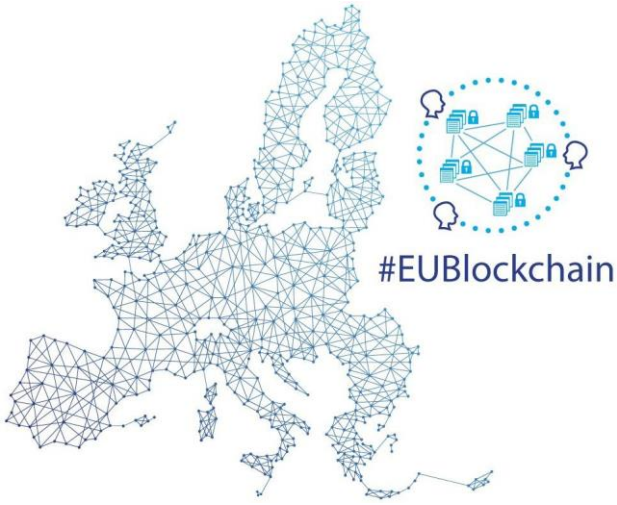
EU BLOCKCHAIN OBSERVATORY & FORUM

Workshop Report – Decentralised Network Governance – Online Video Conference, 09 June 2021



By the European Commission, Directorate-General of Communications Networks, Content & Technology.

Author: Iordanis Papoutsoglou

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Comments and inquiries may be addressed to the following email: info@eublockchainforum.eu

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WELCOME

Ioannis Vlachos, EU Blockchain Observatory and Forum, commenced the workshop with a brief explanation on the housekeeping rules that had to be followed during the workshop.

Peteris Zilgalvis, Head of Unit, Digital Innovation and Blockchain, DG CONNECT, Co-Chair, FinTech Task Force, EC welcomed everyone to the workshop on the Decentralised Network Governance. His introduction included some general remarks on the subject and a brief introduction to the following sections of the workshop.

A GENERAL OVERVIEW OF DECENTRALISED NETWORK GOVERNANCE

The workshop kicked off with **Mr Mario Laul** presentation that sets a general overview and familiarizes the audience with the decentralised network governance topics. The presentation began with the origin of the acronym DAO (Decentralized Autonomous Organisation) and its definition. DAOs are defined as a novel organization type that combines software-based automation wrapped around economic incentives via a token implementation. The tokens are trackable and secured on the blockchain. Ideally, DAOs do not possess a single point of control for the overall system.

The speaker brought up the fact that not all blockchain networks and communities regard themselves as DAOs. Furthermore, DAOs are not obligated to operate their own blockchain to operate their network.

Mr Laul referenced a techno-economic theory that was elaborated in the book “Technological revolutions and financial capital” by Carlota Perez. One key proposition of the theory was that two periods exist during a technological revolution. The two periods are the installation phase and the deployment phase. The installation phase introduces the core technologies and infrastructure for the revolution. Consequently, the deployment phase is the phase when the broader social and institutional transformation is fully realised by the new technology. Based on this theory, innovations related to blockchain are in the ongoing deployment phase. Specifically, DAOs are organizations that are native to the Internet form and possess some characteristics. These DAOs’ characteristics are that they are digital, global, decentralized, and automated.

Blockchain and other ICT technologies are bureaucratic technology by their nature. Their adoption adheres to the ongoing hyper-rationalization of modern society as described in sociologists’ works. The adoption of technology could aid in replacing the unnecessary intermediation and middlemen with the automation brought by machines. In this fashion, these machines were referred to as middle machines in the presentation.

Blockchain and the deployment of DAOs is a revision of the way the digital infrastructure and services are developed, deployed, governed, and consumed. The revision is concentrated around programmability, composability, access, resistance to censorship, and governance.

Governance was abstractly defined as any design feature or control mechanism to maintain a system. The definition broadness was deliberate to enclose terms that are not commonly associated with governance.

The presentation included the combination of blockchain network and DAO governance. In general, DAOs share similarities in governance with open-source projects. Moreover, some cases of DAOs possess corporate governance as traditional companies are part of the network. Finally, the use of tokens introduces novel forms of digital governance. For instance, tokens could carry economic incentives, tokenize votes, and resolve disputes with the deployment of forks.

Next in the presentation, the various stakeholders were presented. The most notable point was the distribution of power and resources. More specifically, most networks lean towards a technocratic

approach in the initial stages of the project. In the pursuit of a more inclusive decision-making process, the introduction of a token weighted voting system is possible. This introduction and its delegation mechanism can result in a plutocracy or a representative plutocracy. The democratic solutions are under research by the community, as they pose challenges within secure and decentralized identity verification.

Two broad categories of network governance were elaborated on during the presentation. The two categories are named on-chain governance and off-chain governance. Furthermore, examples of DAO governance mechanisms were presented to the public.

The presentation concluded with the recent trends and the challenges that DAO are faced with. Mr Laul commented that the challenges in DAOs' governance do not significantly differ from the traditional organizations. Some of the general challenges concern the balance in the interest of the consortium, the allocated power, and the structure to follow.

