
Episode 120: Sam Radocchia Talks Non-Finance Blockchain Use Cases

Kelley: Welcome to Crypto Token Talk, a crypto 101 podcast exploring how blockchain technology applications like bitcoin, ethereum, and other crypto assets could change the world. Learn from blockchain experts, thought leaders and founders of some of the most innovative companies and world changing ideas of our time. I'm your host Kelley Weaver, CEO of Melrose PR, a leading blockchain communications agency. Thanks for joining us today.

Kelley: Today I have the pleasure of speaking to Sam Radocchia who was profiled last year as Forbes 30 Under 30, she's the co-founder at Chronicled. Welcome, Sam.

Sam Radocchia: Hey, Kelley, thanks for having me.

Kelley Weaver: Yeah, so great to have you on the show. It was really fun, you and I got to meet at the recent Women in Blockchain summit in Brooklyn, New York where the Collective Future was sort of founded. And I really enjoyed getting to know you and I'm excited to have you as a guest and introduce what you're doing to everyone.

Sam Radocchia: Yeah, absolutely.

Kelley Weaver: So, how did you ... I guess, first of all, tell us who you are and what you do.

Sam Radocchia: Yeah, so I guess my name is Sam, I'm one of the co-founders of a San Francisco based supply chain company called Chronicled. We started in 2014 very early on with the mission of linking real world objects, devices, and sensors, so physical assets to a blockchain. My background before that has been kind of a mix of academia and entrepreneurship. So I started my first company while I was still an undergraduate and it was focused more on the apparel and textile space. It started as a clothing recommendation engine using similar to the Netflix algorithm but for clothes and then we pivoted it into the b to b space providing inventory management software and integrations between ERP systems. So at

CRYPTO TOKEN

TALK

the time, we didn't have blockchain, certainly not blockchain for supply chain, and that's what I was doing for a couple of years and ended up ...

Sam Radocchia: Separately I had done Independent research in my undergraduate as well as master's degree doing anthropology research in a virtual world called Second Life. And my master's thesis, I went through this notion, this crazy notion of virtual currencies in gaming worlds. So like Second Life or World of Warcraft and things like that. And so it was right before, I think, Satoshi's White Paper and this concept of cryptocurrency came out that I was looking into it and it's always been sort of a thread in terms of my interests and research in the interface of technology and society. And then kind of my business and entrepreneurship journey took me on a similar journey of wanting to solve some of these problems of interoperability with existing systems and extending the trust gap between traditional cloud databases. So, I founded a second company where I got kind of heavier into the systems integration and metadata aggregation and then found my way more into the crypto and blockchain world and then ultimately to Chronicled.

Kelley Weaver: Wow. That's so fascinating about the Second Life. I've recently heard one of the founders on a podcast talk about their Linden Dollar, isn't that their currency? Fascinating because they've been able to sort of sustain a stable coin within their virtual world for many years. And it has a multi-billion dollar market cap. Anyway, I thought that was really interesting.

Sam Radocchia: Yeah. Still I look at my thesis and where I was like there is this thing called a Linden Dollar in there, even independent exchanges to fiat currency, and while I was living in this world for six months, I produced digital assets like clothing for people to purchase ... world. And I did this from an anthropological, like ethnographic, research kind of perspective and I thought it was so cool.

Kelley Weaver: How did you first discover that? Were you into gaming before?

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TALK

Sam Radocchia: I grew up sort of being a gamer, I was a self-taught engineer and like build websites with my brothers. We'd take apart computers and stuff like that. So loosely in the gaming world, not hardcore. Probably more so than the average person. So, when I was studying during my undergraduate degree, I studied linguistics and symbolic systems as well and double majored in anthropology and I was like, "We're studying all of these past worlds or physical worlds but there are these digital communities forming all around us and I'd really like to study it." And the department was like, "What? No." You know, "... some remote island and study this group of people." And I was like, "Well, this is sort of like the same thing." So eventually I convinced them to allow me to study it in a more traditional discipline. And that's ultimately how I discovered Second Life.

