Jean Philippe Vergne

Blockchain: Decentralising organisations and solving the collective action problem

SUMMARY KEYWORDS

blockchain, bitcoin, decentralized, create, currency, users, governments, zipcar, sovereignty, people, organisations, world, car, instance, problem, piracy, decentralization, transactions, organisation, ecosystems

SPEAKERS

Vaughn Tan, Theme music, JP Vergne

Vaughn Tan 00:04
Hello and welcome to Mind Shift a podcast about innovation from UCL School of Management. I'm Vaughn Tan, an innovation strategy researcher focusing on how organisations can flourish and adapt to times of great uncertainty. In each episode, I'll speak to one of my colleagues within the diverse community here at the School of Management, and will look through the lens of their research to get insight into the rapidly shifting world of business today.

Vaughn Tan 00:27
In this episode, I'm joined by Dr. JP Vergne. JP is an Associate Professor of Strategy at UCL School of Management and his research examines the evolution of capitalist societies since the early 17th century, and how contentious industries such as piracy and the arms industry affect economies. JP's published his research in leading academic journals, popular media outlets, and he's also published two books, including the bilingual experimental graphic novel Deja Vu. JP's current research focuses on blockchain technologies, and that's what we're going to talk to him about today. So JP, before we get into blockchain, and really deep dive on that, can you tell us a little bit about your background, how you came to be the person that you are and your research interests, how you came to those?

JP Vergne 01:08
Sure, I've studied business, but also a lot of social sciences before becoming a professor. And I would say that my research interests have been shaped by particular events that that took place when I was living in Amsterdam, about 15 years ago. At the time, I was reading a couple of books about hackers and in one of those books they were, they were called the "pirates of cyberspace" and I was very intrigued by that terminology. And anyway, at the time living in Amsterdam, I passed by the Maritime Museum and that week, they had a show about the history of maritime piracy. And I was quite fascinated by that - they actually had a pirate ship that was parked just across the museum. And it was a really beautiful exhibition and while I was visiting it, I was wondering about this term "piracy" and why it is that we use the same word to talk about these seamen in the 17th century that were attacking trading companies, and also to refer to hackers in cyberspace today, and this common use of the term

piracy was actually a question that I asked myself at the time, and that really foreshadowed a lot of my future work about how social movements and especially stigmatised social movements play a significant role in the evolution of capitalist societies, play a very significant role in triggering new waves of innovation. And from then on, I actually got into the study of Bitcoin, which I think is a movement that is closely related to piracy.

Vaughn Tan 02:45
Excellent. Well, I think we're going to talk a lot more about blockchain more generally, and how that fits into the wider history of capitalism. But before we do that, for some of the people who may still not know, can you explain in really lay language, what a blockchain is?

JP Vergne 03:01
So blockchain is a digital database technology and what it does is that it enables the sharing, and the recording of transactions in an environment that is open, secure, and decentralised. So it lives on the internet and it basically creates this record of transactions on top of a peer to peer network. So it allows people to exchange value over the internet.

Vaughn Tan 03:29
And when you say it's open, secure, and decentralized. In what ways is it different from traditional ways of thinking about databases that store information? And how do those differences give it the utility that did not exist before, right, which is what everyone is so excited about?

03:49
So I guess the important difference would be decentralization and decentralization is a bit of an ambiguous term. But what it means here is that no one in a blockchain network has privileged access to information, no one has a control over a master password, for instance. So the difference with traditional ways to exchange value over the internet is clear here. If for instance, you are using, let's say traditional banking to send value to a contact over the internet, there is a password that you need to use to log into your bank account and then maybe you can do a wire transfer. If you lose access to that password, you can basically get in touch with your bank and have them reset it. And the reason why you can do this is because the password is stored on their servers. So there are centralised points in the network, such as corporate servers that actually store information on behalf of everyone else. In a blockchain setting this does not exist - it is entirely peer to peer and everybody can access the entire history of transactions of the entire network since day one. And so that means that it's essentially creating a network that anybody can join without necessarily having to verify their real world identity and so it proves very resistant to any kind of censorship. It provides an infrastructure that anybody can build on. And that is actually quite different from the Internet as we know it.

Vaughn Tan 05:25
Cool. So it sounds like what you're saying is that where previously our models were thinking about where we store data have an idea of a central authority, and also a centralised idea of truth, right? Blockchain gives you the possibility of having decentralised authority and access. And also there is no longer a, in a sense, a central authority over truth in terms of what gets stored, is that an accurate way of putting it?