DECENTRALISED GOVERNANCE IN PUBLIC ORGANISATIONS

Ms Nena Dokuzov followed with a presentation about decentralized governance in the public sector. Her presentation started with the admittance that the participatory budgeting and cooperation between local governmental authorities was a conversation point and the absence of a technology to facilitate this process was apparent up to the emerge of blockchain. Blockchain is useful in these concepts with its characteristics as a technology.

Diving deeper in applying blockchain in governance, the democratic governance system was analysed in the broad level of governments and companies. A realization has been raised during this phase about traditional companies. These companies are very hierarchically organized and open innovation concepts are rarely adopted into that stable corporate governance structures. As a result, organizations that are open to innovations have assisted in cracking the business sector to decentralized governance.

It is vital to realize that the governance system within the technology itself is the integral component. As the adoption of blockchain is gaining up speed and social, economic, and governmental swifts are to come, it is high to think in broader terms about the technology integration into decision-making systems.

In the final part of the presentation, the fundamental principles and assumption relevant to the blockchain and decentralized governance were discussed. Centralized organizations are facing scalability issues as they are constructed in a centralized manner. The decentralization with the blockchain application can alleviate the single points of failure by dispersing the power concentration. Furthermore, the phrase 'Code is law' behind the distributed architecture can reduce inherent frictions and failures in the decision-making process by providing code neutrality, distributed consensus, and transactions auditability. In decentralized governance, the atomic interactions will be based on smart contracts that will replace human agents. The idea for a do-it-yourself model can use the blockchain as a mean to store legal and administrative documents. The terms of Futarchy and Franchulates have been presented as they can be consequences of the appliance of blockchain in achieving decentralized government.

PANEL DISCUSSION: GOVERNANCE OF DECENTRALIZED FINANCE

Moderated by: Dr. Agata Ferreira, member of EUBOF expert panel, *Ass. Professor in Warsaw University of Technology*

- **Kevin Werbach,** University of Pennsylvania, USA
- **Fabian Schär,** University of Basel, Switzerland
- **Siân Jones,** XReg Consulting, Gibraltar
- **Jacek Czarnecki,** Maker Foundation, Poland

Objectives of the session:

- Discuss the differences between traditional models and decentralized models.
- Assist the audience to shape an understanding of the decentralized governance models.
- Provide a future view on how the governance models could shape.

Main outtakes from the session:

- The panel moderator, Dr **Agata Ferreira**, curated the panel discussion on the DeFi (Decentralized Finance). Initially, the moderator introduced herself and the speakers to the audience. Furthermore, DeFi generally lacks a definition, but it can be abstractly presented as the idea for an alternative financial system built on the premise of decentralization provided by blockchain. In this emerging ecosystem, traditional financial products and services are delivered through entirely new financial architecture, principles, and philosophy. The progressive decentralization enabled by blockchain is a multi-dimensional and dynamic evolving phenomenon.
- Mr **Kevin Werbach**, part of the World Economic Forum, had the floor to present the latest report on a proposed DeFi toolkit for policymakers. The valuation in DeFi picked in May 2020 with a valuation of 80 billion dollars in digital assets locked in DeFi contracts to provide liquidity or collateral funds in the applications. Such valuation picked the interest of public authorities who had questions related to the operational way of DeFi applications and their open issues. In the report, four elements of DeFi were the basis for the DeFi definition. During the elements' presentation, oracles and smart contracts were referenced as the architectural components that support such applications. The programmability element can drive DeFi beyond the capabilities of traditional financial applications. Next, an overview of the report was presented to the audience. The risks are divided into five categories to support policymakers in understanding their scope and how they relate to each other. The report documents approaches rather than specific decisions to help policymakers regulate DeFi applications without limiting the innovation. Finally, the set of tools in the report can assist the policymakers in mapping out and understanding their appropriate actions.
- The moderator commented that DeFi is the opposite of the traditional financial sector with the borderless and intermediary permissionless space. The question posed was related to the main governance models that are in use. Mr **Kevin Werbach** identified three distinct kinds of DeFi governance in a high-level view. The division criteria were the degree of decentralization in the projects. The first type has centralized governance, where a development team is in charge of the protocol and smart contracts creation and maintains control on the governance of decisions. The second type has a higher decentralization degree compared to the centralized paradigm. The second type is partially decentralized and uses tokens to grant voting rights. In this type,

any change to the systems' parameters must be approved by authorized signers. The last type is fully decentralized governance, where a DAO structure directly implements the votes cast by the token holders.