Kelley Weaver: That's amazing. And then what was your sort of aha moment when you I guess first heard about blockchain and realized that there were applications as it related to the other work that you were doing?

Sam Radocchia: Yeah, so it didn't, again, come together until 2014 when I had seen the evolution on the side of dark web sort of things and cryptocurrencies and what was going on there. I hadn't really thought about other applications for the underlying technology and ultimately met my co-founders and talked about using a blockchain for everything but cryptocurrency. So at the time it was like I don't know, I wouldn't say a ridiculous concept but certainly very early on to be thinking about those things. And we had a very simple premise which was to register a nonfinancial asset on a blockchain, so the analogy we used at the time was let's imagine the decentralized DMV where every vehicle or VIN number is registered on a blockchain.

Sam Radocchia: You could facilitate the transfer of ownership without going to the DMV. So I think the idea of having ownership tied to you directly and being able to transfer ownership without a third party of a physical good, so whether that be a land

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TALK

title or deed of title for land or a car or your home or smaller objects, so your luxury goods. We were doing a lot of work early on on eBay and creating that blockchain link so that when people posted a product on eBay they could prove that it was authentic. And not only did that increase the value of what you could sell online but I think it's starting to have that history or.... of ownership of various objects over time became interesting to me.

Kelley Weaver: So walk us through how that works, if you have a diamond ring, for example, at what points does that information get inputted into the system?

Sam Radocchia: Yeah.

Kelley Weaver: And how?

Sam Radocchia: So, I'll take you through, I guess an example, we're doing a lot of work in the gold industry and it's not necessarily a consumer use case. So some of our earlier use cases were luxury goods or art or sneakers, collectible sneakers, and things like that and, really, the registration or the identity, like linking the identity of the physical object and the blockchain needs to occur at the source. So very, very upstream, either at the point that, say, the object is manufactured or even farther upstream where the source material is coming from. And there's not much transparency in those parts of supply chains. So you talk to a big brand about who their suppliers are, depending on what the product is they could have anywhere from 50 to 1,000 different suppliers and sub-suppliers. And there's definitely not much transparency in the supply chain.

Sam Radocchia: So, gold example, at Chronicled, we're working with a company called Emergent Technologies, so they are one of the largest, if not the largest, gold networks in the world. And they have a company under them called Responsible Gold and the goal for that is to be able to track and trace responsibly or ethically sourced gold from mine to vault. What we've done there, so they already have the

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TALK

network, we just onboarded the network onto our blockchain supply chain network, all of the mine or suppliers is the gold is taken out of the ground, it's put into a sealed case, we have a specific cryptographic IOT device that's called a crypto seal that seals that barrel and that is registered on blockchain so that's the creation of the identity. And then the-

Kelley Weaver: Do you guys physically do that at the source?

Sam Radocchia: Yeah, so the others do that ... I mean, right now there's still, as we all know, the challenges of garbage in garbage out with blockchain so there's still elements of human elements where that initial event of creating the identity needs to occur. I think over time we'll move to more the centralized methods of doing that, as well, so either having multiple people or entities attest to the existence of some object or even machines that have produced something on the manufacturing line and then once something is produced, like the machine is actually recording that creation event. So, with the gold, the creation events of the asset and then any supply chain transaction that occurs, so logistics company picks it up and brings it to the refinery, so there are all of these events are registered ultimately until it is refined and then put into a dore bar and stored in a vault. So at the end of that supply chain, there is a one-to-one link between the bar of gold that's sitting in the vault and then what they've done is actually create a token called the G-coin on top of that system.

Sam Radocchia: So, over the past year we've seen the kind of the prevalence or in the market of tokenize almost anything or the desire to tokenize everything, we're really at Chronicled focused on the physical digital link. So the notion of an asset backed token that this company has built on top of our system basically means that there is a gold standard for it. There's actually a piece of gold representing the value in that coin. So you could imagine that you want to represent your car on a blockchain and have fractional ownership and not with the lenders or other people or a piece of real estate or a \$20 million piece of Damien Hirst fine art.

