Decentralized autonomous licence for Content-DAO

Introduction

The goal of Pando Network is to offer a full set of « licences » inspired from Free and Open Source Licenses (or similar licenses like the IANG License or PPL – Peer Production Licence) specifically "augmented" and designed to support DAOs in their self-governance. This project of licence aims to help the content-DAO - c*ontent-DAO meaning : a DAO organized around content such as video-games, software, books, etc* - in defining the modalities of collective decision making, value sharing, and the types of possible utilization of the creative collaborative content outside the blockchain ecosystem. The final objective of our team is therefore to provide freely usable contractual frameworks, as standards, allowing DAOs to collectively define the terms of use and governance of collaborative creative contents.

The goal of this project is to design a full set of licences implementing an isomorphism between DAOs governance rules - as defined through blockchain-based smart contracts - and nation-states juridical frameworks. This attempt will rely on the following hypothesis and rationale.

1. Most attempts to back DAOs by legal entities - *i.e.* entities acknowledged by nation-state jurisdictions - refer to profit or non-profit *organizations:* corporations, foundations, etc. The hypothesis underlying this project is that referring to DAOs as *contents* instead of *organizations* may fit with most DAOs use-case while drastically simplifying the problem of their legal status. Indeed, conceiving DAOs as contents allows to express their legal status within the scope of intellectual property, thus excluding most of the juridical concerns about DAOs: utility token *vs* security token, ownership, etc.

2. To offer DAOs a convenient isomorphism between blockchain-based governance rules and intellectual property-related categories we intend to leverage, improve and extend the existing licenses (the Peer-Production Licence being the main candidate). Our goal is to identify and map a simple but powerful governance-related parameters - income redistribution, decision-related primitives, etc. - into licence-related clauses. We thus intend to turn the complexity of blockchain-based governance rules into a small-set of parametrable but human-readable licensing rules.

3. We believe that such an isomorphism, though not suited to all DAOs needs, would offer a lot of advantages to the DAO ecosystem. First, it would allow a lot of DAOs to circumvent the quite

cumbersome organization-related right in favor of the much more straightforward Intellectual property right. Secondly, it would drastically lower the barrier for new entrants in the crypto-space by providing them a set of standard, human-readable and easy to use - though highly parametrable - licensing / governance scheme. Thirdly, the use of such a standardized license / governance framework would radically ease the interoperability - and thus the possibility of much more complex cross-interactions - between DAOs. Finally, it would allow DAOs to immediately profit from nation-state jurisdictions in case of disputes unsettable neither in the framework of their own governance nor in the one of the upcoming Aragon Network Jurisdiction.

4. The Aragon Network Jurisdiction will exist as a technological layer capable of settling a series of conflicts within a DAO : this is important insofar we know that this type of conflicts regulation structurally implies the emergence of common goods[1]. However, if conflict management can not be sufficient to resolve conflicts outside the blockchain environment it will be necessary to create legal tools capable of supporting DAOs in contact with traditional law. The creation of a licence capable of accompanying contents which are governed by a DAO could be an easier point of contact between DAOs and traditional law and could drastically reduce costs and manners of entry into traditional law.

FROM FIRMS TO DAO

The DAO landscape is actually going through a Cambrian-explosion like era. A wide variety of DAO schemes have arisen in the past few years. One can statistically predict that most of them will fail and die while only a few will spread and live. Obviously, though, one can't tell *which* ones are going to die and *which* ones are going to live. We're thus down to hypotheses: *i.e.* to *rational beliefs*. Our belief is that a wide range of DAOs - though not all - will share a small set of principles: to gather people around a project, to allow newcomers to easily join in, to ease openness and experimental cooperations, to engineer new authority metrics and decision procedures, to offer alternatives to waged labor. None of these characteristics is relevant within the framework of traditional organizations nor seizable within the framework of inherited laws. That's why we believe DAOs won't be legally mapped as profit - or even non-profit - organizations but as a network of contributors: a collective of people sharing the ownership of a common good anyone can contribute to craft. For that reason, our proposal aims to explore the ability to legally mirror DAOs within the framework of creative licences and right-of-use rather than in the framework of profit or non-profit organizations.