05:50
Yes, it is. The idea is to have incentives that create checks and balances on the network so that they are used types of users are allowed to use the network and at the same time, secure the network without creating islands of power that can be used by a central authority.

Vaughn Tan 06:10
Sounds very democratic. How do you think this affects sort of a lot of the areas of business that we think about as management researchers? What do you think the implications we're already seeing are? And also, what do you think the implications are that are coming down the pipe?

JP Vergne 06:26
I think a good analogy to understand what's at stake here is to think of other kinds of democratic ways of organising that we already had on the internet. So think about the open source software movement. Think about Linux, think about Wikipedia. We're familiar with those. They are fairly democratic ways of organising, because you can volunteer contributions to content on Wikipedia, you can volunteer code to contribute to the Linux software, and blockchain ecosystems such as Bitcoin or Etherium work in a very similar way, in the sense that they are open source software communities and anybody can contribute. The difference is that there is cryptocurrency that powers, that fuels these ecosystems and create incentives, economic incentives. So if you are contributing to Linux, or if you are contributing to Wikipedia, you are a volunteer contributor, meaning that you are not compensated for your work. If you are contributing to ecosystems that are relying on blockchain, you actually can get paid. And so a good way to think about blockchain ecosystems is to see them as an open source software community, plus economic incentives. And so for the first time, in the history of humankind, I would say we have a way to build organisations that can become very large, such as Bitcoin, in a decentralised fashion, where contributors are actually paid, but there is no CEO, there are no employees, and there are no managers. We've never had that before.

Vaughn Tan 08:07
Okay, that's really interesting. And I want to double click on that. Can you say why? It's important or significant, that you can now build these very large organisations that don't look like traditional organisations.

JP Vergne 08:21
It really changes the way we envision work, because in blockchain ecosystem, a lot of the work is being done without relying on the employment contract, a lot of the work is being done without having supervising managers, and a lot of the work is being done as part of nonprofit organisations that are still able to compensate their contributors. And so we have a new organisational forum available to us now that sits somewhere in between the traditional nonprofits, open source software community, and the for profit corporation. But we are allowed to have that function at scale globally, today without relying on the traditional tools of corporations, which are a managerial hierarchy and the employment contract. And so this is a spectacular development if you look back at the history of organisations and corporations, and in fact, I am confident that one day, the inventors of Bitcoin will receive the

Economics Prize that's granted in the memory of Nobel, I'm confident that one day this will happen because we will look back and realise how significant this invention will have been.

Theme music 09:36

Vaughn Tan 09:46
So let's turn now actually to talking about, sort of, the findings and implications of your research, but before we do that, give us a quick outline of the kind of academic work that you're doing, and also what kind of practical applied work you're doing.

JP Vergne 10:00
So my entry point into Bitcoin and blockchain technology that underlies it was the history of piracy. It's a very unusual entry point. But looking at the history of piracy, I noticed a pattern that I elaborated upon in a book that I published a few years ago called The Pirate Organisation: Lessons from the Fringes of Capitalism. And that pattern is the following: at various points in history, since the development of the modern nation state, you have this notion of sovereignty, that is imposed by nation states over particular domains. So if you look back at the 17th century, when international trade was developing over long distances, nation states claimed a sovereign power over portions of the oceans and the high seas. Pirates were merchants that contested sovereignty of nation states over the high seas and essentially, they were advocating for the high seas to become a public common good, which eventually it became, and it's now protected by the United Nations - we have something called the International Waters, it is a common good of humankind, and no nation state can claim sovereignty over over these high seas. Now, if you fast forward a couple of centuries, and you look at the early days of, I would say the computer industry and the early days of the internet, we had monopolies that were created by telecommunications companies, so in the United States you had AT&T, and then you had Microsoft, in the 70s and the 80s, hackers were those that were opposing the monopolies of Microsoft and AT&T. And these corporations were becoming quasi sovereign over the early Internet, and they were actually protected by the state at the time. The Pirates of cyberspace were opposing that. Now, what is left today of nation state sovereignty, what is the one domain where nation states still have full sovereignty on that has never been contested? There's only one left and that domain is money - money has remained the sole prerogative of nation states and they claim full sovereignty over money. There is in fact, in every nation state a monopoly on the particular currency that is the official national currency of each country. Now, these currencies can be more or less powerful at a global level, the US dollar has been the most important currency for a while now. But essentially, people who have developed Bitcoin and other cryptocurrencies are contesting the monopoly of nation states over the domain of money. And that was the last domain that was left with full sovereignty applied by nation states. And so from that perspective, the Bitcoin movement is a piratical movement and it is contesting sovereignty over money and it is a significant historical development that will possibly shape the contours of a new type of capitalism, just like piracy in the 17th century did.