- Mr **Jacek Czarnecki** has answered the following question about the challenges that governance models pose from Maker Foundation's point of view. The answer to that question is complicated as it requires the foundation's view. The answer 's complexity lies upon the fascinating foundation situation since Maker is dissolving despite being the entity to provide the architecture to build upon. The system is completely decentralized at this point. Consequently, the definition of a representative is difficult to be determined. Maker Foundation had the role of the main educator about the system, but the advanced decentralization has rendered such a role irrelevant. The decentralization and governance model are better to be accessed with the external world interactions. The projects can easily operate into their socially and governmentally isolated space created on the blockchain, but the interaction with the external world is vital. There are two distinct ways to gauge the extent of a project's decentralization. The first way is to assess the role in the project of the original creators or the entity driving the development. The second way is in respect to the various types of integrations with the system. Bitcoin is the perfect example, as the original creators have no impact and anyone can integrate with the protocol. The situation does not differ in the DeFi protocols. There can still exist a centralized entity despite the decentralization of procedures in the protocol. Furthermore, DeFi projects are to onboard real-world assets in their systems. That is the real verification test for the DeFi protocols. Real-world assets are coming from the traditional financial sector that operates in a centralized manner. Onboarding such permission assets in those permissionless infrastructures is the real test field for these governance models.
- The next question was on the risk and challenges for the decentralized structures. Mr **Fabian Schär** and Ms **Siân Jones** answered in succession. Mr **Schär** brought forth the division of the decentralized structures in three separate models by relying on the degree of intervention. These structures are the absence of intervention, the intervention through tokens and the intervention through admin keys. Static protocols and smart contracts are examples of no intervention since no change or update is deployed. Such a structure might suit DeFi projects but carries the drawback that no correction can be performed after the deployment. In his belief, the more centralized structures in terms of development will gather regulatory scrutiny and might merge with traditional financial systems. On the other hand, the completely decentralized structures may prove robust to regulation. Ms **Jones** initially directs the attention to DeFi protocols reliance on people to undertake the initial deployment. Once a protocol comes to fruition, that is the point that the regulatory focus should be on. A future challenge can be that the whole DeFi ecosystem may end up bifurcated into industrialized solutions and more decentralized ones. The scene may be fragmented, as protocols and solutions are increasing in number. The fragmentation can call for a combination of the existing solutions to create an optimal solution. Finally, protocols and networks may be proven to be prematurely deployed as more and more challenges are addressed.
- The moderator set the floor with a question about the thoughts on the opportunities in decentralized governance. Mr **Kevin Werbach** believed that there is room for experimentation in the field. There are historical examples of community-based or decentralized governance. He referenced the Nobel decorated economist Elinor Ostrom with her work on commons-based governance as an example. He noted that all these cases are in fairly small close-knit communities. Blockchain initiatives like Maker DAO are addressed to wider communities and have digital assets locked in smart contracts. Token holders exert authority over governance. The experimentation in the field can create new ways of trust that do not rely on a central entity.
- The moderator extended the previous question to view governance models that go beyond traditional financial systems. Mr **Jacek Czarnecki** commented that many theoretical models and practical applications of DAOs were running for a few years, but none of these models took

off prior to the DeFi hype. It was noted that many projects that tried to build generalized decentralized models for application on various cases depending on the needs have failed. So, a specific system or product can make use of the benefits of governance. The absence of governance is difficult to succeed in a complex system that has to react to the changing reality. Blockchain networks do not have a centralized entity and require a decision-making process to be in place. Governance is a consequence of that combination that blockchain networks aim to provide. The governance relates not only with technology, but incentives in the system design and social structures impact the governance model. It is possible to create a powerful governance system by combining decentralized governance with the transparency offered by open blockchains. Essentially, the governance system can be audited from public entities outside of the blockchain. All in all, it would be more appropriate to look at decentralized governance systems in the context of a particular application accompanied by its needs rather than an abstract way.

- The next question was on the opportunities in building brand new and multi-dimensional governance structures. Ms **Siân Jones** believes that there is a golden opportunity in improving the regulatory methodologies. Traditional methodologies work rather poorly, but regulators put their faith in them. The DeFi community has yet to grasp the importance of the decentralized governance models that can outperform traditional regulations. The community is heading towards a confrontation with policymakers, but it is not late to change their direction and emphasize the importance of decentralized models. Mr. **Fabian Schär** added some differentiating points between DeFi governance and traditional models. The first point was about the transparency that models based on blockchain can achieve. Traditional governance models that have been operating for years does not become obsolete with blockchain. Rather than that, many of the existing governance models can be deployed on-chain and make use of transparency. Another difference is the option of creating forks on blockchain projects. Governance protocols can act as the basis and any variations to the policies can be deployed as a fork.
- The final question was on the future direction for the DeFi governance considering the increasing complexity of DeFi and the imminent regulatory scrutiny. Mr. **Kevin Werbach** stated that regulators are concerned about decentralized governance. The first set of concerns is relevant to the governance systems themselves. While tokens are providing governance rights, there are indications that people buy them as appreciating the value of the project with no intentions in the participation of governance. Another set of concerns is about the existence of money laundering or other financial crimes. All in all, the prohibition of providing services and governance is not the correct answer to the problem. Clarifications on regulatory ambiguities could aid the path into the future. For instance, venture capitals opt to delegate their voting power out of fear of legal responsibility on the project. Mr **Jacek Czarnecki** expressed his hope that regulators will get to engage in those governance systems. The first-hand experience is vital to understand the decentralized models. Systems facilitate learning and participation as they along with the forum discussions are open. There are more features to come in the future like the right to veto a decision. Mr. **Fabian Schär** shared his belief that governance models will occur in two extremes cases of abiding by regulation and decentralization. Projects that are in the middle ground should adjust towards one of the two extremes. More specifically, projects with dependencies on special privileges and oracles will push regulators towards actions and adopt a more regulated environment. On the other hand, projects without dependencies can be fully decentralized. Ms **Siân Jones** was hopeful for the governance models, but she was reserved due to some concerns. DeFi projects can enhance their resistance to regulation by their design. Such a case may discourage regulators from understanding the decentralized models in DeFi.