[1] As Anne Fennell said : *"An exclusion-focused view of property also carries some limitations that are especially relevant in the context of common-pool resources. Most obviously, much of the relevant action for such resources occurs "on the inside," where participants share a commons"*Fennell, L.A., (2011). Ostrom's Law: Property rights in the commons. International Journal of the Commons. 5(1), pp.9–27. DOI: http://doi.org/10.18352/ijc.252

From corporate law to creative law

Technology behind Aragon, DAO-Stack, Pando and so on will allow the sharing of value and rights of stakeholders engaged in the production of a common good. Unlike a conventional corporation, DAOs will also function as contribution aggregators and decisions making around common goods, because wherever we need to coordinate collective intelligence we will need DAOs. Whether if it's a content or a company. In fact, in many cases, the DAOs will not be constituted in the form of classical entity like "company" but will just drive network effects around a content - such as video-game, music, book or software - whose creation and evolution is opened and based on a DAO organizational form. Therefore, bringing the flexible and stimergic character of DAOs into corporate law seems to be a particularly difficult operation because, if we want to work with corporate law, we will have to face a series of boring and tough problems such as : *depends on where you are located, need of certificate of incorporation, payment of annual fees, location of the bank account, and so on.*

More generally combinatory relationships between DAOs and corporate law may lead to deeper problems :

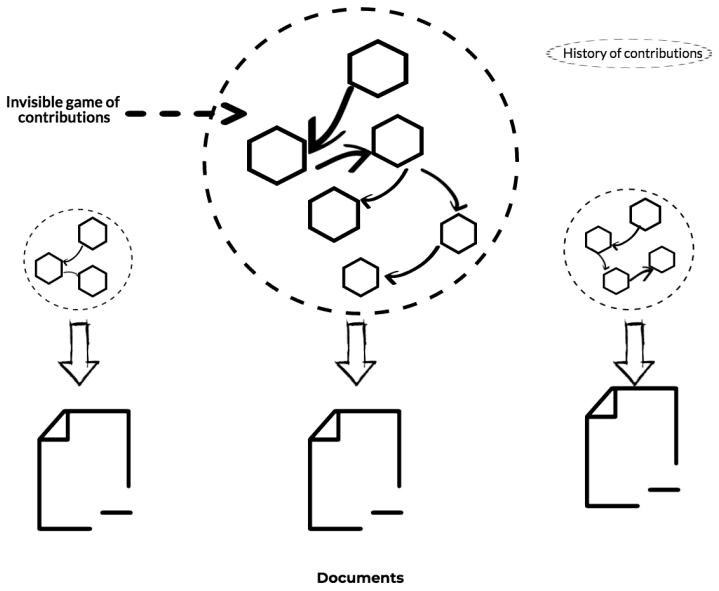
- Setting up a legal-DAO requires thinking in the categories of the traditional world which are cognitively exhausting due to a complex intrication of legal rules in this field that remain incomprehensible to non-technical people.
- This pushes the DAO to a bureaucratic heaviness that it naturally avoids by its computational form.
- Making DAOs exist via such bureaucratic manoeuvres risks greatly limiting their flexibility and their potentials to create network effects.
- This correlates DAOs with the political decisions of the country on which the company law is based thus threatening the autonomy of the latter by increasing the risk of enclosure.

That's why if we want to create an isomorphism between traditional law and DAOs, thinking from the law of creation rather than corporate law seem to be an excellent strategic entry point. And this because blockchain technology also solves a series of problems inherent to the creation of content specific to the Web 2.0.

The infrastructural problem

Indeed, we start from the observation that Web 2.0 is a web of documents and not a web of contents because the addressing system specific to Web 2.0 does not allow to precisely trace the whole history of

the contributions which took part in the production of a document. Nor does it clearly attach value to the activities of the various contributors (Re-mix, translation, adaptation, correction, etc.)



Thus a content cannot generate a fair return in value between all contributors because the technical infrastructure on which content is based - web 2.0 - is not yet capable of clearly answering the following questions:

Who did what ?

What is the value of each other's contributions?

