EU Blockchain Observatory and Forum

An initiative of the European Commission

EU BLOCKCHAIN OBSERVATORY & FORUM

Workshop Report – Climate Action & Sustainability: Workshop on Blockchain Use Cases

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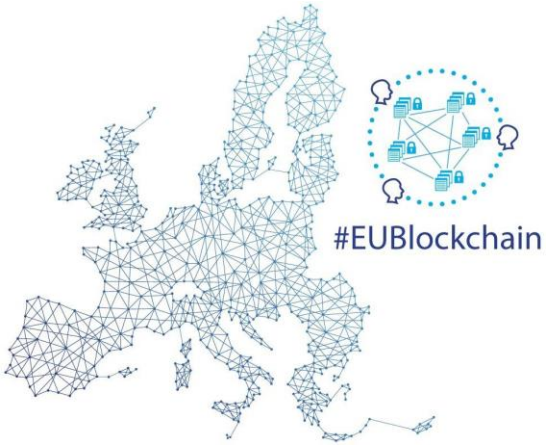

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WELCOME AND INTRODUCTION

Joerg Walden, INATBA:

INATBA is trying to identify what can be done and improved in technology in different groups. One of the groups is 'social impact and sustainability' working group. We try to identify projects and approaches that would help developing more social and SDG aligned ecosystem. One of the biggest parts what INABTA has done in the past was looking into over 300 different start-ups and companies to see how they are developing and if social impact of the blockchain stream is aligned with SDGs. This showed that there is a strong link between social impact and sustainability.

It is important to understand how technology could help us in changing people's direction, understanding and how they are working together. Co-cooperation, co-competition vs. business model of the sharing economy is one of the drivers and at the same time one of the biggest issues.

A lot of these drivers and impacts in different systems are being analysed to identify what helps driving the system forward into better understanding of the impact of the product and the comparison of industries, companies, and organisations. This is not an easy task as financing is a big challenge for all organisations. Most of these organisations stay small because the use cases are not driven. This workshop can help us to understand how to reach enough drive to create bigger impact for the people, planet and for the profit itself.

PRESENTATION "BLOCKCHAIN FOR CLIMATE ACTION AND SUSTAINABILITY"

Anna Bogdana Rusu, cLabs

Celo blockchain is an open proof of stake blockchain that has been carbon negative, however there is a lot more that can be done in that respect. Division both at cLabs, which is one of the main contributors to the celo blockchain and the celo foundation is that, in order to create the conditions of prosperity for everyone, we need a healthy environment, financial inclusion and connectivity through innovative technologies.

Many people ask question "Why Blockchain" in relation to climate action and sustainability. It is very difficult for the public to move past the headlines around the energy intensive usage. Articles in newspapers don't do the justice to the ability of blockchain to bring a lot of value.

Why Blockchain

Transparency is needed in i.e., the voluntary carbon market, how carbon market can equal green washing because it is difficult to track quality of the carbon credits or from where they are coming from.

Traceability brings trust to transactions and ability to know for sure that the entire journey of carbon credit is being followed.

Decentralised governance: a lot of companies, that are active in carbon and climate space, tend to stay small. When dealing with such large imperative issues like climate change, poverty of financials inclusions, the ability to coordinate across borders is very important. We have to look clearly how do we empower the communities, who are living where very important natural resources are located, to take care of those resources.

Capability for tokenization aligns the right incentives. We tend to talk about impact of economic activity and impact on climate in the language of externalities. The better we can align the right incentives for economic activity with the impact on climate by tokenizing natural resources, the better we move from externalities to being able to talk about money and value that is being backed by natural resources.

Transaction capabilities: blockchain is the easiest, fastest, and cheapest cross-border platform to perform transactions.

Blockchain use cases in climate action

One of the most valuable use cases around climate action for blockchain is **traceability of supply chains or value chains**. It is important to be able to look at the origin of goods, make sure that we are reducing the length of the supply chain as much as possible, rely on local communities and locally produced goods that are produced in a climate-friendly way. However, a lot of this does not always necessitate the blockchain. There are a lot of other ways to do it i.e., through centralised databases. Blockchain facilitates some of this, it brings a plus to the trust of traceability, but it is not the factor which decides whether it will succeed or fail.

We are also seeing growth of **carbon sequestration platforms** who are utilising blockchain to verify that a certain percent of carbon has been sequestrated through different types of new technologies. However, certification does not automatically require blockchain for it.

Gamification of endangered species preservation is a great way to educate and engage people, especially teenagers, but it does not need absolutely blockchain.

