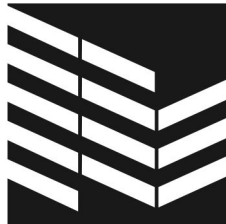


# LegalBlock

A Blockchain Legal Community Promoting Collective  
Wisdom

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We Draft the **Paper**. You add the **Color**.

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A lot of discussions have taken place around the implementations of Blockchain for solving problems related to Legal matters. Before we can see developers acting as Lawyers and Lawyers learning to code, we have to consider that the Human Factor is still necessary to face the times ahead, and the time is now.

*A coordinated community of Legal professionals, acting under  
the umbrella of Collective Wisdom. Not another isolated  
community.*

# Decentralizing the Knowledge

## Collective Intelligence vs Collective Wisdom and the Missing Point

*Collective intelligence* is basically consensus-driven decision making, whereas *Collective Wisdom* is not necessarily focused on the decision process. Collective wisdom is a more amorphous phenomenon characterized by collective learning over time.

*The Hong & Page theorem* holds that diversity is more important than individual talent for group decision making. When diversity is high, the members' mental models supplement each other. "**Groups of diverse problem solvers can outperform groups of high-ability problem solvers**"<sup>1</sup> if we focused on the diverse legal knowledge accumulated in several communities or entities, based on jurisdiction, speciality or even opinion, we find a broad spectrum of useful information which is **dispersed** on the network.

On the other hand, we have Teams and **Projects** arising in the ecosystem experimenting with new models, changing paradigms and continuously looking for legal validation. Again, all the legal knowledge is far from accessible to these new builders.

The third point of observation is the vast number of Legal practitioners working on clusters with their own **approaches** due to the fact of geographical barriers, i.e. jurisdiction. These efforts are incredibly useful to other groups of Lawyers but it comes with a lot of inefficient ways to get there.

Along with this landscape, we have the *Wobbly Table*. As the information is disaggregated, **Regulators** around the world are trying to find the best choice possible, usually, with little understanding.

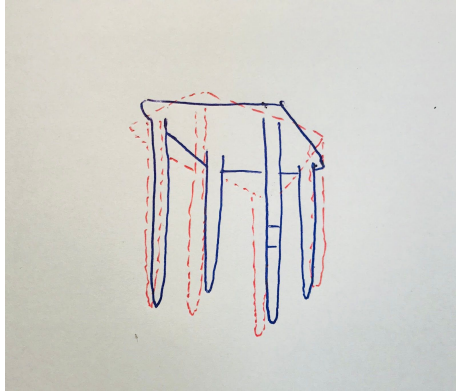
Based on the facts described above, we have

- a) homogeneous networks of Lawyers dispersed in the ecosystem,
- b) a community of creative minds looking for useful legal information,
- c) valuable clusters of curated legal information

AND the Wobbly Table.

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<sup>1</sup> The main result of this paper provides conditions under which, in the limit, a random group of intelligent problem solvers will outperform a group of the best problem solvers. Our result provides insights into the trade-off between diversity and ability. Hong, Lu and Page, Scott. [\*Groups of diverse problem solvers can outperform groups of high-ability problem solvers\*](#). NY, 2014



If we can **shape a structure on the first three points**, then [the Wobbly Table Theorem](#) may be used as a reference for practical application. According to the wobbly table theorem, “you can turn a square table with four legs in such a way that all four legs are on the floor. The [intermediate value theorem](#) assures that there is an angle, where the fourth leg is also on the surface”. That is mathematics. The *intermediate value theorem* underpins the explanation of why rotating a wobbly table will bring it to stability.