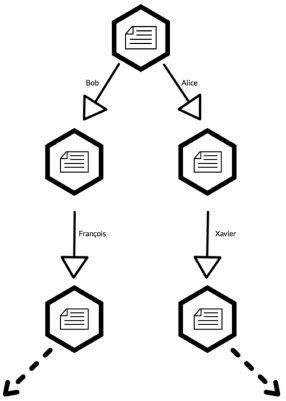
As Creative Commons also pointed out in a 2016 post:

« The Web has obviously changed significantly since 2002 when CC launched, but the way the CC licenses work hasn't. While most web services and apps are data-driven and accessible via API, CC's licenses are largely static, devoid of data, and rooted in markup. There are no services to enhance the user experience, or provide additional value and create connections. Users still have to manually provide attribution. There are no analytics about use or re-mix. Adding a work to the commons is a huge gift, but contributors get very little in exchange — no feedback, no analytics, not even a "like" or a "thank you." While CC is integral to many kinds of creativity and sharing on the web, it has yet to capitalize on this influence to connect and light up the commons. »[2]

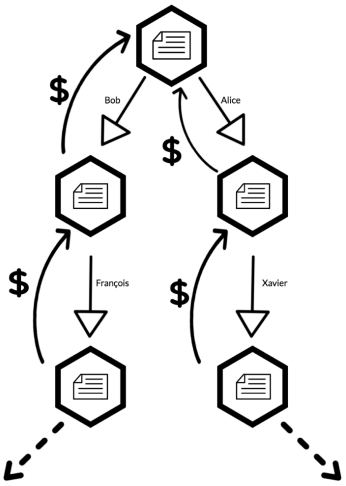
[2] Ryan Merkley, *Towards a vibrant, usable commons*, Source seen on 01/07/2018 at https://creativecommons.org/2016/01/14/towards-a-vibrant-usable-commons/

Blockchain: traceability for the commons

The traceability that blockchain technology allows is a major asset for the constitution of cooperatives but it offers more granularity by not considering the cooperative as simple a group of workers but as a network of contributors.



Keeping track of each modification on a file also offers the ability to remunerate the contributors of open creative contents while rewarding all the dependencies from whom each new modification born. This is in fact one of the possibilities opened by blockchain technologies as CC-France is trying to do with Book project and also by our valuation network build on the top of Pando and called Ryhope Network. On this layer, if forks or contents built on top of another content gains income, their original contents gain income too. This is a way for remunerating the history from which each contribution always comes, and a way to encourage open-source creation.



Thus the design of a software, the writing of a book, or the realization of a video-game can rely on a DAO within which each member has a determined quantity of authority on the content and in which it is possible to know who did what and for what quantity of authority. With content-DAO, ownership is no longer considered as an absolute right of a person over a content but falls within a bundle of rights connecting the owner to other people about his content. As the economists Dans Alchian and Harold Demsetz said in 1973:

"It is not the resource itself which is owned; it is a bundle, or a portion of rights to use a resource that is owned" [3]

The authority of contributors over a content is thus distributed over the contributions of each within the DAO according to rules established upstream by members. With content-DAO a creative collaborative content is therefore defined by the bundles of rights that pass through it.

In order to bring the DAO in contact with the traditional jurisdiction it is possible to work on this proposal:

"A content is a DAO whose rules of governance, norms of sharing and exploitation are defined by the DAO itself through a specific dynamic licence"

In this perspective, contents are DAOs and therefore require a set of "turnkey - modular" licenses adapted and consistent with new forms of organization promised by blockchain technology.

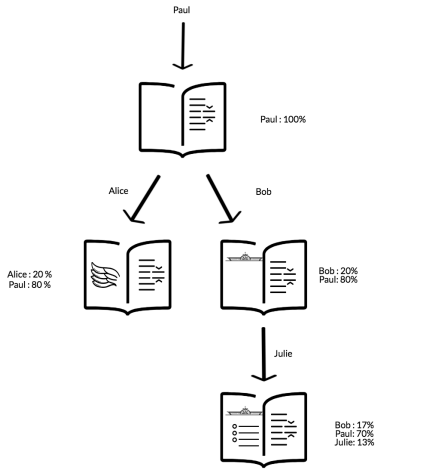
[3] D.Alchian & H.Demsetz, *The Property Right Paradigm,* The Journal of Economic History , Vol. 33, No. 1, The Tasks of Economic History (Mar., 1973), pp. 16-27