IMPLICATIONS OF DECENTRALISED NETWORK GOVERNANCE FROM A DATA LAW PERSPECTIVE

Following the panel discussion about the decentralised governance in DeFi, **Dr Michele Finck** had the floor to present the implications from a data law perspective. The majority of the public's efforts are focused on understanding the innovation and disruption that blockchain can bring forth. The appropriate view from the perspective of a data law practitioner would be the adoption of the institutional perspective. The most relevant insight for data law practitioners on blockchain is that it tries to decentralize control over data across different parties that may or may not know and trust each other, and conversely be able to coordinate. The parties can be geographically dispersed and under different jurisdictions. The diversity in jurisdictions results in a wide range of implications. For that purpose, the EU data law was used as a focal point in the presentation.

The European Data Protection Law revolves around the data controller, as it is the entity accountable for the personal data processing by the data law. The data controller is generally the natural legal person who must abide by the data law's obligations. Data controllers are not exclusively a single entity, but joint controllers are possible to exist. The GDPR provides the data controller definition.

In recent years, the data controller definition has broadened with considerable modifications that spring from legal cases. Indicative cases that resulted in modifications were the Wirtschaftsakademie Schleswig-Holstein and Jehovah Witnesses. Those modifications are significant to decentralized networks, as the data controller definition is increasingly expanded.

There is a vivid debate in Europe on determining the actors in blockchain-based decentralized networks who qualify as data controllers. A generally accepted agreement on the matter is currently absent. The definition of data controllers in blockchain is complicated, as blockchain refers to a range of different technologies that have different technical and organizational structures. The determination of data controllers may call for a deep dive into the details of a project with respect to technical and organizational setups.

There are Layer 2 solutions in blockchain that data controllers are clearly determined by applying the context of agreement in the processing means. On the other hand, Layer 1 solutions have numerous candidates for defining data controllers. There are two fundamental concerns for defining data controllers in Layer 1 solutions. These concerns are the lack of legal certainty and the possibility of obligating actors with no technical abilities to abide by GDPR requirements due to the broad definition of data control.

The Data Governance Act was briefly discussed, as it is a legislative proposal by the European Commission. The Act creates a light touch notification framework for data sharing providers. A trend is to rely on blockchain to build data sharing services. A laudable characteristic of the Act is that it is tech-agnostic. An example of this characteristic is that payments for data sharing services can take any form. In other words, payments may be possible to settle with the use of tokens. From a decentralized network perspective, the Act still requires the existence of a centralized legal entity that will be in charge of applying the notification by the Data Governance Act.

The presentation wrapped up with some finals thoughts by Dr Finck. The development of the data economy can benefit from the growth of decentralized data networks. There are considerations in respect to legislation as there are laws that may limit the decentralization. Clarification should be in place as technology brings changes. For instance, the data controller concept is a point to consider for clarification in the context of decentralized networks.

PANEL DISCUSSION 2: LEGAL AND REGULATORY CONSIDERATIONS

Moderated by: Íñigo Moré, *member of EUBOF expert panel, Expert in payment systems and services*

- **Pietro Marchionni**, Coordinator Infrastructure &Technology at European Blockchain Partnership EBP
- **Antonio Garcia Rolo**, CIDP - Lisbon Centre for Research in Private Law; Faculty of Law ofnthe University of Lisbon
- **Prof. Dr. Andrej J. Zwitter**, Dean - Faculty Campus Fryslân, Professor of Governance and Innovation University of Groningen
- **Joshua Tan**, Metagov X, Stanford, and Oxford

Objectives of the session:

- Discuss about the way that current legislation fares with the innovation stemming from blockchain and DAOs.
- Provide the possible solutions that could be adopted in the future to facilitate the blockchain cases.

Main outtakes from the session:

- The panel moderator, Mr **Íñigo Moré**, introduce the panel to the discussion. The focus of the discussion was to be the legal and regulatory considerations. Examples of regulations to consider in blockchain are the data protection regulations, anti-money laundering regulations and MiCA regulation. Prior to any question, Mr **Moré** proceeded to introduce himself and the panellists.
- The audience had the opportunity to get accustomed to EBP and its role as Mr **Pietro Marchionni** filled in the details. The member states of EU are jointly participating in the partnership and welcome collaboration with other nations to achieve the partnership's goal. The goal is to develop seamless cross-border services that will be facilitated with blockchain. The goal is the result of the numerous problems in delivering services by relying on public infrastructure. EBSI incorporate the idea of a public blockchain as it offers a common environment for cross-border services. The EBP tries to allocate the work to groups focused on core areas, services, and infrastructure. The very first service that was focused on was the public administration. Examples like citizens' digital identities and diplomas were brought up to demonstrate the importance of a cross-border service. All in all, EBP with the use of blockchain can help the EU achieve its fundamental goal, as Europe can achieve greater unification and come closer to become a single entity with cross-border services.
- Mr **Antonio Garcia Rolo** shared his thoughts on the matter of blockchain being an object of public or private law. The answer is complex as different considerations should be accounted for. Generally, blockchain can be considered as a public ledger that allows one to access ownership of assets and validate transactions. In that regard, blockchains act similarly to any registry curated by public organizations, such as land registries. While registries are subject to public laws, individual transactions are regulated by private laws. For example, the land registries are documenting the land ownership that can change via selling or buying transactions. In other words, the majority of blockchains can be regulated by private law as a material perspective that tracks the ownership of assets. Finally, the governance perspective of

blockchain may lead to the appliance of private law. Public blockchains, even completely decentralized cases, are not managed either privately or publicly.