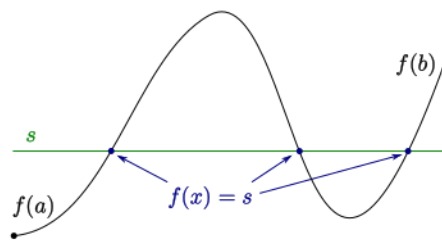
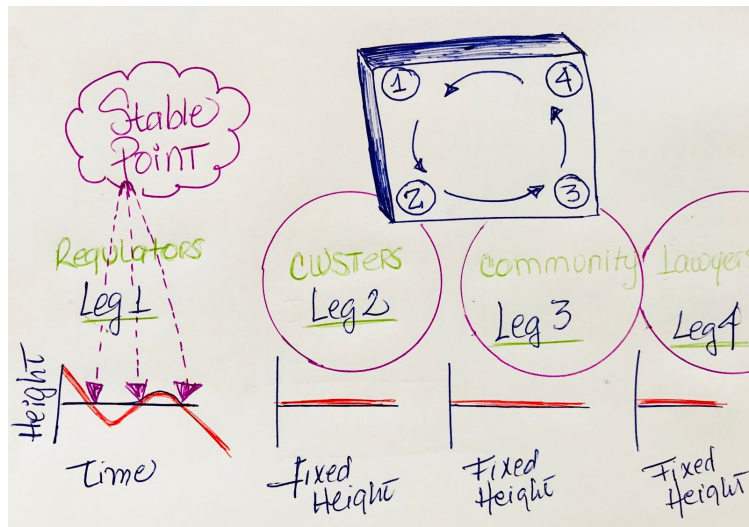


Illustration of the intermediate value theorem: Any on  $[a, b]$  defined and continuous function attains all values between  $f(a)$  and  $f(b)$  at least one time (here the value  $s$  with  $f(a) < s < f(b)$  is explicitly shown) by Stephan Kulla



The aim of this exercise is “thinking out of the box”. Meaning that, when you see a wobbly table, you tend to put a piece of paper between the floor and the leg to get the table balanced. That’s not the solution as the table weight won’t make possible keeping the balance after some time has passed. However, “thinking out of the box” and applying the mathematical intermediate value theorem, if you turn the table you will find that the four legs are

touching the floor. Hence, the table is balanced. The analogy of the fourth leg here is Regulators.

*We are immersed in a new reality. The platforms, the protocols, the whole ecosystem is based on a global scale. There is not good jurisdiction or bad jurisdiction. There is not the right opinion or the wrong opinion. “Here” and “there” are not relevant to this new reality anymore. This new Legal approach demands something beyond and that is the Missing Point.*

How can we solve this dilemma?

## **We propose**

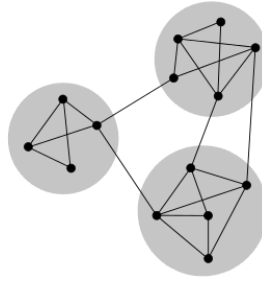
**a Community Structure, coordinated by Catalysts promoting Collective Wisdom**

### **I. Community Structure**

In the study of [complex networks](#), a network is said to have [Community structure](#) if the nodes of the network can be easily grouped into sets of nodes such that each set of nodes is densely connected internally.

There are different and several Legal Communities doing remarkable advances and proposals to the ecosystem. However, working separated from the global landscape is not efficient. We don't aim to bring individual participants to join a community channel just to exchange opinions and start discussions. We need all that work already done by the different **Legal Clusters**.

We can find Clusters everywhere from Blockchain based protocols for creation and execution of Legal Agreements, Research networks, Advocacy Centers for policymakers up to task groups with sound standard proposals and Teams. These Legal Clusters are working each one on a particular area of expertise. The groups are “clustered” around a specific mission or even a jurisdiction.



A sketch of a small network displaying community structure, with three groups of nodes with dense internal connections and sparser connections between groups. By j\_ham3

In order to coordinate the information, further workflows will be discussed within the community.

We want to coordinate the information in a way that the whole community can benefit from the work in progress. Therefore, we propose coordinated efforts to get involved those who can “bring something to the table”. We want Legal practitioners and their developments.

## II. The Catalyst Effect

*"As a catalyst, it's all about letting go and trusting the community."*  
Ori Brafman

We aim to make information access as efficient as possible for the community. We, the authors of this paper, surprisingly, are not Lawyers. Why would we want to build Legal Block as a Legal Community in the first place? Because we need guidance, as fast as possible, as coherent as possible.