Pando and the birth of content-DAO

Within the framework of the Aragon-Nest-Program in April 2018 Aragon & Placeholder funded Pando: a fully decentralized versioning protocol where each repository is governed through an AragonOS-based DAO. As mentioned in the Pando white-paper the aim of this project is to :

"Offer a distributed cooperation, distribution and valuation infrastructure to Commons Creative Contents (CCC) i.e. any kind of content produced through an open process such as - but not restricted to: Open Source Software, Books licensed under Creative Commons, Music licensed under Creative Commons, etc. "

Turning each content into a DAO is thus rendered possible thanks to the combination of the Git-like protocol and the possibilities opened by the blockchain technology. As shown in the image below the Pando protocol currently allows each contributor to earn authorship in the form of authority tokens on the repository controlled through a DAO. In fact each new contribution within a content automatically dilutes the share of previous contributors.



This automated distribution of authority within the content-DAO thus technically create a real "bundles of rights" inside the content itself. This combination between a Git-like protocol and DAOs allows us to reactivate the definition of the common as it was thought by Elinor Ostrom[4] i.e a good or resource held collectively by a community that sets the governance rules for it.

[4] Ostrom, Elinor (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press

License as governance instrument

Rather than thinking directly about a connection between traditional law and DAOs we should offer to the blockchain ecosystem an easy and understandable legal tool that allows each content-DAO to collectively define its rules of governance with a high degree of accessibility. To do so the creation of a license build on a set of smart-contracts seems the most adjusted strategy. That's why we propose to create a license that would respect the three following general principles:

- Every DAO can set a simple set of parameters that are translated into a license and which define the rules of governance of the content-DAO.
- The parameters and clauses of this license are easily readable and editable by everyone.
- The legal code behind each license is authoritative in traditional creative law.

Such a move allows us to bypass corporate law and its enormous complexity to move into the more practical field of creative law.

Such a license will also allow content-DAO to :

- adapt quickly to the wishes of all its members by setting common rules to which each can refer by reading the license. Do you want to know how this content-DAO is governed? Just read the license.
- quickly create political changes for a project by collectively changing license parameters through voting mechanisms.
- make a license no longer a simple buffer that protects content but a real tool for coordinating decisions, thus creating a real involvement of everyone in the governance of a project through the licence.
- create experimental governance models through the creation of new smart-contracts and thus make the license an evolutionary tool capable of defining a whole series of standards able to espouse a huge variety of political and economic wills.
- allow everyone to observe the licenses used by others content-DAO and thus being able to copy them without needing to reinvent the wheel each time.

Upgraded the Peer Production Licence

Since the first Free & Open Source Licenses written in 80s, developers are sharing and improving licenses as they are sharing code, seeking for a fair balance allowing contributors to benefit from others. Even if Free and Open Source licenses succeeded at managing IP rights, and if the governance is today well

addressed by some generic policies, there is still a real need for a virtuous way to remunerate all contributors -- including smaller ones.

Create in 2012 the Peer Production Licence is an adaption of the CC-BY-NC-SA (Creative Commons - Attribution - No commercial use - Share-alike) but it does not intend to reject the non-commercial clause, but try to adapt it in order to promote the development of a new economy, organised on a decentralised basis and geared towards the production of common goods. PPL was a licence that sneaks his inspiration from models of political organization usually called "open corporatism". Its principle consists in allowing contributors (those who participate in the creation and maintenance of a common good), cooperatives and non-profit organizations to use and share works, including for commercial purposes, but commercial entities that would seek to make a profit by using the common good could only do so within the framework of strict reciprocity, by contributing financially to the maintenance of the common.

To build our license we will start from the bases laid down by the PPL and we will rewrite it in order to adapt it to the blockchain ecosystem. We made the choice to start from this license for the following reasons.

