

At Bitfalls, we also develop smart contracts, we also develop ICOs. We have one running right now. The team behind it – I mean, we're just the blockchain end, the blockchain part of things, which to be frank is very, very removed from the actual core of the thing that's being developed most of the time. It's something that you can tech on. It's like when you have a website, you can change its design without changing the underlying logic and that's what blockchain is it's disconnected from the core of things in most cases.

There are many teams that actually do believe that they'll make a successful product out of it. Unfortunately, even those are highly susceptible to – we can call them a tax from outside, when pump and dumpers just see them as excellent material on which to turn a profit. Once this is done to a coin, it will either die in a fire, or it will get a permanent little price boost. But then it will

often freeze the progress of the project. For one reason or another, maybe the owners will get greedy. Maybe they'll get scared of what's happening. Who knows.
Yeah, I've seen a lot of things happen to a lot of projects and there is a healthy mixture of both hopefuls and hopeless. Those that are just making it to do a scam.

[0:12:02.1] JM: Yeah, I've interviewed four or five people who have done ICOs, and the projects range from things where it really makes sense to have a token. If you are starting an arcade, you need – an arcade typically has tokens where you walk into the arcade and you spend the tokens to play video games within the arcade. That is a context where a token would make sense.

There are other things like – maybe you're spending up a hotel search website. You decide you want to do an ICO, because you want to issue a currency for people who just are going to spend money on hotels and then they can accumulate tokens over time, so that they can spend their tokens on booking hotels instead of spending money.

Then it's like, yeah I guess you could argue that it makes sense to have a token for just purchasing hotels, but you could just also have gift certificates to arguably not something that you really need this notion of decentralization and consensus mechanisms in order to keep a close tab on the economy. Do you really need a consensus mechanism over the economy of hotel reward points?

I mean, maybe, but arguably not, right? Would you say that's accurate? For so many of these products, it's like this is not an economy where you need a decentralized consensus mechanism over the token.

[0:13:38.9] BS: That is absolutely correct. Yeah. If the example that you just mentioned like the arcade, yes it does make from a really far away standpoint sense, because arcades always had tokens. You have Chuck E. Cheese where you collect tokens, you have arcades with games where instead of quarters, you can put in tokens.

This does not need decentralization. A blockchain is a horrible database. It is however free, almost free infrastructure. Yes, making a token on it will allow you to deploy a new coin that only you own in a matter of minutes. Anybody can spin up a new token.

However, it is a database which is very expensive to use long-term. It does not make sense for an arcade, especially one that is not global and that does not need to consolidate its token expenses and whatnot across an entire franchise globally. That makes sense for its patrons to be using any kind of token, because any database will be much, much better at doing that.

When projects do that, they're not exactly thinking in terms of yes, the technology needs this. They're clearly thinking in terms of yes, we can get a lot of money for this. Yes, we can get a lot of startup venture funding from this without giving away our company to who knows what kind of Andreessen Horowitz people. We can just stay in control of our company and people can give us their money and we don't have to explicitly guarantee anything to them, because this is not regulated. I do get the appeal of this, but does it need a token on a blockchain? No, definitely not.

[0:15:21.5] JM: The term pump and dump, which you wrote this really detailed article about and you talked about the pump and dumping ecosystem, pump and dump typically means you've got these set of concentric circles of where you have the inner circle of the people who are going to initiate a pump and dump.

These are people who start the pump and dump with some number of tokens, or perhaps they decided that they're going to do a orchestrated pump and dump and they buy a bunch of shitcoin, really low-quality cryptocurrency so they can buy thousands and thousands of units of it. Then they advertise that, "Oh, this coin is going to rise in value." After they have already purchase it, they do things like information hacking, like just spreading the word through telegram groups and discord groups, maybe through Reddit, maybe through Twitter bots.

Other people find out about it and they think they are on the inside and gradually the information makes it out into larger and larger concentric circles of people. At some point, the insiders have sold what they have pumped and on the outer most rim of these concentric circles, you have the bag holders who end up holding the bag. They end up holding the low-quality token and losing money on it, because they were buying on the uptick and then all they saw was just a sell off.