CRYPTO TOKEN

TALK

So, you can imagine these new economies built on top of tokenized assets that are opened up because of the physical digital link.

Kelley Weaver: And in terms of the physical digital link, like how is that being ... Is there a barcode or ... ? So, ... attached?

Sam Radocchia: Many solutions. So when we started, it was around early 2015 where we were exploring a range of identifiers, anything from DNA or nano tagging or things like that and the reality is there are numerous ways you can identify something, all with different pros and cons or costs to validate. So, we focused early on on using a PKI microchip, it's the same microchip in your credit card or passport. And it doesn't actually store any data on it, it runs an algorithm that sends basically an algorithm or challenge to the public key that's stores on a blockchain and the private key is stored in the chip. So, we started in the IOT space and expanded into many different kinds of devices and sensors and supporting those. Although, now as we've evolved, our system was always compatible to be able to work with serial numbers or barcodes or QR codes according to GS1 standards, we just went for the perfectly engineered solution first. So what is like the strongest cryptographic link between the real world and a blockchain. And then it was easy to support every other identifier depending on what the customer wants or how the customer wants to represent something on the blockchain.

Kelley Weaver: Interesting. It's fascinating how you guys are doing all of this. What are you most excited about in terms of use cases and upcoming assets and things?

Sam Radocchia: I think I'm most excited of the possibilities of the ecosystems and business models that will open up on top of solutions and networks such as our own. So, if we're all as a larger industry in the community in the blockchain world still kind of building the infrastructure right now, and again, last year it was encouraging to see all of these projects propose really exciting consumer facing ideas and use cases in the form of tokens. And I think we're now realizing or

CRYPTO TOKEN

TALK

agreeing that a lot of infrastructure needs to be in place before a lot of these proposals could be possible. But one, I'm really excited that people know what it is or we're kind of past the initial education phase but on top of that, now that we're starting to see some of this infrastructure take hold and get to the point where for us, for example, we have a large percentage of the pharmaceutical industry ready to launch a production system and network blockchain and same thing in the gold and commodities space. Then we can see all these fun boundary pushing or innovative business cases or tokenization of assets or fractional ownership or just automation in general that could occur.

Sam Radocchia: So, the example I like to give, I like to think of a blockchain as more of like an operating system that works in tandem with other existing technologies. So if we look at the way the IOT industry works, let's imagine we have a bunch of smart trash cans in a city and they're all measure ... it's not a very-

Kelley Weaver: Well, it's true, actually. There are some, aren't there?

Sam Radocchia: Yeah. I just heard today Toronto's doing this. But, the companies that are rolling these out, there might be three or four or five or 10 companies that are doing this and all of that data is siloed in the respective company's database. So, with a blockchain, if all of that data's flowing into a blockchain, then it's interoperable, it's accessible. Systems on top of that can be built like using AI or machine learning algorithms to then have a smart trash collection route. So things like this, they might be possible with conventional databases with a really hodgepodge way of connecting them through APIs and connecting the point-to-point integrations. But, it really at the end of the day is not efficient and we're not seeing the full benefits or the bigness of big data. So, I'm pretty excited about what will happen then, I don't think we can even really imagine that because we've only started to get a taste of it with the internet as we know it.

Kelley Weaver: Totally. And the interoperability piece is interesting because blockchain do allow

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TALK

for that but is that going to be a challenge, like is that going to take a few years to overcome? Because what if one system is using one certain blockchain network and it may not speak to another at this stage, like is that going to take a few years to work through?

Sam Radocchia: Yeah, I'm not a fortune teller. ... support of the projects out there specifically focused on interoperability between chains or consensus algorithms. It'll be so necessary as we, at least in these transition years, before we get to a point where we might never have consensus on what is the best, we might have different consensus algorithms or blockchains or infrastructures based on use case or geographic location or things like that. So, I think designing the systems with interoperability in mind is very important or else we'll end up with just repeating the mistakes from the past and having blockchains being used or treated as databases or intranets and I think the potential is so much greater. But we do need to keep interoperability in mind.