- The legal status of DAOs and issues to be addressed in their regulations were matters that Mr **Antonio Garcia Rolo** elaborated on. The broadness of the DAOs definition impacts the answer to these matters. The broad perspective to DAOs incorporates multiple blockchains, while the narrow is focused on the smart contracts. Smart contracts are a way to conceptualize an organization as relatively autonomous and self-sufficient. Autonomy and self-sufficiency should always be in mind, as they impact the legal qualification of DAOs. DAOs are trying to not rely on managers or centralized structures for decision making. Code deployments could automatically address the agency problems and moral hazards associated with the absence of delegated management. The past statement by Vitalik Buterin is relevant to the DAOs. That statement was that the central role in blockchain structures will be automation, while humans would be actors at the edge of the network. DAOs would not be qualified as incorporated companies in most jurisdictions, but rather an application of unincorporated partnerships stemming from common or civil law. Unincorporated partnerships are the result of two or more people pulling assets jointly to carry out a common purpose that will result in a reward through collective decisions. Most cases of unincorporated partnerships would have legal personality and therefore would not enjoy entity shielding so the members would be jointly liable for debt and damages. The law is commonly offering flexible and safe structures to small entities and has not considered the application on the blockchain. The solution of having DAOs register as companies and disclose information is problematic, as most jurisdictions mandate a delegated management structure. Another more plausible solution is to bestow legal personality to DAOs along with limited liability. The registration in public records can be beneficiary to DAOs only if there is no requirement for a fixed management structure. The example of Vermont that a blockchain-based LLC is possible to exist is such a case. All in all, legislation may accommodate DAOs with a special type of limited liability entity that does not intrude in the management.
- After the initial recommendation by Mr **Moré** of the paper, Dr **Andrej J. Zwitter** shared his thoughts on governance models, keys that centralized models can adopt and the future challenges. Traditional governance models tend to be highly hierarchical and have a top-down approach. The shadow of the state is present in network governance models with semi-autonomous regulation, as the state bestows a derived right to actors to make their own regulations. Additionally, the traditional governance models rely on clearly defined roles and trust between the members. The trust is placed on regulators that they will sufficiently complete their duties and the subjects of the regulation will abide by the regulation. In contrast, the roles in decentralized network governance tend to shift between the actors and complicates even more in the case of strong interaction with off-chain governance. DLT can create a trustless environment, but it has implications for the legitimacy that is attached to the concept of trust. The challenge is to strike a balance between the interest in voting and the concrete interest of buyers voting. A governance structure is a consequence of the decision to implement DLT. The governance in DLT initiatives is extending outside of blockchain with the off-chain governance. Laws and contracts impact the off-chain governance or even be a result of the on-chain governance. It is a challenge to integrate both governance types and their interactions. A final challenge was on the way to preserve the advancement made by blockchain by abiding by the regulation.
- Mr **Joshua Tan** commenced with the two definitions that are given on meta governance. The first definition is on the tools and infrastructure that make governance possible. In more detail, the infrastructure is possible to allow the regulation of certain things. The code is a means to regulate things in the case of online platforms. Generally, governance is often implemented through different institutions, infrastructure, foundations, and legal frameworks. Meta governance is the pattern of interactions between numerous platforms with each other. Mr **Moré**

recommended the site of the project, Metagov, to find detailed information on meta governance. Mr **Joshua Tan** stated that self-governance is an inspiration considering the current situation and past events within the internet democracy. On that note, a reference to the article title "Declaring the rights of avatars" by Raph Koster was made to showcase the similarity of expressing the requirements of successful centralized projects to the opportunities given by blockchain implementation.

NOTABLE DECENTRALISED APPLICATIONS UTILISING A DAO OR SIMILAR STRUCTURE

Moderated by Jeff Bandman, Bandman Advisors & Affiliate Professor of Institute for the Future, University of Nicosia

- Prof. **Samer Hassan**, Faculty Associate, Berkman Klein Center, Harvard University; Associate Professor, Univ. Complutense de Madrid
- **Federico Ast**, founder and CEO of Kleros
- **Ajit Tripathi**, AAVE
- **Dr Michael Gebert**, Chairman, European Blockchain Association (EBA)

Objectives of the session:

- Discuss use cases that come from the real world.
- Provide insights on the way DAOs work.