They saw their loss in value. The pump happened, the increase in value happened and the insiders made money. Then the dump happened and the “bag holders,” the retail investors who were not so intelligent ended up holding the currency and losing value on it. Did I get it right? Is that an accurate depiction of how pump and dump works?

[0:17:15.4] BS: It is of one type. One note, I wouldn’t necessarily call them not as intelligent, as much as maybe naïve because they collect their information from the wrong sources. Maybe a better word is lazy, because even if they invest maybe half an hour into something they plan to throw their money at, they would see what it’s about.

Unfortunately, most don’t because there is a lot of these crypto millionaires, let’s call them, who just do not know what to do with all these digital money. They will jump at every opportunity. That is why the scams –

[0:17:51.7] JM: This is like people who bought Ethereum when it was low and they just made a ton of money. They’ve got a bunch of money to play with.

[0:17:58.3] BS: Yeah, exactly, exactly. They go by what sounds good. That’s why stuff like Dustcoin and Onecoin and other Ponzi schemes do well, because they promise a lot of stuff. Ethereum promised a lot of stuff and it turned out to be legit, so who are going to say that this won’t?

In general, what you described was a slow pump and dump group, which is designed to rid people who themselves became back holders for one reason or another off their bags. What I was actually investigating in the article was one of the direct pump and dump groups where a group is formed with all the circles fully and completely before the pump begins, but it’s known that what’s being pumped is a shitcoin.

Nobody has any delusions that the coin is ever going to have any value. No one involved thinks that it’s ever going to be anything good. There is no marketing in terms of this coin is all simple as buy it. There is only, okay guys, we are now collectively all buying in order to create the illusion of a high-trading volume and to lure other people who are not part of us at all to buy it from us.

The directly group does have those layers. Yes, the owners actually most often buy the coin a few days earlier, so that the pre-pump as it's called is not visible in the graph, because when you look at a graph and there is a spike way before, or immediately before the pump begins then it's obvious that the owners of the group were trying to scam their own people.

If they buy it a week or two earlier, people don't see that spike on the graph and it's all right. What they do is they get as many people in the group as possible. Those groups are advertised in Facebook and on Twitter and everywhere else. When they reach a critical mass, that's when the pump and dumps begin.

Usually, it's actually the first one or two pumps are legit. Anybody joining in in the first or second one does actually make some money, because it's possible, because they do a good job, they do not scam their own people, they don't pre-buy a coin. They actually show them that it's possible. This good word of mouth brings in more people. Once a group gets to several thousand members, then it's time to strike from the internal circles. That's when the biggest scams happen when the biggest sell off hits the outer most circles. That's the most direct pump and group that's very active today.

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[0:20:39.7] JM: I love podcasts, but even with podcasts I can't get enough audio delivered into my ears. That's why I use Audible. Audible is a leading provider of premium digital spoken audio information and entertainment on the internet. Audible content includes lots of audio books and other audio products. I mostly use it for audio books.

You can go to audible.com/sedaily and start a free 30-day trial. Your first audio book is free. That's the trial plan that I started on four years ago. Since then, I have read a ton of books. I read a lot of business books like *The Hard Thing About Hard Things* and *The Everything Store.*

Right now I'm reading a book by Ryan Holiday called *Conspiracy*¸ which is about the court case between Gawker and Hulk Hogan.

Sometimes I read self-help books. You've got your classics like *7 Habits of Highly Effective People,* read that a few times. I read some history. I read about President Eisenhower in Ike's Bluff, which an interesting story about how to avoid nuclear catastrophe.

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[INTERVIEW CONTINUED]

[0:22:21.9] JM: Let's simplify it for people. Let's say you've just got two chatrooms. You've got one chatroom, where everybody is in it. You've got the inner circle people, you've got the outer rim, you've got the bag holders. Everybody is just sitting in this chatroom and they're all saying, "All right, there is this shitcoin, whatever it is. It's Tron or something. We're going to buy a bunch of it and then we're going to pump it and then we're all going to sell a bunch of it and everybody in the chatroom is going to make money."