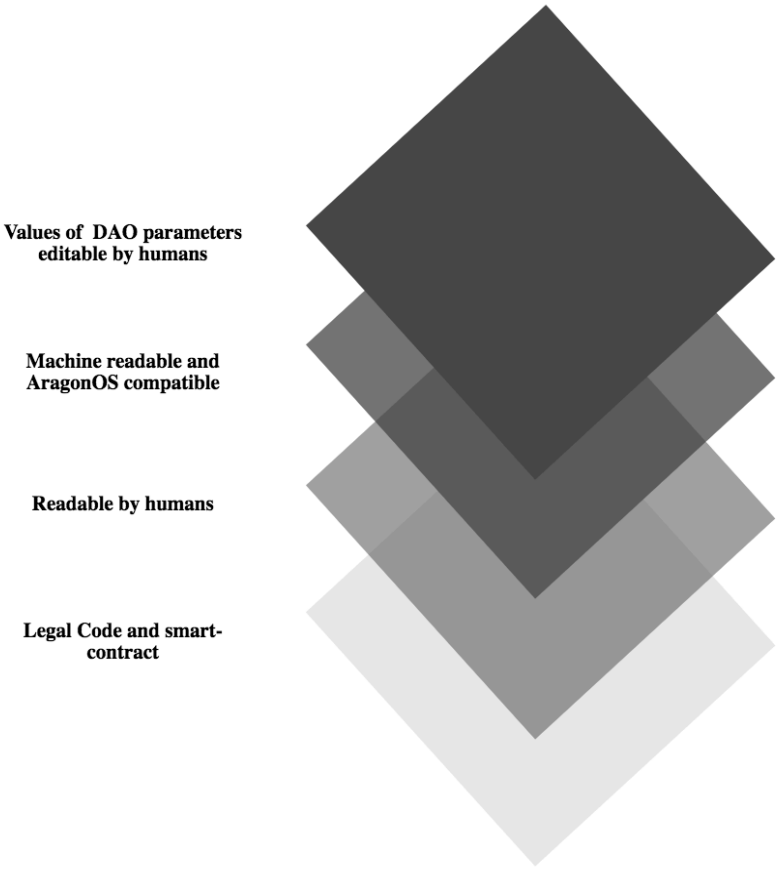
- It is designed to remunerate all contributors of a content and therefore does not consider the content as a group of workers' but as a network of contributors' subject to evolution.
- It provides a community's self-organizing capacity to manage a content.
- It does not prohibit commercial use of a content but frames it in a modular set of rules.
- Like the free software movement this licence does not allow special rights for an original author, but insists on the right for all to use and reuse a common good.

Indeed blockchain technology presents itself as a huge field of possibilities capable of technically equipping and stretching out the wills behind PPL. Obviously because this technology can provide concrete traceability of the creation process, can define the bundles of rights attached to them, and allows automatic payment of contributors under those rights.

This framework will be an evolution, or complement, of the traditional PPL licenses but with additional layers:

- The legal code usually describing the terms of the license (CC BY, CC BY-SA, etc) will be accompanied by a series of smart contracts able to equip the DAO in the governance of the content.
- The explanatory summary of the code will be accompanied by an explanatory summary of the smart-contracts by using RADSPEC.
- The traditional "machine-readable" version of the license will remain but will also be Aragon-OS compatible.

- The values of the parameters (fork, commit-cost, etc.) can be modified from the beginning by the licensee who applies a given type of licence to a content. The value of these parameters will be



displayed dynamically in the "human-readable" layer.

Smarts-contracts for a decentralized autonomous licence

This new license could thus integrate the scalable parameters which can be easily configured to architect the governance system of a DAO.

- ### Incomes distribution

When a content-DAO earns value - for example in the case of a commercial use of its software - it will be able to define directly in the license the modalities of distributions of the incoming sums inside the content-DAO. In fact, it is up to each DAO to apply its political organization models as it wishes.

A DAO may thus decide to share the sums generated by its content by indexing the distribution to the percentage of authority held by each. Or, in a more "communist" perspective, it could decide to distribute the income identically among all the members.

- ### Percentage of Quorum

For his project, a user could define the quorum. That is to say the minimum percentage of votes necessary for a proposal to be validated or not.

This value could be particularly interesting to define the temporalities and the number of contributors on which a project will evolve. Indeed, the lower the percentage is, the less it is necessary to create a consensus between all the members of the project and therefore the more quickly a project can aggregate contributions. Conversely, a higher percentage implies a greater involvement of all DAO members and therefore could lead to slower temporalities but could lead to better decisions for all.

- ### Cost of the Commit

The openness of a project can be defined by the ease it offers newcomers to join in.

For a project, users can define the cost of a commit. That is, the amount that an Internet user - without sufficient authority within the DAO to act - must spend to submit a proposal.