We believe in decentralization. We are **Catalysts**. This concept, postulated by Ori Brafman in his book *The Starfish and the Spider*<sup>2</sup> identifies a set of people that the authors call "catalysts", which tend to be experts in the creation of decentralized organizations. As catalysts, we don't need to be Lawyers but to manage the function of coordinating the information. Along with the spirit of helping to understand the

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<sup>2</sup> Brafman, Ori and Beckstrom, Rod. *The Starfish and the Spider: the unstoppable power of leaderless organizations*. Penguin, US. 2006

material, this duty is what makes possible that the propagation of information is organized coherently.

Can Lawyers in the Community be Catalysts as well? Absolutely. As decentralized as it is, “it’s all about letting go and trusting the community”. We, as Catalysts, have a set of Tools. These tools, better understood as a behavior, embrace Trust in others and in the decentralized network, Inspiration to others, Tolerance for ambiguity.

We, as Catalysts do not interfere with, or try to control the behavior of the contributing members of the decentralized organization. **We propose the LegalBlock community vote.**

After building up a decentralized organization, catalysts move on, rather than trying to take control.

### III. Collective Wisdom

As we have stated above, Collective Wisdom is far beyond a decision-making process. Based on the elements required to form a wise crowd described by James Surowiecki and the conjectures made by Prof. Harri Oinas-Kukkonen<sup>3</sup>, we can increase dramatically the wisdom of the community if we create certain conditions. Therefore, we propose the following principles for Legal Block community:

- Diversity of opinion: Participants should bring their own information and interpretation. Even if the content could be seen as “eccentric interpretation of the known facts”, we encourage out-of-the-box thinking. Different backgrounds are welcome to join.
- Independence: Participants should have their own opinions, which are independent and not determined by the opinions of those around them. Participants can contribute bringing information from a variety of areas where

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<sup>3</sup> Four elements required to form a wise crowd. Not all crowds (groups) are wise. According to Surowiecki, these key criteria separate wise crowds from irrational ones:

Criteria Description

- Diversity of opinion: Each person should have private information even if it's just an eccentric interpretation of the known facts.
- Independence: People's opinions aren't determined by the opinions of those around them.
- Decentralization: People are able to specialize and draw on local knowledge.
- Aggregation: Some mechanism exists for turning private judgments into a collective decision.

Based on Surowiecki's book, Oinas-Kukkonen captures the wisdom of crowds approach with eight conjectures which have been included as well within the four elements of criterion.

they have a presence. Participants are Policy-makers, Regulators, Arbitrators, Legal related projects, and so on.

- *Decentralization:* Participants are specialized in local knowledge, making a geographic difference, such as Jurisdictions, a supportive condition to increase the wisdom. Participants with expertise in their particular jurisdiction have a lot of experience to draw on.
- *Aggregation:* An Information aggregation functionality is needed. This is the tipping point for any endeavour. We can gather all the information and establish mechanisms for turning individual judgments into a collective decision. Every decision-making process produces a final choice, which may or may not prompt action. We want to set up a decision-making environment based on a dynamic of consensus, vote and reputation in order to prompt action.

Applying this criterion, we can create a decentralized organization which is beyond a good community (Collective Intelligence) to become an outperforming community based on collective wisdom. A good example of Collective Intelligence is Bitcoin Community, whereas Ethereum Community is an example of Collective Wisdom.

***We propose a*** Community Structure, ***coordinated by*** Catalysts ***promoting***  
Collective Wisdom

## Therefore, we want

- A Positive-sum network

Building a Positive-sum network where Community as a whole and participants play the game through collaborative activities and partnerships with projects. A positive sum occurs when resources are somehow increased, and an approach is formulated in which the desires and needs of all concerned are satisfied.

Activities could include a Project Team presentation of their case to LegalBlock (A.M.A) in order to document a case study for regulatory frame, a partnership with Dapps in Beta

for pilots, introduction to Legal related developments such as Legal Agreement solutions build on Blockchain, etc.

Let's say Legal Cluster X is developing a protocol for notary services. Cluster Y is a Legal Community based in Spain. Cluster Y can highly benefit from the development of Cluster X due to the importance of notarized processes in that jurisdiction. It is not the case for a cluster of legal practitioners in the state of Florida, US.