Then there is a second chatroom where it is only the inner circle members, like the very savvy organizers. What's the ratio of people in the tight inner circle, the people who are actually orchestrating this? What's the ratio of that amount of people to the people who are in the larger chatroom? How big are the big chatrooms and how small are the inner circle groups?

[0:23:16.9] BS: It's one to a thousand easy. That's usually two to five, maybe 10 members who are in on it. They'll just load up on the coin beforehand. It depends on the market cap of the coin, but it's going to be in the range of maybe half a Bitcoin to a Bitcoin per person. The pumping happens towards the outer group, the other group which has several thousand members.

They won't tell them which coin is about until they've already loaded up and until everything's been decided in the inner group and so on. Once it happens, the outer group will just start buying the coin that the inner group decided on. They'll just tell them, "Okay, we just decided on this coin. Start buying now, now, now."

Everybody starts buying on that one exchange. It's important that it happens in one exchange, because only volume on one exchange will move the value, will move the price of the coin on that one exchange, which is what they're aiming for.

Then it's the pumping phase is when the outer circle is supposed to just buy a lot of the coin and spam the chatbox and their social media channels with urges to buy the coin, because it's exploding in price and it's going to be the next Bitcoin and everybody should get in on it.

That's when the outer circle is actually buying from the inner circle, which was pretty loaded with the coin. The inner circle gets rid of the coin and then one of two things can happen, the outer rim can lose money and because nobody else managed to buy from them and they actually bought it at a higher price and then the price dropped. Those people will leave the group and just basically will never be heard from again.

Or they can be successful. They actually sell their coin at a higher value to someone else, which is often the case when for example in the outer group there are some tech savvy users, who have set up scripts which can buy on a given exchange with a click of a button, with the press of a key actually, not the click of a button.

What they do when they see a coin published, which is being pumped, so when the inner group tells them it's this coin, they will just input the code of that coin into this script and hit enter. Their script will execute much faster than anyone else's who is actually waiting for the webpage to reload, to open the graph, to click buy and so on.

It's actually the outer rim competing amongst themselves as well. Those that make money on that will spread the good word, bring in more members and so son and so forth, until the group has had enough and lost all trust and needs to disband, which happened with a very popular and young, but also very successful – briefly successful group, the Stratton Cryptmont group which had its own dedicated website setup and someday you put its system for pumping and dumping. I was following them before I went to Asia this month in February. I came back and they're already gone. That was one of the more faster resolved ones.

[0:26:17.1] JM: Did you talk to anybody in these groups?

[0:26:19.3] BS: Yeah, I did. I talked to some of the supposed organizers. I'm not 100% sure that they were on the inner-most circle. I'm pretty sure they were much higher up than the outer rim that I was in.

[0:26:32.7] JM: What did they tell you about themselves?

[0:26:34.5] BS: Nothing. Essentially nothing. They value anonymity far too much, because for them, all that matters is just shutting down a telegram or discord account, making a new one and starting over as soon as one group falls apart.

Very often, it's really high degree of overlap between the organizers between the various groups. You can see it by the way that they post messages, by their emoji patterns, by the GIFs that they post. I can be obviously who's back from the dead under a new name and organizing things again. It's all very interesting. The organizations, they're going to be investigating these, or going to have a field day, because there is actually quite a big trail left behind.

[0:27:21.0] JM: Really. Tell me about that. First of all, who is going to be policing this behavior? What are they doing that's illegal and what is the trail of information?

[0:27:30.2] BS: Well, pump and dump by definition is illegal in any financial market that is regulated. As soon as regulations come in about crypto and they are already taking down the ICO and all the – for example, the celebrity pumps, where one of the first ones to be cut down by the SSC and I think CFTC, so when Paris Hilton starting pushing Lithiumcoin when they paid her to tweet about that on Twitter to 16 million followers, you can pretty sure that some of those were left holding the bag.

You can also be pretty sure that the organizers of that pointless coin also went home with rather full wallets. When Floyd Mayweather was paid to advertise contract that crypto credit card that turned out to be nothing but the usual [inaudible 0:28:23.5], he was also told to take that endorsement down and both his Instagram post and Paris Hilton's tweet now no longer exist, because they came after them. They did actually have problems because of this.