Main outtakes from the session:

- Prof. **Samer Hassan** initially took a step back to present practical case studies with known online communities. These communities are open, flat hierarchal, flexible, and decentralized. The participation in these communities is not equal between users clustered as creators, contributors, and lurkers. Examples of online communities and decentralised enterprises were given as evidence that these structures existed prior to blockchain. Blockchain has introduced new structures like DAOs. DAOs are making use of by-laws that handle the interaction between the parties. By-laws can be encoded in a code to be deployed on blockchain. A comparison between traditional organizations and DAOs brought forward that DAOs are server-less and based on encoded rules. Next, a comparison between contemporary platforms like AirBnB with DAO was presented. Users can freely join DAOs operating on the same blockchain without losing their reputation as their data are stored on the chain. Various digital governance models operate in the real world like StackOverflow with its reputation system, Linux with a layer system, and Wikipedia with a more democratic system. Four governance models for DAOs were elaborated. Notable points were the drawback of plutocracy in majority voting and the continuous capture of preferences with conviction voting. DAOs are in an immature phase and is an open place for experimentation. The vivid hype around DAOs has inflated the expectations in some areas. Finally, Prof. Hassan has presented his research work on the different areas.
- Mr **Federico Ast**, as a representative of Kleros, presented his case. Kleros is a DAO that was created to tackle a Web3 ecosystem's problem. That particular problem is that smart contracts are prone to subjective situations despite their efficiency in executing well-defined problems to self-execute. Subjective situations call for human intervention and are likely handled by legal systems and courts. Initially, the parties agree on the conditions for the completion of a task like building a website. Once the parties on the conditions, funds are locked in a smart contract. Kleros is the arbitrator in this process that selects the jurors to vote for the decision. In other words, Kleros is a DAO that has encoded the process for jurors' selection, evidence treatment, and the way credits work. All these actions that are encoded on the chain bring procedural fairness to the arbitration process. An integral component in the jurors' selection is the PNK,

which is an ERC-20 token. Jurors stake their tokens in website courts that they prefer in order to be drawn as a juror. Game theory is involved in the process to prevent Sybil attacks and support the incentives for the jurors' honesty. Kleros can be used by other DAOs to secure their procedures. Uniswap, a DAO exchange platform, has introduced a list curated by Kleros. This list has tokens that are regarded safe by the Tokens application of Kleros. The case of Baer Coin was a successful case that was flagged by Kleros application. The coin was later investigated by the Chinese Police as a fraudulent case. Another role for Kleros is to act as the Supreme Court of a community. In other words, a proposal for voting that contradicts the core fundamental beliefs of the DAO can use Kleros to rule out such proposals. All in all, Kleros is a service that can be described as "Justice-As-A-Service" for the decentralized space.

- Mr **Ajit Tripathi** has demonstrated in real-time the governance policy in the AAVE, the well-known DeFi protocol. Proposals by the community can impact the governance of the protocol. Discussions are taking place in the governance Forum as Request for Comments (ARCs). As the initial brainstorming matures, an AAVE Improvement Proposal (AIP) can be issued. Token holders can delegate either their proposition power or their voting power. Once a proposal is voted for, a code change that is locked in a time lock is deployed. This procedure creates the opportunity for permissionless innovation, as anyone can contribute to the growth of the proposal. The contribution is not limited to token holders, which makes the protocol's growth a community procedure. It is possible that multiple DAOs exist in a DAO. For instance, the introduction of new assets in AAVE is handled by the risk DAO. The goal is to make use of DAOs as mechanisms to turn the protocol into a fully community-owned case. DAOs are funded via a fee mechanism to support ecosystem growth. A fascinating case of the interaction between DAOs is possible. The term protocol politician refers to protocols that exert influence and are looking to influence the technical direction of other protocols. Democracy of strangers and permissionless interactions are the driving ideas of the DAOs interactions. Finally, DAOs are not strangers to traditional challenges in democracy. DAOs are facing challenges in motivating the voters and handling the voters' abstention. Quadratic voting is researched as a potential solution to the impact of wealth in democracy.
- The final use case was the European Blockchain Association (EBA) discussed by Dr **Michael Gebert**. The EBA has adopted a semi-autonomous structure that derives from an original DAO that describes the type of network connections. The network's nodes act automatically based on self-created rules. The major difference between EBA and the most common DAOs is that EBA is founded upon a legal entity, EFAU. The legal entity is registered as an association in Germany. In simpler terms, EBA is adopting a DSAO (Decentralized Semi-Autonomous Organization) structure that is supported by a set of governance processes headed by the EBA board. The semi-structure with a legal entity facilitates the EBA's integrity into society, as social, legal, economic, and environmental aspects are addressed by the legal entity. EBA is aiming to offer decentralized toolsets for people to work on and use in their projects. The framework act similarly to open-source solutions, since the EBA has a neutral role to coordinate blockchain activities. The framework has its own native cryptocurrency that can be used in the use cases and services. The network can support a plethora of different nodes that have different roles. The EBA provides some educational material to users to get accustomed to, while hackathons are held to motive developers to participate in the protocol. Local hubs, EBA Academies, and Working Groups are facilitating the network's operations. There are three types of membership to facilitate participation in EBA depending on the interested party. The three types of membership are divided into individual, institutional, and corporate members.