This value could be particularly useful for modulating the number of proposals a project wishes to receive. For example if relatively well-known personalities of the general public open a creative project they might find themselves in a position where an overload of demand creates a informational pollution. In such a situation increase the cost of entry may appear to be a solution to the excess of proposals.

- ## Fork

The license could define the authority rate allowing percentages that this fork grants to its dependencies in case of remuneration for the latter.

This definition would thus enable the licensee to facilitate or not parallel developments to his project.

- ## UBIT option: Universal Basic Income Tax

As an example, a content-DAO could decide to create a transaction tax operating within the content-DAO in order to participate to a pool whose mission was to create a universal basic income.

This option will function in fact as a kind of "label" for the content-DAO by displaying their political will. Obviously this option would imply the parallel creation of a specific DAO whose sole mission is to collect those tax in order to make effective a universal basic income.

- ## A modular licence

The use of such a license requires all its parameters to be easily editable in a consistent fashion. To help enforce this consistency, we propose to develop a custom aragon0S app, offering a dedicated front-end to submit licensing / governance scheme update, with respect to the DAL framework.

Considering the CC license as a real tool for the governance of creative projects also presumes that all of its values are themselves modifiable as the project progresses. Thus a meta-parameter to change the original license values could be integrated. The value changes of the license being therefore subject to proposal and effective after vote.

The quorum from which these changes are exerted being itself configurable from the beginning by the licensee.

6 - Roadmap

The following roadmap assumes development, research and writing would begin in october with an estimated total of about 40 weeks of work. At the end of each milestone, the newly developed licence or legal-code will be shared with the Aragon team.

MILESTONE 1 - 13WEEKS

- Organization of community effort to reach consensus over the form of licenses we want.
- Recovery of legal text from PPL and first phase of legal rewriting.
- Attempt to establish a partnership with the P2P foundation.

MILESTONE 2 - 13 WEEKS

- Collective definition with members of the blockchain ecosystem of the parameters desired by the community in the future licences.
- Recovery of legal text from PPL and second phase legal rewriting.
- Development of smart-contracts in contact with the legal code written previously and according to the parameters desired by the community.

MILESTONE 3 - 13 WEEKS

- Effort with our developer and the Aragon team to make these licenses AragonsOS compatible.
- First implementation of these licenses around a series of contents (collective writing for books, software and so on) build on top of Pando.
- Audit of the smart-contracts.
- Effort to communicate with the community to increase the number of laboratories and use-cases of this licenses.

STRETCH GOAL

- register all the licenses and projects that have used DAL to create a real licenses library that can be used by everyone

8- Ask

80-90 K for :

- 40K : Payment of lawyers and team members for writing legal licenses and team organisation
- 10K : Travel and expenses of the project members to organize the communication of those licenses to the actors of open-source movement.
- 40K: Development and implementation of smarts-contracts

50K bonus : In the case success of the project through deployment and effective use of this license.

7 - Team

Benjamin Jean

Benjamin Jean is a lawyer specialized in intellectual property and founder of Inno3. He specializes in intellectual property management within the framework of open models (Open Source, Open Data, Open Hardware, interoperability or more generally Open Innovation and Open Access). He is President of the Open Law Association. He is also very present in the Free Software communities, administrator of Framasoft, co-founder of Veni Vidi Libri and of the European Open source & Free Software Law Event (EOLE) conference series. » In 2016, he co-chaired the Paris Open Source Summit 2016 on the theme "Empowering Open Innovation".

Primavera De Filippi

Primavera De Filippi is a permanent researcher at the CERSA / CNRS / Université Paris II and faculty associate at the Berkman Center for Internet & Society at Harvard Law School. She is a member of the Global Future Council on Blockchain Technologies at the World Economic Forum, and co-founder of the Internet Governance Forum's dynamic coalitions on Network Neutrality and Blockchain Technology. In addition to her academic research, Primavera acts as a legal expert for Creative Commons and is part of the stakeholder board of the P2P Foundation.

Lionel Morel

Lionel Maurel is a lawyer and curator of libraries at the University of Paris Lumières, where he holds the position of project manager for Scientific and Technical Information. He specialises in legal issues related to the digital environment, such as intellectual property, personal data protection or public data law. His work also deals with Free Culture in its different dimensions (Open Source, Open Access, Open Data), as well as the question of the commons of knowledge. Author of the S.I.Lex blog since 2009, he is also co-founder of the SavoirsCom1 collective and member of the strategic orientation college of La Quadrature du Net.