It's only a matter for time before this gets serious. It was actually – I think it was CFTC that published a memo recently a week or two weeks ago, I think where they said that any arrests and any monetary fines that they can extract from pump and dump organizers, if you give them any information that leads to arrests and monetary damages, that you are eligible for 10% to 30% of the reward.

They manufactured a really nice snitch marketplace there, and you can be sure that the people who lost money and does pump and dump groups are going to be coming after those organizers. There's going to be a lot of evidence collected and it's only a matter of time before people started going to jail. I think that's part of the reason why that group that I was watching also went flying during February.

[0:29:24.1] JM: Do you have any sense for who these people are? Are they Chinese? Are they American? Are they Russian, or are they all of the above? Does it matter?

[0:29:31.3] BS: I don't think it matters, but I got the feeling that a lot of them were American, just by the spelling and attitudes. I can't be sure, but I'm fairly like – I would say I'm 70% sure the people behind the group that wrote about in the post were American, just based on the patterns that I recognized from managing authors and writing and stuff.

I could be wrong, but it sounded American. I haven't seen any – To be honest, it could be that there's more Russian or Chinese pump and dump groups than there is English-speaking ones. I just haven't joined any of those, because I didn't find them. Even if I did, I wouldn't know that I was in them if they were in another language, so I focus on the English-speaking ones, which I believe were American led.

[0:30:19.9] JM: Do you think that Ripple was pump and dump? We did a show about Ripple recently. Ripple is this – there is a company around this coin Ripple and it's a legit company, but their token is essentially defunct. Nobody's doing any development on it, but it is one of the tokens that rose the most in this recent cryptocurrency spike.

You could see it arguably, "Maybe it rose, because people were just confused, or because people just have long-term faith in the Ripple organization," or more than likely you have a coin that it's not clear if this would be categorized as a shitcoin or not. Therefore, it makes it the perfect candidate to be pumped and dumped. What do you think happened with Ripple?

[0:31:09.7] BS: I think it was that people were confused. Ripple is too big to be pumped effectively. It can be pumped by some super celebrities, but not as easily. It was more pumped by news and rumors and just naïve people seeing something very, very cheap that they figured could go to millions, without thinking about they're actually being hundreds of billions of coins in circulation. By default, it cannot go above a few dollars. Even a few dollars, even a dollar is absurdly too much and way over-valued.

Ripple on its own, I mean nobody –really nobody believes in Ripple the cryptocurrency, the token. No one. The people who say that they believe in its future are lying and are actually bag-holding. I can guarantee that much, because it really does not have a future. The protocol that they are building, the stuff that they're using with banks allegedly and so on, that might have a future, but the token itself is completely pointless.

It gained value because of those rumors about it being added on coinbase and now I think again, today or yesterday was another rumor, which again spiked its price. In general, it's not a typical pump and dump where a few people got together and said, "Let's buy a few billion dollars' worth of Ripple and drive its price up and then sell it for tens of billions of dollars." I don't think this happened. Could be if some power players did that, but I highly doubt it. People with that much liquidity play with bigger things that are more certain to yield some good gains.

[0:32:49.2] JM: What do you think about Tether? Tether is another one of these things where you have this arguably, maybe they're bag holders, but people who are in the religion of Tether. It's like they still believe in this thing despite the fact all evidence points to Tether being not comfortable backed one-to-one with $1 to 1 Tether, because otherwise why would Tether the company basically tell their auditors to leave them alone. Do you think Tether is another one of these very problematic circumstances in the crypto-community?

[0:33:28.0] BS: Yes, very much. I'm very outspoken about Tether. I've been on the receiving end of the BitFenix band hammer on Twitter several times.

[0:33:38.0] JM: You got banned?

[0:33:39.6] BS: I got blocked by them. Yeah. There is no doubt in any reasonable investigator's mind that Tether is entirely fraudulent and that they have printed unbacked Tethers since April of last year. There is no doubt that the crash of Tether, which is coming, there is no doubt about it, will cause a nuclear winter in cryptocurrencies the likes of which we haven't seen since 2013.