Voluntary Carbon Markets are currently considered to be one of the main ways in which both retails users and institutional ambassadors offset their activities. There is a public consultation on how to integrate blockchain and blockchain-based carbon offset in the registry. There had been very serious conversations around how transparent these markets are, but also how easy they are to access both as a retail user and as an investor. One of the things is a seller's market. There are not enough generation of good quality assets that people can buy, that are transparent and not green washing. With the ability to verify the quality of carbon credits the blockchain can make a substantial impact, even if it is to some extent just to bring more quality assets to market and bring back a lot of trust that has been lost in this area.

Peer to peer energy markets: energy, once generated, is very costly to store. There are segments of the market that are wasting energy at a certain price while other parts of the market could use it. That happens even at the household level. The ability to trade energy transparently and easily is one of the places where there is a lot of optimisation potential for blockchain to use.

There are number of use cases that are fundamental, that we could not have them brought forward without blockchain. One of the biggest threats to climate right now is the rapid decline in **biodiversity**. The ability of blockchain to **tokenise natural assets** (not only land or trees, but also species of fish, birds), to be able to protect them and drive funding into protecting them and aligning incentives is one of the most relevant ways that blockchain can make a difference.

Climate DAOs: there are a lot of people who are very interested in climate actions but are having difficulties in coordinating. However, with DAOs there has been noted an uptake in coordination cross-borders, to be able to drive action in a way that ends up on putting pressure on companies and governments to do their part.

ReFi: the ability to introduce in the financial system quality green assets and show that they are as valuable as other financial instruments.

What are the main challenges for blockchain to achieve its potential in the climate action space?

Interoperability: if assets are being issued on one chain and brought to another, it creates silos that are never a good basis for growth and sharing ideas.

How to build publicly a constructive narrative about how we are thinking about our **own energy efficiency and consumption**.

It is necessary to have very good **quality assets on chain** to be able to bring the level of institutional investment and buying that is needed to make a change.

Another challenge is to define what are the **technical building blocks** that we are right now missing, to enable the current carbon registries to take a step from 2.0 web into web 3.0 space and to easily build on chain.

Regulatory frameworks: As public sector and general industry association we need to understand what the needs for regulatory clarity are and how to talk to regulators both about the impact that digital assets can have in the space and what an enabling regulatory framework looks like.

Questions & Answers

Q: How Blockchain can help to bring transparency in e-waste sector?

Anna Bogdana Rusu: It depends on what e-waste means. There is work being done in recycling in normal waste sector. There are number of use cases around tokenisation and incentivising people to recycle. It is a question if blockchain is really needed for it. Rewards for recycling are one of the ways by which people have been incentivised to do for it for a long time. What blockchain can bring here is more traceability and visibility into the entire value chain. Once plastic is recycled, a person would receive a token and it would be possible to see what happened with that token – can it be used for people to offset carbon footprint? – but then on the other hand it can be tracked that recycling has happened. There would be a certification for that. For example, companies who declare recycling plastic can be verified thanks to certification. Blockchain can bring ease and trust of the end-user that this is actually happening.

Q: In terms of interoperability, which are the development platform adopted or validated at EU level that are giving to us the higher level of adoption?

Anna Bogdana Rusu: Most likely EU does not validate different blockchain platforms, it is not the job of EU to validate technology necessarily. I would investigate avium compatible platforms because that serve an adopted ecosystem and an adopted standard. There are several secure and continuously advancing bridges between avium chains. With every chain that's avium compatible you increase the capacity under each ecosystem. Another way of looking at it is going after chains that make a very deliberative effort in the carbon offsetting in the climate space, that are positioning themselves as hubs for this type of projects. Because when you have concentration of focus on one topic, there are more like-minded developers in projects that constitute building blocks for each other.

Q: How the current EU crypto regulations (such as MiCA) are trying to address climate concerns and how effective these measures would be?

Anna Bogdana Rusu: I think there has been in the process of adoption of MiCA a concerning push around banning proof of work which I don't think it's the most constructive way of approaching this. I think digital assets and tokenisation of carbon credits may or may not be something that MiCA touches, depending on whether they are catalogued as financial instruments.

In your opinion, what is an example of a project (or at least an area) in which it is nice to use blockchain, but it doesn't provide much improvement to the situation the project addresses?

Mohammed: My research is divided into two parts. First part is to study about implications of blockchain

technology for healthcare sector broadly, specifically I'm more concerned to look to operational issues with respect to patient's data empowerment. Second part is to study scalability issues in terms of blockchain consensus mechanisms. Blockchain has numerous features where we can use this technology unless we are more focused towards permission feature of blockchain. Entire focus of my project is to work for the privacy of features for blockchain technology as well as the use cases, patient data and how it is going to be shared with researchers, hospitals, and any EU membership country. Generally speaking, it seems it has no connection with climate change but if we look into SDGs, it is falling towards patients' data empowerment.

Bara Greplova: When it comes to differentiation of the importance of such use case, would you say that it's nice to have technology in this project, or can project function well without it? Does technology provide more significant impact?