Vaughn Tan 13:11
Okay. That's extremely interesting. That's super cool. I think one thing which your earlier comment highlighted for me was this idea that you've got a new organisational form that allows organisation of activity at enormous scale, without the traditional methods of organisation that we are familiar with,

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from, you know, the last 200 years of organisations, right? And one of the problems that we've always tried to solve with organisations is the collective action problem, when you've got a lot of people doing something together, that's difficult. And the way that we've historically solved it is by having organisations that have contracts, that have labour relations and things like that. How do you see blockchain as a technology, helping to solve the collective action problem? And what is the sort of the scope of the kinds of situations in which blockchain technologies can help solve the collective action problem? And where do you think it cannot actually do that?

JP Vergne 14:04
This is, I think, the crucial question and the crucial aspect to understand when we start talking about the potential of blockchain technology, when you start to remove managerial hierarchies from an organisation, and when you start to remove the employment contract, you basically lose leverage over contributors to the organisation. So if one day, somebody who's like an important contributor to the organisation decides to not work or quit, there is no leverage, they don't lose their income because there was no employment contract to begin with and they don't have to follow the orders of anybody because there is no managerial hierarchy. So the question becomes, how do you make people work together when you don't have that kind of leverage?

Vaughn Tan 14:51
So I want to, as they say, double click on that. Can you give us some concrete examples where you think blockchain technologies and cryptocurrency specifically might be most useful for right now?

JP Vergne 15:03
Think about the problem that Zipcar is trying to solve. Sometimes you need a vehicle for a short period of time just to run errands locally and there's lots of vehicles that are idle most of the time. So for instance, if you drove to the office this morning, maybe your car is sitting idle in the parking lot between 9am and 5pm and it's pretty useless. Maybe someone would like to use that car during the day while you're at work, before you need it again to go home. But you don't want to lend your car to a complete stranger, because you don't trust that person. So the way Zipcar solves this problem is by providing their own fleet of cars for people to use. Now, you could imagine a decentralised version of Zipcar that relies on users own cars, instead, and then you wouldn't need its own fleet of vehicles. So imagine I book a car with an app, it shows me where an idle car is in a neighborhood, and I book it and then if I get to that car, I can unlock it with the app and it starts automatically paying the owner of the car per minute used, or per kilometer traveled. Now, how can we create trust in a decentralised environment like this? Well with a decentralised database that keeps track of users reputation, and also automates the payments and insurance for every user. So you could imagine having an escrow account where you have to stake some of your money into the system before you can start using cars and borrowing cars from other users. And that basically would provide collateral, you'd have to prove, for instance, that you're insured in that decentralised database and it would be publicly as accessible to every user of the decentralised Zipcar and so anybody could verify this information, and no one would be able to cheat by modifying the data in a unilateral fashion. So now what happens if there's an incident? Maybe you scratch the car while you're using it? How do you resolve a dispute around an incident? Well, you could imagine that people would have to take a short video of the car before using it and after using it, and this video would be shared in the database. You could ask high reputation users of the app to

adjudicate the dispute, they would look at the photos and they would act as witnesses, look at this crash, and they would take a vote and they would determine a standard penalty for this crash. And because there is a cryptocurrency inside the system, that you have been staking as collateral, the owner of the car would get a payment for the damages. And the system could keep going like this. And you could imagine that the users that contribute to the system are rewarded with cryptocurrency that exists within that system. So for instance, if you act as a witness, you're basically providing work, you could be paid for that, if you are making your vehicles available. Even if people aren't using them, you could be paid a small amount for that. If you are developing code to add features to the app, you could be paid for that. And so the big difference here is that with a decentralised Zipcar, users don't pay fees that go to a for profit corporation that takes a commission on every transaction. But instead, all the value that is created is redistributed back to the users. And the more you contribute as a user, the more you get rewarded. And with a decentralised Zipcar, you basically would have an organisation that is decentralised, that is not for profit, and that could operate without managers or with very, very few managers. And that is the alternative that decentralization is providing.