Kelley Weaver: In terms of you referenced 2017 being sort of a great year because now people are familiar at least with what was Bitcoin is or blockchain, they've probably heard about it. But it's still early days, I think, and there's still a lot of education that people are seeking, what else do you think needs to happen before we see these things become more mainstream? Do you think it's just the behind the scenes like making the systems work or do you think that there's more sort of consumer education?

Sam Radocchia: I think all of the above. So, there was a lot of hype and misinformation over the past year and so now it's kind of going back to the drawing board and correcting some mistakes or reeducating people. I think, yes, just building out the underlying infrastructure and getting production, like nodes deployed and networks out there for other use cases beyond cryptocurrencies or token sales is a big one. And then I think from my consumer background or at least interest in consumer facing use cases, I think user experience is a big one. And we saw

CRYPTO TOKEN

TALK

that with CryptoKitties spinning out and the announcement of their fundraiser, I think just yesterday, that's encouraging, I think they were the first to really take a stab at designing for good user experience and it's by far from anything that we were accustomed to. It's still fairly complex and there are multiple steps that you need to take to just even buy one. So, I think we'll probably see a lot of interesting things as projects mature and identity solutions like uPort come together in combination with other solutions like MetaMask and then we have a more seamless use experience. That I'm really excited about and I think will lead to the next wave of adoption.

Kelley Weaver: I totally agree and I forget that sometimes but it's true, there's room for improvement with user interface of anything. Like even recently like Ledger, the ... just triggered me to update my software and it was being extra fussy recently. And there's room for improvement there. I feel like when you tell people about cryptocurrency, you kind of have to sit them down for like a 10 minute explainer about security and risks and best practices for storage and things like that. So there's definitely room for improvement. It's not super easy, like if you tell someone to go buy a CryptoKitty, as you said, or even to invest in an ICO, there's so many steps and it's a little bit mind boggling.

Sam Radocchia: Yeah. But in everyone, the community's defense, we're starting from the beginning here, it's like redesigning the internet but hopefully in a better way. So, on one hand we have the benefits of already having this existing system in place and we can share knowledge and stuff and we can learn from mistakes and do things differently. On the other hand, our expectations are that certain things will be a lot easier and move faster when we really do have to build the building blocks. So, a lot of times, yeah, I think the industry, we haven't necessarily reached the mass market or mainstream yet but it'll be exciting to see what happens when we get there and what will be kind of the killer use case for that.

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TALK

Kelley Weaver: Where do you get your news? Where did you find out about the CryptoKitties sale?

Sam Radocchia: Twitter. I spend probably too much time in the bubble that is crypto Twitter. Yeah, mostly that or I'll have Google alerts or CoinDesk or things like that.

Kelley Weaver: Yeah, Twitter is great because then you get like a highlight reel, but I sometimes try not to go there because I lose myself for like half an hour. And then what other, what's your experience been like in this industry in particular or I suppose during your entrepreneurial journey as a woman?

Sam Radocchia: Yeah. I would say it's definitely a polarizing topic to discuss and in some respects in my early experience in the crypto community and blockchain community, I've seen more women and more diversity and inclusion than I have in the larger tech industry, so that I super encouraging to me. In the larger tech industry, it definitely was a challenge for me being a female entrepreneur or even self-taught engineer, so I feel like counterparts would probably try to stump me more and it was definitely difficult. I think part of it was due to my age, I was young when I started my first company, but also being a woman, it was harder to raise funding at the time. And yeah, I'd say there have been challenges but at the same time there are so many ecosystems for support and as I've immersed myself more in those networks and focused more on diversity and inclusion even in the sharing of perspective in our companies at Chronicles and the larger Chronicled network and family, I found it to be a really encouraging and welcoming industry.

Kelley Weaver: You brought up one thing that I had a question about, when you first started Chronicled in 2014, what was the fundraising process like? Not so much necessarily as a woman but just at a time when blockchain was sort of not as discussed?