[0:34:09.0] JM: What makes you so sure about that?
[0:34:10.7] BS: Well, because once they do get investigated and they are playing with some pretty hot fire there, you do not get to call your token anything close to a dollar, even if it's a dollar Tether without invoking the wrath of the world police, which is America and SCC. They will be taken down with a formidable force. That's a guarantee.

If I'm not mistaken, the people behind it do live in the US. Some people are going to come knocking soon. Now I should say that they do wish that I'm wrong about this and that all of us who are looking into it are wrong about it, but I'm not in this to be able to say I told you so eventually, because if I get to say I told you so, then it's too late and we've ruined everything.

I really want to stop it before it happens. The only way to stop it before it happens is when people do realize what's going on here. The problem here is that Tether cancer has spread, even though it was a fantastically awesome idea at first. I mean, having redeemable crypto fiat tokens transferable to other exchanges so you could hedge your losses in a stable coin while the market is falling and not have to get licenses for fiat handling from the various institutions is absolutely fantastic and priceless and would help the crypto community a lot.

The fact that it doesn't stop when they lost their banking licenses means it's a ticking time bomb and it's not going to end well, unless people put a stop to it. There is just no doubt about it.

[0:35:53.3] JM: Why is the market so reliant on Tether? What makes Tether such a linchpin in powering the entire cryptocurrency market?

[0:36:06.0] BS: All the exchanges are using it, whether they started using it knowing it has no backing, whether they started using it when it still had backing, or whether they would just too eager to start using it and didn't do any research at all, they are now complicit.

Anyone who has their holdings in Tether in exchange which supports Tether, because they just saw their favorite crypto dropping and they put it in Tether to wait for the deadpan by the deadpan and so on. If the overseeing body that will take Tether down eventually and BitFenix rules the Tether is absolutely unbacked and useless.

Tether has the potential to lose all value overnight. This would basically – it would be as harmful to the crypto industry as the 2015 ban of Rupee notes in India was when they overnight banned 80% of the real paper currency in circulation without warning. This is what will happen here.

All the exchanges have their assets in Tether would essentially have those assets reduced to zero. People wouldn't be able to exchange it back to their crypto and a lot of people would lost a lot of money. It could be a crash much worse than empty box was, because it will take down many exchanges.

[SPONSOR MESSAGE]

[0:37:33.7] JM: Apps today are built on a wide range of back ends, from traditional databases like PostgreSQL to MongoDB and Elasticsearch, to file systems like S3. When it comes to analytics, the diversity and scale of these formats makes delivering data science and BI workloads very challenging. Building data pipelines seems like a never-ending job, as each new analytical tool requires designing from scratch.

There's a new open source project called Dremio that is designed to simplify analytics on all these sources. It's also designed to handle some of the hard work, like scaling performance of analytical jobs. Dremio is the team behind Apache Arrow, a new standard for end-memory columnar data analytics.

Arrow has been adapted across dozens of projects, like Pandas, to improve the performance of analytical workloads on CPUs and GPUs. It's free and open source. It's designed for everyone from your laptop, to clusters of over 1,000 nodes.

Check out Dremio today at dremio.com/sedaily. Dremio solved hard engineering problems to build their platform, and you can hear about how it works under the hood by checking out our interviews with Dremio's CTO Jacques Nadeau, as well as the CEO Tomer Shiran. At dremio.com/sedaily you can find all the necessary resources to get started with Dremio for free.

I'm really excited about Dremio. The shows we did about it were really technical and really interesting. If you like those episodes, or you like Dremio itself, be sure to tweet @dremiohq and let them know you heard about it from Software Engineering Daily.
Thanks again to Dremio and check it out at dremio.com/sedaily to learn more.

[INTERVIEW CONTINUED]

[0:39:35.2] JM: Let's unpack this a little bit, so we can at least pull out some education from this impending catastrophe. Tether is a instrument for liquidity in the market, because well, the one thing that I've heard and I'm not sure if you mentioned this is if you translate a holding of cryptocurrency.