Moreover, let's assume a Real Estate project needs to implement a module to notarized leasing agreements. We coordinate the activity and process from which the Team introduces the project to LegalBlock where different options are a match. E.g. If the Real Estate project operates in Peru, the cluster working around notary services is a match. If the Real Estate project aims to run operations in the US, then the platform to create legal agreements would be its best choice.

To illustrate another example of Positive-sum Network, let's take Professor C, who has a program called "Lawyers and Coding 101", and he is a participant in the community. The Catalysts organize the course offer for the community. In this particular example, we can see coordinated information, sharing knowledge and monetization at the same time. If we add here the reputation system discussed below, we are closing a loop.  
We will discuss incentive models in the second part of this paper.

## ● Super Connectors

Super Connectors<sup>4</sup>, acting as the link to other groups, are essential to our Community. We see early supporters Lawyers as the organic path to validate the idea of Community Structure as described above (see I. Community Structure). Super Connector Lawyers can contribute with knowledge and bring to the community the participants who are already working in their clusters. We can see a clear example of this network effect with jurisdictions. Lawyer A who is a practitioner in NYC, where three different group of Attorneys have been working on Regulation proposals, is a Super Connector. Lawyer A, acting as a link, invites these three clusters to introduce their work to LegalBlock. Lawyer B has her practice in Singapore. Therefore, Lawyer B can benefit from the information Super Connector Lawyer A is bringing, the three work groups in NYC can exchange regulatory insights with Lawyer B on Singapore regulation, and a new body of information has been created.

We aim to reward Super Connector Lawyers for their contribution.

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<sup>4</sup> Guido Caldarelli and Michele Catanzaro. *Networks. A very short Introduction*. [Abstract of chapter: Superconnectors](#)



- Reputation

In real life, reputation is paramount for the Legal industry. Through Collective Wisdom, we can refine that concept relying on the participants. At the first stage, the invitation to early members of the community is based on public knowledge of her or his work, experience, specialization and understanding of the ecosystem. However, the reputation is subject to validation in the community. That means the same colleagues will vote on the reputation of each other, avoiding the social media self-promotion or marketing exposure. Implementing this system, we can diminish Collusion Resistance<sup>5</sup> and work around the egocentric tendency that characterizes the lawyer.

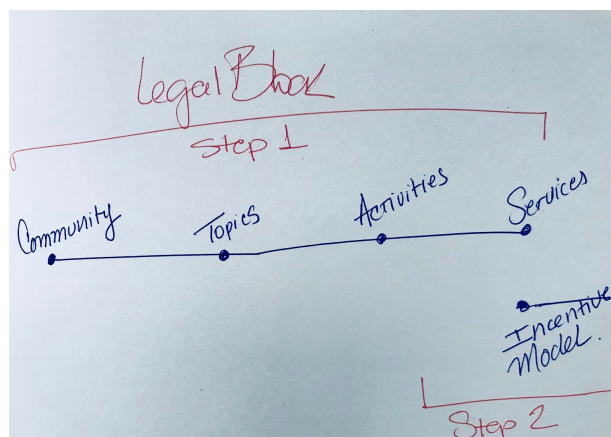
Reputation and economic incentives are interdependent elements to play the game.

## LegalBlock as an Autonomous Organization

LegalBlock is an autonomous organization. We have secured the domain legalblock.eth. In order to manage all the aspects of the organization, LegalBlock will be powered by Aragon after the release of the new V.05. We are interested in the benefits Aragon provides for: bylaws, shares records, accounting and identity registers.

## The Road Ahead

This paper concludes with a 4-steps timeline designed along with early collaborators:



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<sup>5</sup>Buterin, Vitalik. [The Meaning of Decentralization](#). Medium, February 6th 2017

The content of this paper is considered the part one. We have discussed the conceptual framework.

On the second part of this paper, we discuss the incentive model and crypto economics. We propose a new correlation between price and value, the analogy of Proof of Time to be used as a foundation of pricing, the reputation and Super Connectors rewards, the approach on the Token as a facilitator for coordination and Curation Markets.

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