Vaughn Tan 18:32
I think that's really cool. So in terms of the kinds of situations where you need collective action, where decentralization might make sense as a way of organising that collective action, do you see scope conditions? Like, are there particular kinds of collective action problem that are better solved by blockchain technologies and other kinds of collective action problem that are not as well solved by blockchain technology? Or do you think all collective action problems could be easily solvable in this way?

JP Vergne 19:00
I think that there are areas where blockchain technology is easier to implement than others. So an example is services or transactions that are 100% Digital, so let's call them digitally native, there is no tangible goods that are involved in the transaction. So it's the case with Bitcoin - Bitcoin is a digital currency, but it is not tied to particular tangible goods in the world. So everything that is relevant to Bitcoin transactions can be recorded and observed and exchanged in the digital environment. As soon as you move away from 100% digitally native transactions and you start to connect blockchain with tangible goods, things become much harder to implement at a practical level, because you cannot store a car in a blockchain, right? So if you need to be able to authenticate things about the car such as its state and how much gasoline there is left in it and things like that, you basically need to be able to create proofs that are tangible and then transform them into digital evidence in a way that's reliable. So that's much harder, we can get there and I gave examples of how we might be able to do that but it is much more difficult and that's why so far, the biggest, most significant blockchain applications have been digitally native applications that are not yet connected to tangible goods. So that's one first boundary or scope condition, as you said. I think a second one is applications that involve governments. And I guess, in this sense, the reason why Bitcoin is so successful is that it prevents the possibility for particular governments to behave opportunistically. So for instance, a government might decide to unilaterally debase its currency to gain an advantage over competitors in international trade, that creates a collective action problem, because it basically gives a particular players an advantage, but it will hurt other players. So for instance, if you have all your, you know, savings or your pension that is denominated in a particular currency, when it becomes debased, you're basically becoming

poorer in relative terms. And we see that when you when you remove this asymmetry, it becomes a lot easier to deal with currency. And I think the pandemic created a wonderful example of that, where suddenly, all the governments in the world essentially debase their currency at the same time by injecting a lot of liquidity into the economies that they were trying to boost. And because they all did it, at the same time, it did not create a relative disadvantage for any particular country. And a lot of people were struggling and are still struggling to understand why before the pandemic, we were told, oh, we can't increase the salaries of health workers, we can't pay for pensions, we can't do this, we can renovate the highways that are in a poor state, we don't have enough money for that, we have to be careful with our deficit and the national debt. And then during the pandemic, all these locks, all these constraints suddenly disappeared. And the reason why they disappeared is is that they disappeared for everybody at once. So when all the governments act together in the same way on their currency, it does not change the relative balance of power. The problem is what happens when one particular government does it, but not the others and that's where it becomes a problem. Bitcoin addresses this particular problem from the viewpoint of currency users. So you and I, and everyone else by creating essentially a universal alternative. So it doesn't matter what country you live in, it doesn't matter in which currency your pension is denominated in, you can always use Bitcoin, as leverage against your central bank, or the government you depend on because now you have the possibility to do so with a currency that is universal and exists on the internet independently of any government. And so it basically creates pressure for central banks over the world and for governments to behave more responsibly. And one direct consequence of this new balance of power is particularly visible in the developing world, the biggest impact of Bitcoin is not in wealthy Western countries, the biggest impact of Bitcoin is for people who live in countries that have unreliable governments or corrupt governments, central banks that are not reliable, currencies that are very volatile, and for people who live in these countries, Bitcoin is providing an alternative that essentially forces local central banks and governments to behave more responsibly with currency, it is creating new parameters for collective action problems around currency. And this is something that is new, we had gold before that could act as this counter power in the realm of currency. But goal is very impractical and you need to rely on trusted intermediaries to hold it for you to store it for you, and to transact it for you unless you hide it under your mattress or something like that. So Bitcoin makes gold a lot more convenient by creating essentially a form of digital gold that anybody can use.

Vaughn Tan 24:22
Very cool. There are obvious legal implications or policy implications to any kind of technology that threatens sovereignty, right? And one of the things that you've said - the big overarching frame, I suppose, of blockchain, at least in how you've described it, is that it is a mechanism for contesting sovereignty in various spaces. I'm curious what you think the legal and policy implications are that we're already seeing that we'll begin to see?