Let's say you've got some neo and you want to turn that neo into USD, or you want to get out of neo. Let's say you were involved in neo when neo got pumped at some point and you want to get out of neo, but you want to get into USD, but you don't want to actually be into USD-USD, because if you pull out of neo into dollars, then you have to interact with a banking system, which means that you're going to get taxed for that transaction.

If you pull out of neo and you go into Tether, then it's not necessarily going to be associated with your identity. Is that accurate? Is Tether basically an instrument for tax evasion in that sense?

[0:40:39.8] BS: No, no. Not at all. Because the only way to get Tether is on a exchange that requires your identity. It requires you to verify your identity. In that way, you are more susceptible to taxation and tax evasion if you do this on the exchange than if you just cash out into another crypto and take it to a paper wallet.

[0:41:03.6] JM: Okay. Then the risk that we're talking about here is really just the idea of the bank run, where you've got all these exchanges and they are holding a bunch of tether and they're counting that Tether against their balance sheets and when the tether all drops to zero, or 13 cents or whatever, then these banks may not have enough essentially money in reserve to pay people who want to cash out, then there's going to be bank runs and essentially because the exchange is operate like banks in many cases. The bank runs will result in just people who are going to get soured on the market. That's the scenario that you're more concerned about?

[0:41:50.9] BS: In a way, because the exchanges do have Tether. They do not have to have a equal balance of dollars on their account. The fact that they have those Tethers is allegedly proof that they paid in USD to Tether the company. Tether the company is supposed to have that money in its accounts.

The Tether on an exchange is just a representation of the dollars that the exchange paid to Tether the company. Now if an exchange has a billion Tether in its accounts all spread out across all the various users or their own wallet or whatnot, and the SCC or some other overseeing body takes down Tether the company, then those deposits will become worthless.

Nobody will want to buy Tether, because it will essentially become worthless. It will not be – even though Tether the company claims that they do redeem Tethers for actual money, there is no absolutely no proof that this ever happened, that anybody ever did this. Their own terms of service say that they do not do this, that they have no obligation to do this and they make no promise to do this.

Even now they don't actually redeem the Tethers for money. The amount of Tethers in circulation all over the world has never ever decreased, which indicates that there is never any burning of these tokens going on, which indicates that there is never any cash outs happening. No one ever cashed out Tethers for money.

Now they do have various excuses for this, which don't make sense because they don't line up timewise, but essentially if everybody suddenly becomes absolutely certain that this is impossible, because Tether disappears, because they get closed down, then the Tether we know loses its value.

Right now, it's pegged to $1, because the exchange has hardcoded it. It's not on $1 because of demand, it's not organic. The exchanges have hardcoded a variation limit into the price of Tether, which can go up maybe 5%. More often it's 2.5% to 3%. That's why you'll never see Tether go above $1.5 and you'll never see it go below 95 cents, because it's hardcoded, no matter how many people buy or sell it.

Now if exchange has realized that they will never get their deposits back, you can be pretty sure that this one-to-one pegging will disappear from exchanges as well. Even if they continue to be allowed to operate, which they might not be because they are now complicit in this unbacked fake dollar crime. This is what essentially worries me. A lot of people who were just using Tethers as this amazing idea of hedging your losses without cashing out, without suffering the banking fees and delays, without having to give away a lot of your money to the banks when you're trying to just get out of a crypto. That those people will lose their money and this will hit the confidence of the entire crypto industry so hard that it's going to be very harmful for everyone.

[0:45:04.6] JM: Okay. Again, I guess I'm having trouble identifying exactly what the point of – how Tether leverages the community. How there is so much leverage due to Tether. I think the one point that you just made is that people can get out of their currency aggressively into Tether, which purports to be a stable coin, because it purports to be tied one-to-one to a dollar and there is not much proof of that.

Is your main argument that when the illusion of the stable coin is removed from the ecosystem, that is going to cause such friction in the way that the market operates. Is that what you're saying?