Appendix

Workshop slides

- Blockchain Network and DAO Governance, by Mario Laul
- Decentralized Governance, by Nena Dokuzov
- Decentralized Autonomous Organizations: What, Why, and How, by Samer Hassan
- Empowering the European Blockchain Ecosystem, by European Blockchain Association
- Kleros: Decentralizing Justice on the Blockchain, by Federico Ast
- Decentralized Finance (DeFi) Policy-Maker Toolkit, by World Economic Forum

Workshop videos

- Videos from this and all other workshops can be found on the EU Blockchain Observatory and Forum website under the section Reports
- Videos specific to this workshop: Decentralized Network Governance workshop recording

Official agenda

Time	Activity
14.00	**Welcome** Peteris Zilgalvis, Head of Unit, Digital Innovation and Blockchain, DG CNECT
14:05	**A general overview of decentralised network governance,** Mr Mario Laul, Governance Researcher for Placeholder
14:20	**Decentralised governance in public organisations,** Nena Dokuzov, Head of Project Group for New Economy and Blockchain Technologies at Ministry of Economic Development and Technology of Slovenia
14:30	**Panel Discussion: "Governance of Decentralized Finance",** • Kevin Werbach, University of Pennsylvania, USA • Fabian Schär, University of Basel, Switzerland • Siân Jones, XReg Consulting, Gibraltar • Jacek Czarnecki, Maker Foundation, Poland Moderated by: Dr. Agata Ferreira, member of EUBOF expert panel, Ass. Professor in Warsaw University of Technology
15:10	**Implications of decentralised network governance from a data law perspective,** Dr Michele Finck, Max Planck Institute for Innovation and Competition
15:25	**Panel Discussion: "Legal and regulatory considerations",** • Pietro Marchionni, Coordinator Infrastructure &Technology at European Blockchain Partnership EBP • Antonio Garcia Rolo, CIDP - Lisbon Centre for Research in Private Law; Faculty of Law ofnthe University of Lisbon • Prof. Dr. Andrej J. Zwitter, Dean - Faculty Campus Fryslân, Professor of Governance and Innovation University of Groningen • Joshua Tan, Metagov X, Stanford, and Oxford Moderated by: Íñigo Moré, member of EUBOF expert panel, Expert in payment systems and services
16:00	**Notable decentralised applications utilising a DAO or similar structure** • Prof. Samer Hassan, Faculty Associate, Berkman Klein Center, Harvard University; Associate Professor, Univ. Complutense de Madrid • Federico Ast, founder and CEO of Kleros • Ajit Tripathi, AAVE • Dr. Michael Gebert, Chairman, European Blockchain Association (EBA)
16:45	**End of day**

Speakers Biographies *(in order of presentation)*

Mario Laul works as a researcher for Placeholder, a venture capital firm that invests in open networks and web3 services. His research is focused on blockchain-based financial and governance innovation and more broadly the interplay between technological change and societal development.

Nena Dokuzov is a Head of Project group for New Economy and Blockchain Technology at the Ministry of Economic Development and Technology in Slovenia. She encouraged and led the preparation of Action plan for Blockchain Technology that was adopted by the Government in May 2018. She is national representative at European Blockchain Partnership, a Head of Delegation of Slovenia at UNECE, member of OECD Blockchain Expert Policy Advisory Board and a Vice Chair of Advisory Group for Advanced Technologies at UNECE.

Agata Ferreira is an assistant professor at Warsaw University of Technology and a UK qualified solicitor. She practiced law for a number of years in the financial sector in the City of London. She focuses on legal and regulatory issues of emerging technologies and innovation including blockchain and fintech. She is a current member of the Advisory Council of Blockchain for Europe, member of the Advisory Board of Consensys Health and a member of the Expert Panel of EU Blockchain Observatory & Forum.

Kevin Werbach is professor of Legal Studies and Business Ethics at the Wharton School, University of Pennsylvania. A world-renowned expert on emerging technologies, he examines business and policy implications of developments such as AI, broadband, gamification, and blockchain. Werbach served on the Obama Administration's Presidential Transition Team, helped develop the U.S. approach to internet policy during the Clinton Administration, and created one of the most successful massive open online courses, with over 500,000 enrollments. He currently leads the Wharton Blockchain and Digital Asset Project. His books include For the Win (updated edition 2020), The Blockchain and the New Architecture of Trust (2018), and After the Digital Tornado (2020).

Siân Jones is Senior Partner at the boutique policy and regulatory affairs consultancy, XReg Consulting, which specialises in cryptoassets.
She has extensive experience in policy formulation, regulatory framework development and implementation that is leveraged by governments and public authorities to help shape public policy, as well as by industry players. She is a former regulator at the Gibraltar Financial Services Commission, having previously architected Gibraltar's DLT regulatory framework, and was a delegate and technical expert on FATF's Policy Development Group at the time it dealt with virtual assets and VASPs.

Fabian Schär is a **Professor for Distributed Ledger Technology (Blockchain) and Fintech** at the Faculty of Business and Economics at the University of Basel. In addition, he is the Managing Director of the University's Center for Innovative Finance.

Jacek Czarnecki is a Global Legal Counsel at the Maker Foundation. At Maker, Jacek is responsible for global legal matters and public policy. His extensive blockchain experience stems from law firm, consulting, and corporate in-house counsel perspectives. A graduate of top law schools in Poland and the UK, Jacek has focused on the intersection of law and technology in the financial sector. In addition to his role at Maker, Jacek is an active participant in several international blockchain initiatives.

Michèle is a (tenured) Senior Research Fellow at the Max Planck Institute for Innovation and Competition. She previously worked at the London School of Economics and the University of Oxford. Michèle holds a **doctorate in EU law** from the University of Oxford, an LL.