CRYPTO TOKEN

TALK

Sam Radocchia: Yeah, so we had a slightly different story and very supportive early investors. So one of our co-founders, his name is Dave and he's on our board, he was really the champion of it for the technology. And he comes from a private equity background and so he had been involved in the space from the financial services side and really just believed in the future of it and was instrumental in securing our early seed funding and helping people buy into that vision. So we had definitely support from people who knew the space and knew the potential of the space beyond the financial use cases. But, I'd say there were times it wasn't necessarily 2014, I think around that time it was easy, easier, never easy, but easier for the early companies and projects to raise funding because it was new, it was still kind of early in the hype cycle. I'd say 2015 and 2016 were a little harder, it felt like the cryptocurrency markets felt stagnant, I think the hype wore off, and we were all in just build, build, build mode, trying to find the most technologically feasible and monetizeable use cases for the technology. So we were focused always on generating revenue, which we did, and were able to do and so our fundraising story has been, we've been successful in it because we've taken the perspective and approach of really wanting to build a business on this technology.

Kelley Weaver: So your clients are like pharmaceutical companies and those like the gold-

Sam Radocchia: Yeah, so, our kind of biggest verticals where we've gone the deepest into are obviously the pharmaceutical industry, then commodities, so the precious metals like gold, silver, platinum, and minerals, cobalt and things like that. Oil to some extent. And then other industries like food, luxury goods, consumer electronics, anything really where there's supply chain track and trace or ... requirement. I was just having a conversation about, so the last northern white rhino, male white rhino, passed away and we were talking to some wildlife conservationists who, I guess, it's illegal to trade rhino horns or sell them from South Africa but there are some conservationists that are taking precautionary measures to remove the horn like

CRYPTO TOKEN

TALK

every two years so that poachers won't kill the rhinos. And ... on like 150 million, if not more, in these horns where there is demand for them in countries like Vietnam but yet because of local regulations, they can't sell them. So, I was just brainstorming, like, "Hey, if you could prove that these were ethically sourced with our system and trace that end-to-end, do you think the regulators would be interested in changing things? There's already a market for it but supporting the market for it and therefore kind of doing away with some of the illicit trade or poaching."

Sam Radocchia: So, really, when you look at supply chains, for us there are two main drivers, it's regulatory compliance. So for pharma there are regulations in place that say the pharmaceutical companies need to uniquely identify their drugs and by 2023 there needs to be an interoperable system in place to And we see lots of regulations like that in other industries like commodities or especially food or things like that. So, that's one of them and then the other one is just market pressures and demand for transparency. So on the consumer side, the consumer's wanting to know what's in their food or their personal care products or cosmetics, so the ethical sort of responsible production side is a huge driver, as well. So our customers, there are broad applications for the underlying supply chain network and protocols but the verticals that we've targeted first have been the pharmaceuticals and commodities space.

Kelley Weaver: Really interesting. Thank you so much for all of this information, how can people learn more about what you're up to or get in touch?

Sam Radocchia: Absolutely. Our website is chronicled.com and we have a very active blog at blog.chronicled.com. My personal blog and Twitter, I'm pretty active there, is [@iamsamsterdam](https://twitter.com/iamsamsterdam). And can email me at sam@chronicled.com.

Kelley Weaver: Fantastic. Well, thank you again for taking this time to chat and we'll be excited to sort of see how this evolves.

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Sam Radocchia: Absolutely. Thank you for having me, Kelley.

Kelley Weaver: Yeah. All right.

Kelley: That's all for today's episode of Crypto Token Talk. To learn more about blockchain and keep up to date with this fast-paced industry, subscribe at [CryptoTokenTalk.io](https://cryptotokentalk.io), where you can also find today's show notes. If you have suggestions for topics or guests that you'd like to hear from, please drop me a line on Twitter [@CryptoKelley](https://twitter.com/CryptoKelley). If you enjoyed the show, please rate and review it on iTunes and share it with family, friends, and colleagues who want to stay up-to-date on how blockchain technology is changing the world. Thanks for listening.

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