[0:45:50.8] BS: That too, but also no exchanges has Tether. Right now, we'll allow moving it in any direction if Tether the company gets clamped down. Because they will get ordered not to do business with Tether anymore. They will get ordered not to use these illegal tokens anymore and they will be in a lot of danger if they continue to do so. They will disable all withdrawals, all trades, all actions involving Tether. A lot of people who now have Tether holdings on these exchanges will lose their money effectively. They will just stay without it.

[0:46:29.1] JM: I see. You're just saying that there are tons of people throughout the internet who hold Tether on various exchanges. There is going to come a point in time, the Tether reckoning where all these people are going to get notified, "Hey, you have Tether but unfortunately we can't do anything with that." The people who have these holdings of Tether are going to get soured, because they can't do anything with that Tether.

[0:46:56.9] BS: Yes, exactly. It's like when empty box was going down, there was this iconic photo of those two guys in front of their headquarters, like how liquid are you, or where is my money? That's essentially it.

If your account balance on the exchange of site says you have 500 Bitcoin, that's just a number in their database. It's not reading from the blockchain. It's not an actual wallet. It's just a number in the database that is occasionally synced up with the database if the exchange is liquid enough.

When you transfer a coin into another coin on an exchange, that transfer doesn't actually happen other than in their database. Then gets consolidated later, because their holdings remain the same. They just attribute them to different users.

If you have a number on an exchange and that number suddenly becomes untradeable for anything else, you have effectively lost that money. You basically have fundable coins that you cannot use or move. You are left without all of your hedging money that you used to get out of a dip. You now have nothing.

[0:48:03.4] JM: Okay. Let's zoom out a little bit. Are you personally excited about this technology? Do you think it's completely overhyped? Where do you think we are in the legitimate breakthroughs versus hype-cycle of cryptocurrencies?

[0:48:19.0] BS: I think we're in a good path. I think we are slightly overhyped and the market could use a bit more correcting, but as someone who develops smart contracts and decentralized apps and really enjoys it, I haven't enjoyed developing something since – this much since I started web development 10 years ago.

I think it's a very promising technology and I can't wait to try every new feature that comes out. That said, it does have a lot of problems that need ironing out and the political wars inside the crypto ecosystem are not helping at all. I hope things get resolved and we get a lot more peace very soon. I'm not exactly optimistic about that.

I think it's a raise to web 3.0 and whoever gets there first will be the true game changer. Right now, I think it's all very, very beta and very shoddy and very dangerous to play with. The amounts that get poured into ICOs just staggering. I mean, it's really scary. It's really scary and it's really dangerous and I hope that most glaring issues get ironed out fast, because the technology really does have a lot of potential. At this point, the vast majority of the tokens are dramatically over-valued.

[0:49:44.2] JM: I know you have this blog Bitfalls, which is writings about cryptocurrency scams, as well as just other various news in the space. You also have a business Coin Vendor. As you mentioned, you're a smart contract developer. Also you background is pretty interesting. I guess, you studied English, at some point you got into cryptocurrencies, you became a developer. I wish we had more time to go into your biography, but maybe you could talk a little bit about what you're working on.

[0:50:13.1] BS: Well, Bitfalls is actually a fully-fledged company. We have employees writing stuff for us and are growing and the articles are coming out soon. We'll be releasing courses. We are aiming to publish technical content and tutorials about Ethereum development. That includes the stuff that we built, which is right now we've built a few ICOs and custom tokens, but we are working on a lot of interesting decentralized apps that just use blockchain technology behind the scenes and that are transparent to the user.

Many of those are just experiments that don't actually, like we said before, desperately need the blockchain. They are interesting experiments nonetheless. I am very excited about the prospect of for example decentralized web applications stored on the blockchain, because Ethereum as you might know is three-part project.

There is Ethereum itself, which is the world computer, which executes this virtual code that you write in smart contracts. There is this one protocol which is used for decentralized storage files, so that you don't store information on the blockchain, because it's a horrible database. It's very slow and very expensive. The sworn protocol ties directly into Ethereum, so you can host stuff on it.

Then there is the whisper protocol, which is used for just chatting, sending messages along the blockchain without actual permanent resistance, so that you can send messages like events and notifications and temporary offers for example, an order on an order book that you just want to stay alive for a day and not forever on the blockchain.