Inigo Moré is an expert in payment systems. He is the founder of the research centre Remesas that specializes in studying remittances. In this capacity he is member of the Payment systems Market Expert Group that advises the European Commission on its payments systems policy, and serves as a member of the Spanish Chapter of the Club of Rome and member of the Economic and Financial Control Commission of CEDRO, the non-profit association of authors and publishers that is in charge of protecting and managing in a collective manner their intellectual property rights.

With a career that spans nearly twenty-five years of management, implementation and development of leading-edge technologies in the private and public sectors, Pietro's key expertise is linked to the ability to successfully lead digital transformation of complex organizations linking technology and strategic goals. After Engineering studies in La Sapienza University in Rome, Pietro led the transformation of the society during the 2000's Internet boom, the mobile transformation and today the blockchain revolution.

From 2009 to 2017, Pietro has supported the digital transformation of government services in United Arab Emirates lately as key player in the Smart Dubai projects and in the blockchain-based 2020 Vision of the small Emirate. From 2017 Pietro is involved in the digitalization of Italian Public Administration ecosystem aligning it to European Union's vision. From 2018 Pietro is the convenor of the Infrastructure group of the EBSI (European Blockchain Service Infrastructure) and is also involved internationally in the CEN/CENELEC Focus Group on Blockchain and Distributed Ledger Technologies, in the Thematic Group on Emerging Technologies (AI & Blockchain) in the Public Sector of the OECD Working Party of Senior Digital Government Officials (E-Leaders) and in ISO TC 307 Blockchain and Distributed Ledger Technologies committee.

Andrej Zwitter is Professor of Governance and Innovation and Dean of the Faculty Campus Fryslân, University of Groningen, the Netherlands. His expertise includes Data ethics, Digital and Blockchain Governance, Emergency Regulations, and innovation in humanitarian action. Prof. Zwitter has a PhD in International Law and Legal Philosophy. He is a guest professor at the University of Klagenfurt. Andrej Zwitter is passionate about understanding how modern technology affects society and how it can contribute to solving global challenges. He has consulted amongst others the European Commission, Austrian and Dutch Ministries, as well as international and national NGOs. His recent publications include:

- Decentralized Network Governance : Blockchain Technology and the Future of Regulation. In: Frontiers in Blockchain, Vol. 3, 12, 25.03.2020.
- Digital Identity and the Blockchain: Universal Identity Management and the Concept of the "Self-Sovereign" Individual. In: Frontiers in Blockchain. Vol. 3. 26. 28.05.2020.

Graduated (2013) in Law at the Faculty of Law of the University of Lisbon and LL.M. (2014) in European Legal Studies at the College of Europe (Bruges Campus), António Garcia Rolo is currently a Guest Academic Assistant in the Faculty of Law of the University of Lisbon and a researcher at the Lisbon Centre for Research in Private Law. Besides having penned various published works on company law and securities law, he has undertaken research on certain legal aspects of blockchain based technologies, namely on legal status of cryptoassets and DAOs.

Samer Hassan is an activist and researcher, Faculty Associate at the Berkman Klein Center for Internet & Society (Harvard University) and Associate Professor at the Universidad Complutense de Madrid (Spain). Focused on decentralized collaboration, he was awarded a 1.5M€ ERC grant for the P2P Models project, to build blockchain-based, democratic and economically sustainable organizations for the collaborative economy. Coming from a multidisciplinary background in Computer Science and Social Sciences, he has 50+ publications in those fields (H-index=20). In the EU-funded P2Pvalue project, he coordinated building decentralized free/open-source web-tools for collaborative communities and social movements, such as SwellRT. He's an accredited grassroots facilitator and has experience in multiple communities and grassroots initiatives. His research interests include the Collaborative Economy, Commons-based peer production, decentralized architectures, blockchain-based Decentralized Autonomous Organizations, online communities, grassroots social movements & cyberethics. Follow Samer on Twitter: @samerP2P

Federico Ast graduated in economics and philosophy from the University of Buenos Aires and holds a PhD in management from IAE Business School. He is founder and CEO of Kleros, a legaltech company using game theory and blockchain technology in arbitration. As a pioneer in the field of decentralized justice, he has lectured in universities such as Stanford, Oxford and Columbia. He is an alumni at Singularity University and hosts the first Coursera courses about blockchain and legaltech in Spanish. He is passionate about exponential technologies such as artificial intelligence, crowdsourcing and blockchain for social innovation. He is a TEDx speaker.

Ajit leads institutional growth, strategy and partnerships at Aave to enable institutions to participate in decentralised finance. Previously Ajit built banking and payments rails for Binance and Paxful, led the buildout of the fintech practice for ConsenSys and the UK Blockchain Business for PwC. Ajit is also the crypto cohost of Breaking Banks Fintech podcast and a columnist for Coindesk in addition to being an active angel investor in high quality crypto startups.

Dr. Michael Gebert is Chairman and founding member of the European Blockchain Association , that combines, synchronizes and leverages blockchain-related activities of European corporations, startups, venture capitalists, and scientific institutes. With more than 25 years of experience Michael is a believer, entrepreneur and doer, discovering the trends of tomorrow already today. He believes in a bright future and our ability to build it together.