Laura Aufrere

Laura Aufrère studied political science and worked for ten years in the cultural sector, including five years as coordinator of the union representing, in France, the initiatives of live/registered entertainment and visual arts recognizing themselves of the social and solidarity economy (UFISC). She is now a doctoral student (FNEC - Paris 13), and works on the dynamics of the social and solidarity economy and the commons in the cultural sector (collectives and joint initiatives, cooperation processes, governance, social protection, social solidarity models, economic models, etc).

Alexandre Rouxel

Co-founder and project manager of Pando and Ryhope, Alexandre was a research engineer and Ph.d student at university Rennes 2 where he studied the contemporary forms of our digital co-presences. Alexandre was a professor of communication sciences between Rennes and Paris for 4 years before leaving its teaching and research activities to fully devote itself to the possibilities opened up by

blockchain technologies. Alexandre constantly question the political scope of the team's projects and develop numerous partnerships with flair and voluntarism.

Olivier Sarrouy

Co-founder and lead developer of Pando and Ryhope, former ingenior and Ph.D student in informatics at Centrale/Supélec, Olivier has worked on various open source projects before developing a passion for philosophy. In 2015, he defends a Ph.D thesis in Communication Sciences on web-based decentralized organizations and the mode of being of the crowds on which they rule. Olivier is now professor in Communication Sciences at University Rennes 2 where he discusses the economical sociological and philosophical implications of distributed organizations and blockchain technologies. When he is not at the university, Olivier spends most of his spare time writing smart contracts to make his political whims come true.

Nolwenn Jollivet

Co-founder and strategy and operating officer for Pando and Ryhope, Nolwenn has a first master degree in Art History and a second in Publishing & Creative Economy. She worked many years in event management, cinema festivals and cultural centers as team coordinator and executive assistant. As a result, she has experienced the harsh reality of pro cultural worlds and has often prefered alternatives that she now seeks to encourage and make possible. Beside her coordination/organisation role, she initiates partnerships to create art labs that will soon be experimenting on Ryhope Networks. Quiet strength of the team, she also writes short stories and comic scenarios. Nothing can makes her happier than a long escape in nature.

Thibault Boixière

Co-founder and research lead, journalist for two years, book reviewer and qualified in modern literature and publishing, Thibault is also a writer in his free time. His first book will be published this year. After a moment Ph.D student in Canada, he studies literature on his own. He's interested in discourses about the end of literature and particularly the possibilities of renewal of contemporary literary field. He's convinced of the importance of blockchain in this domain and enjoys writing articles on the subject.

Cem F Dagdelen

Cem Dagdelen studied Economics and Finance at Bocconi University before undertaking an investment banking career where he was earned awards for trading & "Financial Innovation". After navigating the

start-up financing field, Cem focused his efforts progressively on demystifying his fascination around blockchain. As co-founder of blockchain consulting company Horatii Partners, Cem is a researcher with a particular focus on decentralized governance, future of work and societal changes. Cem is an advisor to Svandis, Pan and Ryhope. He was born a thalassophile and raised a sailor in the Aegean sea.

Daniel Shavit

Daniel Shavit studied Economics and Finance at Bocconi University alongside Cem with whom he co-founded Horatii Partners. After spending a few years in the fashion and “fintech” industry he increasingly devoted himself to blockchain. Daniel is a researcher in the fields of decentralized governance and crypto-economics and lectures on these subjects to students and executives. Daniel is a member of La Fabrique du Futur think tank and of the Blockchain@HEC educative association. Daniel is an advisor to Pan, Ryhope and an amateur DJ in his time unchained from blockchain.

Juan Carlos Escallon

Colombian lawyer and entrepreneur. LL.M. (International Trade Law) and MBA degrees. Extensive experience as legal practitioner in international trade law. Based in Berlin since 5 years. Submerged in the blockchain space since 2016. General Counsel at Blue Swan Initiative, Blockchain product development company in Fin Tech and Legal Tech and Head of Blockchain Law Programs at Blue Swan Academy, educational and talent platform in the areas of Crypto Law, Cryptoeconomics and Smart Contract Development.