That you don't have to pay transaction fees for these trivial exchanges off. These three make the world computer that we all run and we all store each other's files on each other's computer, which combine together with Ethereum nodes and with the e-node system that governs a node discovery.

Like when you fire up an Ethereum node on the network, it's going to find the nearby node on the network if you give it the address. Every node already connected to that node will become accessible to previous one. Once you connect two nodes together, it's like a virus. It spreads automatically to every node available, every node known and it's really, really hard to take down.

Once we have this on a global scale that's really scalable fast and works as intended, we will it through decentralized internet immune to DNS, immune to IP addresses and immune to sensorship from ISPs, from governments and so on. That's what really excites me. I want to be part of this decentralized web where we don't have to – where freedom of speech is also electronic and not just personal.

[0:53:06.1] JM: It's going to change everything. I've done some shows recently about getting off of the centralization of Ethereum, where right now you've got the centralization of the miners and proof of stake is quite a brilliant effort at getting away from the centralization of the miners. Whether or not it will work, it makes me optimistic that we're going to figure out something that gets us away from the hardware centralization, because today you could arguably say, "Well, Ethereum is still centralized with the concentration of mining power, or I believe that there's still a concentration of mining power for Ethereum."

Also, I read an abstract recently about, what is it called? I think plasma, which is the sharding of the smart contracts, which is like you look at the model for deploying smart contracts today and it's like, "Okay, you have to replicate everything from every single smart contract onto every single full node." From a high-level view it looks like this is the most inefficient thing ever.

Then you look at the proposals to sharded and you start to see, actually there is very creative ways of making this more efficient without sacrificing decentralization. It just makes me optimistic. I feel like I've seen this before with for example, the early days of MapReduce. You see the first efforts to implement MapReduce with Hadoop in like the very early 2000s. It was like while this is really slow and it's really hard to process big data and then you fast forward to today and it's like we've had so many advances that you can just have streaming, fast updating, large scale MapReduces over terabytes. We've seen this before. We know how to solve these problems and it seems like this stuff is just going to become usable.

Then we have what we can do today, which is basically like CryptoKitties, or launching ICOs. It's unfortunate, that's all we can do, but at the same time we can look historically and recognize where we are. If we're patient and we're prudent and we're doing things like what you're doing with Bitfalls, where you're just like, "Let's invest in building some educational resources. Let's look at what toy applications we can build that are going to explore the immutable truths of cryptocurrency development, or smart contract development and we'll go from there and we'll learn to grow as the community grows."

Yeah, I think it sounds like you're planting a flag in a place that's only going to grow. I think the education space sounds like a great place to plant that flag today.

[0:55:47.5] BS: Yeah, I hope so. Yeah, thanks. Like you mentioned, the CryptoKitty stuff, it is a bit silly. It is a silly game and we had – I looked into 15 alternatives to CryptoKitties the other day and there is a post in Bitfalls about it and it's really ridiculous what people have come up with. In a way, CryptoKitties was the best stress test the Ethereum network could've hoped for.

[0:56:09.3] JM: Yes, exactly.

[0:56:11.0] BS: It was the beneficial – It wasn't an attack. It was a beneficial app, a toy that at the same time tested the network, showed us the problems and brought the crypto space closer to civilians with a cute game that they could relate to. It is the best thing that happened to Ethereum in a long time and I hope many more CryptoKitties crash our systems so we can learn from it.

[0:56:33.4] JM: Okay, Bruno. Well, it's been great talking to you. I appreciate you making the time and if you got anything else in the future that you think is interesting, I feel like we explored the negative pessimistic side of things today, but it sounds like you are somebody who is equally recognizing of the optimistic side of this space. I hope we can talk about something a little bit more optimistic in the future.

[0:56:57.6] BS: All right. You got it. Thank you for having me.

[0:56:59.2] JM: Okay, Bruno. Great talking to you.

[END OF INTERVIEW]

[0:57:03.4] JM: GoCD is an open source continuous delivery server built by ThoughtWorks. GoCD provides continuous delivery out of the box with its built-in pipelines, advanced traceability and value-stream visualization.

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