Mohammed: There are pros and cons. When using technology, you must face consequences in terms of security and privacy issues. Without technology there are some limitations with respect to data generation, data management.

In your opinion, what is an example of a project (or at least an area) in which the use of blockchain significantly improves the project, especially in terms of cost and effectivity, but the project is still doable with the absence of blockchain?

Mohammed: In hospitals we are managing consent and using that patients' data with or without consent. Thanks to blockchain and its features patients can trust government in regard to their data usage.

In your opinion, what is an example of a project (or at least an area) in which you cannot achieve the same result without blockchain?

Joerg Walden: When we talk about carbonisation, there are carbon information exchange systems where you have multiple platforms and ecosystems, where you have to trust each other that the supply chain is doing the right things. Blockchain can be used to ensure trust to the system. If systems are trusting each other and data comes from trusted system, then you have community of trusties – then you can accept and agree between different parties that the data is in the same quality, even if it is coming from another chain. This is nearly impossible without blockchain.

Bara Greplova: Any project related to survival of species is something where we need to use technology that can actually accelerate these protective measures.

Kristina Lillieneke: Blockchain is not a necessity in my perspective. In some instances it can help, in some it can create more controlling function over people. It can be helpful for tracking carbon reduction, helping supply chain, sustainability projects.

Chaitnaya Sundaram (from the chat): I think any solution can be built without blockchain per se. The advantage that blockchain brings is the creation of a network. Once the network is created, different solutions (Dapps) could be built on top of this network. Different stakeholders might have different requirements, hence different solutions can be built tailored to these requirements. The cost of building these solutions will be significantly reduced once the network is already set up. The whole network can leverage the single source of truth solutions once the network is built which will ultimately increase the efficiency of the processes.

Anna Bogdana Rusu: I generally don't think it would achieve the same result without blockchain. I was introduced to the project with consortium of gold miners. The owner of a gold mine has decided that he would like to, instead of digging up and extracting the gold, use established tools for auditing and estimating the reserve of gold that is present in the mine and issue against that reserve gold backed tokens. There is a marker

already for tokens for gold that are traded on blockchain. This project does tokenisation of reserve, it integrates satellite data in AI that indicates that reserve hasn't been touched, it involves also local community to do physical audit of surrounding area. Part of the earnings of from transacting gold backed tokens are coming back to the community to pay for actual evaluation and makeup for potential jobs that have been lost in the community due to the fact that the mine hasn't opened up. How do you evaluate this token comparing to the price of physical gold? You discount it because in case you want to redeem it, it has to be dig up but at the same time the biggest costs for people who hold gold is the cost of physical custody of physical gold and audits that need to be paid on quarterly or monthly basis. There isn't yet a framework for pricing this exactly. Gold is something that we store. We might as well store it the natural way without disturbing the ecosystem.

In your experience, what are the areas of focus for organisations using blockchain to help the environment?

Kristina Lillieneke: I'm involved in project where we both work with renewal and regenerative farming. In terms of regenerative farming there it is more how you can track and trace carbon offsets. From my perspective, it's primarily different times of carbon credits or offsets that blockchain could be used for tracking and tracing. It's one of tools that could be used to create sustainable solutions.

In your opinion, what more can we do to educate the global population about how new technologies can fight climate action and enhance sustainability in general?

Kristina Lillieneke: I think that most of the people are aware and want to make good choices. But what choices they can make are determined by the business. I think it's a wrong way to say that we should educate citizens because they are aware about the nature but have limited power. The focus should be on how to make more sustainable products.

Anna Bogdana Rusu: It's easy to forget for people within environment bubble that not everyone shares the same perspective. I think it can be easy to overstate priorities of climate for different demographics and this is where it is important to find the ability to stop referring to climate protection as externality, as something that has to be done on top and to find the right way to introduce it in normal economic discourse. This is where ReFi is important.

Kristina Lillieneke: Now we are focusing mostly on how average people should change their lives in western world. But I don't hear anyone addressing big pollutants.

Is there an area in climate action and sustainability where decentralisation isn't a good option?

Anna Bogdana Rusu: There are so many certifications and standards settings in ESG space that it can be hard to understand what kind of standards are used. It impedes growth because those who are building projects can't necessarily scale due to lack of a clear standard-setting body. Also companies who are looking to invest, are not sure whether this complies with the level of requirements that their national or regional government have. I'm against one body that controls everything.

Other comments

Bara Greplova: Do you know any use cases where gamification is used?

Anna Bogdana Rusu: I am familiar with Wild chain who has mobile play where you can digitally adopt endangered species, you build your own ecosystem. The important part is that a lot of funds goes directly do some of the nature reserves that the wild chains are working with. The funds help in preservation the endangered species.

End of Webinar