JP Vergne 24:49
So the legal implications are incredibly important, as you rightly point out and incredibly complicated. In a sense, when a traditional financial institution misbehaves, you can sue them. So there is this legal liability that creates incentives to behave properly and regulators can control that. When you are looking at decentralised organisations, such as the ones we're building with Blockchain that do not have CEOs, shareholders, or employees, you cannot do any of that stuff. So if there is a problem, let's say a giant,

speculative bubble that bursts and creates an economic crisis, which is something that could well happen, who do you sue? Who is responsible? It's very unclear. And that's the first big issue. Now, the second issue is an issue that involves regulatory exemptions. Some people argue, okay, if we are decentralised, should we be subject to the same regulations to begin with, as centralised corporations, and they say, look, digital platforms like Facebook or YouTube, they are traditional corporations that because their user base is somewhat decentralised, they are already benefiting from exemptions to regulation. So for instance, YouTube is immune to copyright infringement lawsuits. If a user posts content that potentially infringes on copyright. They have intermediary immunity in these kinds of contexts. So people who work in the blockchain space say, well, we should also have exemptions, because we're even more decentralised, than platforms like YouTube or Facebook and we should be able to leverage that to get special treatment. And so regulators all over the world are these days considering these claims, and they are trying to find ways to regulate or not platforms that are based on blockchain, and do not have CEOs and managers and employees and one way to address this question is to be able to go much deeper in the claim that a particular organisation is decentralised. Put simply, we need to be able to measure the extent of decentralisation if we are to regulate differently, a centralised corporation like Google that owns YouTube and a decentralised organisation like Etherium.

Vaughn Tan 27:08
I think one question here is, is it actually about decentralisation as an indicator of whether or not an entity or an organisation should be subject to regulation? Or is it actually more practically about standing, right? So persons natural and corporate have standing and therefore they have liability. But the problem is, if you have no personhood, which is what happens with these decentralised organisations where there is no natural or corporate person to have liability and to have standing, that's where you have a regulatory problem, right? So is that something that either jurisprudence needs to update itself so that it can attach standing and liability to non-natural persons or non-corporate persons or to corporate non-persons, because if it did do that, then a lot of your existing regulatory legal frameworks would then immediately apply, but in a way that would make sense.

JP Vergne 28:06
So there is in fact a discussion that's been taking place in the United States very recently about assigning legal personhood to particular entities within decentralised blockchain ecosystems to be able to create that leverage that you're talking about. So for instance, there were talks about whether particular players called "Network Validators" or "miners" in blockchain ecosystems should be regulated as if they were financial brokers. The analogy is a very shaky one and there are many differences between what they do and what a broker does. But this is something that some regulators around the world are considering it is an ongoing conversation, there hasn't been a regulatory template in the world that has been implemented and that serves as a point of reference right now. So I think there's a great opportunity actually, for regulators for governments to take the lead and really, with experts come up with a framework that could create the conditions for this new economy, to develop. And I think a country could truly create a comparative advantage for developing its own economy, if they were able to come up with a regulatory framework that creates the right checks and balances for these new organisations to develop but without it being the new Wild West, where any everything and anything is possible...
Theme music 29:30

Vaughn Tan 29:39
Before we wrap up, I have one final question: what do you think is the next innovation you see in blockchain mediated collective organisation?

JP Vergne 29:49
If there is one case, that becomes as successful as Bitcoin has been, that creates a decentralised ecosystem that involves tangible goods such as cars, and that starts to operate globally and starts to grow and starts to function successfully, it will create a point of reference, it will create a precedent that will fundamentally rethink the way we operate businesses. We don't yet have such a globally successful example of blockchain ecosystem that involves tangible goods and that is user friendly. And so whichever community manages to come up with that first potentially will change the business world for the you know, the next few decades. So I think this is the next big thing and I would say this is the holy grail of blockchain at this point.

Vaughn Tan 30:45
Cool. That was super interesting. Lots of interesting stuff.

JP Vergne 30:48
Yeah.

Vaughn Tan 30:50
You've been listening to Mind Shift, a podcast about innovation from UCL School Management.

Vaughn Tan 30:55
Today's guest was JP Vergne, and we'll put links to their research in the show notes.

Vaughn Tan 31:00
This episode was presented by myself, Vaughn Tan, edited by Cerys Bradley, and produced by UCL School of Management.

Vaughn Tan 31:08
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